



**Economic and Social  
Council**

Distr.  
GENERAL

TRANS/2002/9/Add.2  
18 December 2001

ENGLISH ONLY

---

ECONOMIC COMMISSION FOR EUROPE  
INLAND TRANSPORT COMMITTEE  
(Sixty-fourth session, 18-21 February 2002,  
agenda item 10(e))

**TRANSPORT TRENDS AND ECONOMICS**

Studies on transport economics and track costs  
undertaken by other organizations

Addendum 1

Transmitted by the Organisation for Economic Co-operation and Development (OECD)

Note: Information in this document is reproduced in the form in which it was received by the secretariat.

\* \* \*

## **I. Recent OECD Transport Division achievements in relation to transport economic and cost of infrastructure.**

### **1. Asset Management for the Road Sector, published in 2001.**

In most OECD Member countries, the road network constitutes one of the largest community assets and is predominately government-owned. Road administrations must maintain, operate, improve, replace and preserve this asset while, at the same time, carefully managing the scarce financial and human resources needed to achieve these objectives. All of this is accomplished under the close scrutiny of the public who pay for and are regular users of the road network, and who increasingly demand improved levels of service in terms of safety, reliability, environmental impact and comfort.

Asset management as applied to the roads sector represents “a systematic process of maintaining, upgrading and operating assets, combining engineering principles with sound business practice and economic rationale, and providing tools to facilitate a more organised and flexible approach to making the decisions necessary to achieve the public’s expectations”.

Governments are placing greater pressures on road administrations to improve the efficiency of, and accountability for, the management of the road network. Indeed, in many countries, local highway authorities face formal accountability and reporting requirements on how they manage their assets.

Asset management systems offer the prospect of significantly improving road network management outcomes. This report is a review of asset management systems as applied to the roads sector and an analysis of the responses to a survey conducted among those countries represented on an OECD Working Group on Asset Management Systems.

*A copy of the Executive Summary could be obtained upon request to the RTR Secretariat.*

### **2. Performance Indicators for the Road Sector : Summary of the Field Test, published in 2001**

Following the recommendations of the OECD 1997 report, Performance Indicators for the Road Sector, a task force was established to field test a selection of 15 performance indicators used by road administrations throughout the world. The objective of the project was to assess the applicability of the performance indicators to improving the management of road administration. The field test was conducted over the period 1997-99 in 15 Member countries. This report outlines the approach adopted and summarises the results of the field tests.

The 15 indicators that were field tested included: average road user costs; level of satisfaction regarding travel time and its reliability and quality of road user information; protected road user risk; unprotected road user risk; environmental policy/programmes; processes in place for

market research and customer feedback; long-term programmes; allocation of resources to road infrastructure; quality management/audit programmes; forecast values of road costs vs. actual costs; overhead percentage; value of assets; roughness; state of road bridges; satisfaction with road condition.

A key aspect of the project was the comparison of the processes in which the indicators are applied by different road administrations. Qualitative assessment on the role of and function served by road administrations, and whether the execution of their mandates reflects the views of the public and government, suggested a need cultural change in most cases toward a client focused approach. The task force concluded that quantitative comparison between administrations is of limited usefulness unless it is accompanied by a thorough examination of the underlying reasons for any differences.

*A copy of the Executive Summary could be obtained upon request to the RTR Secretariat.*

### **3. Intermodal Freight Transport : Institutional Aspects, published in 2001**

#### **Abstract**

Industry has increasingly adopted an intermodal approach to the provision of transport services required by users. The main reasons for government involvement in intermodal transport policy are to promote the efficient use of infrastructure, facilitate improved services to users and address environmental concerns associated with the use of individual transport modes. Intermodal policy development is especially important where governments own transport infrastructure (such as ports and terminals) and transport business operations (such as rail freight operators). Even in countries with a high degree of reliance on market forces, governments need appropriate intermodal policies to be able to deal with efficiency, taxes and charges and environmental issues on a transport system basis.

Organisational arrangements are important to intermodal policy development and operations. Intermodal transport policy units or other institutional arrangements tailored to intermodal requirements can provide a greater policy focus and improve communications with industry as well as within government. OECD Member countries have developed a variety of policy instruments and measures which aim to improve intermodal transport outcomes. Further work is being undertaken to develop benchmarks for intermodal performance and policy options to address remaining impediments to intermodal efficiency.

*A copy of the Executive Summary could be obtained upon request to the RTR Secretariat.*

### **4. Ageing and Transport : Mobility Needs and Safety Issues, published in 2001**

#### **Abstract**

The baby boom generation's maturation to retirement, lower birth rates and increased longevity are creating dramatic demographic shifts in OECD Member countries. By 2030, baby boomers will account for one in every four persons in the developed world, and by 2050, experts predict

a tripling of those aged 80 or more. This “greying” of society will affect virtually every facet of life in the 21st century. Proactive and thoughtful planning is needed to ensure senior citizens’ safe, lifelong mobility. Members of this generation will live longer, more active and healthier lives than earlier generations. However, there is a tendency to associate older people with progressive functional loss and disability, and public perception of the safety of older road users may be based on erroneous information, unsupported by actual crash data. It is important to clarify this situation and to distinguish between their personal risk of injury or death in a crash and the risk some may present to the safety of others.

An OECD Working Group comprised of road safety research practitioners, transport planners and engineers, medical professionals and policy makers has explored the travel patterns, transport and safety needs and mobility implications of tomorrow’s elderly. The study examines mobility in the context of other societal objectives, including safety, infrastructure provision and accessibility. It aims to inform strategists, policy makers, regulators and the general public of the ageing population’s safety and mobility needs. Further, it seeks to dispel many myths and misconceptions about older road users and presents the latest research findings in order to assist decision makers to formulate sound policies and programmes for the safe mobility of ageing populations.

*A copy of the Executive Summary could be obtained upon request to the RTR Secretariat.*

#### **5. The Heat on Transport: Strategies to reduce CO2 emissions (due to be published January 2002)**

Approximately 28% of total OECD CO2 emissions come from transport. Within this, road-based transport accounts for approximately 80% of greenhouse gas (GHG) emissions from transport. The OECD Road Transport and Intermodal Linkages Research Programme established a Working Group to undertake a comprehensive study on CO2 emissions from road transport, with the aim of providing a useful framework for assessing the strategies of the road transport sector in reducing emissions on a global scale.

However, measures exist that can contribute to alleviate the road transport share of greenhouse gases. The most effective policies and measures for reducing GHG emissions by private cars and road transport involve a package or combination of measures, such as: voluntary agreement between vehicle manufacturers and government to produce low-fuel consumption vehicles; graduated vehicle taxes and excise duties; consumer information; and promotion of greater fuel efficiency in the different sectors involved.

#### **6. Safety Management – Making it Happen (due to be published January 2002)**

Approximately 125 000 people die every year on the roads of OECD countries. A wide variety of solutions have been put in place in OECD countries and further measures are being developed for implementation. However, no country has implemented all proven measures to their full extent.

Fatalities across OECD countries could be halved if all governments were fully committed to improving road safety by implementing and enforcing best practice measures.

This report identifies and assesses “best practices” among road safety programmes in OECD countries. An emphasis is placed on those programmes that have been evaluated and proven effective through cost-benefit or other types of analyses. In addition, the underlying criteria that influence the success or failure of these “best practices” are identified to facilitate the development of effective road safety policies in Member countries.

## **7. Impact of infrastructure investment on regional development (to be published 2002)**

The belief that transport infrastructure projects have significant impacts on the development of regional economies has often been used to justify allocating resources to transport infrastructure investment. But the clear meaning of these impacts or how these impacts could be evaluated has yet to be established. The general approach used by decision-makers in the evaluation of transport investment is cost-benefit analysis (CBA). Traditional CBA, though varying in form from one country to another, is limited in its application since it concentrates on the direct user benefits of transport. The evaluation of projects using traditional CBA appears to be deficient in justifying the socio-economic interest of the public or private sectors, because it does not take adequate account of the likely regional impacts arising from the investment.

The report concluded that it is extremely difficult to measure the exact relationship between transport infrastructure investment and regional development. Though there are theoretical studies suggesting the presence of significant impacts, they need to be complemented by empirical evidence from existing ex-post evaluation studies. Transport infrastructure investment has the direct effect of improving travel conditions for its users. This will change users' behaviour and have wider impacts on the network. There could be further impacts including accessibility, level and location of employment and increased efficiency that will contribute to regeneration of a region. The externalities generated by the investment in transport infrastructure need to be recognised as well, including social inclusion and environment.

The Report highlighted the lack of information available from ex-post studies that could give a firm quantitative basis to the claims about the impact of infrastructure investment on regional economies and regeneration. Thus the ability to provide guidance on how project appraisal methodology could be improved is limited.

The Report identifies that employment impacts and contributions to improved accessibility and social inclusion are unlikely to be created by transport investment alone. There is a need for a whole range of initiatives covering training, housing, social services etc in order to ensure spending on regeneration will have the desired effect. A clear objective for an infrastructure project concerning regional development, including the context and specific strategic needs of the regions, is necessary. Setting of these objectives should also include their relationships to policies of other sectors and relevance to other tiers of the government, in order to allow decision-makers to co-ordinate their policies and infrastructure plans. The impacts of

the project should always, in their ex-ante and ex-post evaluations, be evaluated against these broader objectives.

## **8 Workshop: Impact Of E-Commerce On Transport**

### **Purpose and form of the Workshop**

The purpose of the Workshop was to analyse the implications for freight transport of the growth in e-commerce. In that respect, the discussion of issues focused on challenges to sustainable development that should be addressed through research projects.

The Workshop was held in Paris on 5-6 June 2001. A summary of the Conclusions and Recommendations are the RTR Website

(<http://www.oecd.org/oecd/pages/home/displaygeneral/0,3380,EN-document-25-nodirectorate-no-20-19078-25,FF.html>).

## II. Current Research Activities in the OECD Transport Division -- Research projects 2001-2003

Research projects focus on the following three key activity centres:

- Sustainable Transport Development.
- Multimodal Transport Strategies.
- Economic Performance, Transport Infrastructure and Management.

### **Sustainable Transport Development**

#### *Transport and the Environment*

- Low-emission vehicles: implementation issues.

#### *Transport safety*

- Using technology to improve road safety.
- Motorcycle crashes: analysis of in-depth investigations.
- Reducing children's transport-related injuries and fatalities.
- Human factors of transport technology for elderly users.

#### *Multimodal transport strategies*

- Benchmarking
  - Methodology
  - Application to Intercontinental freight transport corridors.
- Urban freight logistics.

#### *Economic performance, transport infrastructure and management*

- Workshop: Financing Transport Infrastructure Investment.
- Workshop: International Pricing Symposium - Theory and Practice.

### **International databases**

The *International Transport Research Documentation (ITRD)* database of the RTR Programme has been instrumental in extending research results and information on transport to Member and non-member countries. The *International Road Traffic and Accident Database (IRTAD)* provides comprehensive information on road crashes, vehicle numbers and kilometres travelled in OECD Member countries. Hence, it provides an important input to research for policy analysis in road safety. The OECD has a unique role to play in the development, management and dissemination of information from databases on transport.

**Each of the above activities are described more in detail hereunder.**

## **1. LOW-EMISSION VEHICLES: IMPLEMENTATION ISSUES**

**Objective:** Develop strategies to facilitate the implementation of low-emission vehicles, including their global performance in terms of safety and the environment.

### **Tasks:**

Based on the existing literature from the International Energy Agency (IEA), from the car manufacturer associations and from other international organisations, assess the potential of existing and emerging low-emission vehicles and analyse their performance as a whole.

Development of a global indicator that takes noise effects, emissions, comfort and safety performance into account.

- Evaluate current testing procedures for environmental and safety performance.
- Assess the life-cycle implications of alternative fuels (e.g. battery disposal).  
Assess the role of the various stakeholders (governments, car manufacturers) in the promotion and implementation of low-fuel consumption vehicles in specific fleets.  
Identify likely new infrastructure needs, such as fuelling infrastructure for hydrogen-based vehicles, and possible technical barriers to the widespread use of these vehicles.  
Identify the implications for policy, including measures, to encourage the development and uptake of low-fuel consumption vehicles.

## **2. USING TECHNOLOGY TO IMPROVE ROAD SAFETY**

**Objective(s):** Identify new safety technologies that can reduce or prevent risk-taking by drivers (e.g. automatic safety belts, alcohol locks, speed controls), and the role that technology may play in facilitating the introduction of other road safety measures.

### **Tasks:**

Identify and evaluate the possible effectiveness of emerging innovative safety technologies.  
Identify the technical and political difficulties and implications in introducing these.

## **3. MOTORCYCLE CRASHES: ANALYSIS OF IN-DEPTH INVESTIGATIONS**

**Objective:** Development of measures to improve the safety of motorcyclists through analysis of factors associated with motorcycle crashes.

### **Tasks:**

Continued implementation of the common methodology, and collection of data.

Creation of a common database of all cases collected by participating countries.

Statistical analysis to identify the main factors linked with motorcycle crashes. For each type of crash, analyse the mechanisms that could be conducive to a crash situation.



Analyse differences between countries.  
Identification of improvement measures:  
To prevent each type of crash.  
To reduce the severity of crashes (motorcycle safety devices, drivers' equipment, road infrastructure, emergency services, etc.).  
Propose strategies to improve the safety of motorcyclists.

#### **4. REDUCING CHILDREN'S TRANSPORT-RELATED INJURIES AND FATALITIES**

**Objective:** Documentation, analysis and evaluation of strategies for reducing children's transport-related injuries and deaths.

**Tasks:**

Creation of a statistical database on children's transport-related injuries and fatalities in OECD Member countries. (Note: potential to dovetail methodology developed for OECD's motorcycle accidents' project).  
Analysis of data, and identification of key safety issues.  
Review and evaluation of effectiveness of existing safety regulations, enforcement, and educational programmes designed to reduce the risk of children's transport-related injuries and incidents.  
This review could include, but is not limited to: the mandated use of child-restraint devices in vehicles; the use of safety helmets for juvenile bicyclists; video enforcement of motorists' red light running; and at-school educational programmes for children (including grade crossing, intersection crossing, pedestrian and bicycling safety programmes).  
Compile best practices with proven effectiveness in reducing children's injuries and deaths.

#### **5. HUMAN FACTORS OF TRANSPORT TECHNOLOGY FOR ELDERLY USERS**

**Objective:** Improve potential for the safe operation of motor vehicles and optimal usage of available transport technology to meet mobility needs of the elderly.

**Tasks:**

Desktop survey of older driver skills' assessment programmes, training, and adaptive learning programmes in the OECD region. How and when is the road performance of older drivers being assessed?  
Review of existing and emerging transport technology including but not limited to: smart cards; smart kiosks; traveller information systems; in-vehicle navigation systems/GPS; transponders and pop-up traffic sign displays.  
Analysis of implications of the systems identified above on older users. What are the potential cognitive, visual, and auditory limitations that older users could encounter in attempting to use this technology? What are the policy implications of these findings?

## 6. BENCHMARKING

**Objective(s):** The purpose of the project is to develop benchmarks for assessing the relative efficiency of modes/modal combinations and intermodal transfers, and to identify sources of inefficiency that could contribute to modal choice.

**Tasks:**

Reviewing studies on transport benchmarking and the data available.

Developing benchmarks to assess the performance of modes and modal combinations including a discussion of benchmarks based on total factor productivity analysis.

Developing benchmarks to assess the performance of ports and terminals at the modal interface.

Applying the benchmarks to key transport corridors and commodities to enable comparative assessments to be made.

Identify factors contributing to differences in their performance.

Developing policy options to improve performance.

## 7. INTERCONTINENTAL FREIGHT TRANSPORT CORRIDORS

**Objective(s):** The determination of sources of transport inefficiency in key international corridors, involving major container transfers, and their impact on transport costs.

**Tasks:**

Identifying key international transport corridors within the North American/Asia-Pacific/European trade flows (including maritime, road, rail links).

Identifying primary impediments to intermodal transport efficiency related to the following:

- Institutional (organisational, regulatory, taxation, investment).
- Infrastructure (funding, access, management).
- Technical (standards, information and communications' technology).
- Management (operating conditions/hours).

Reviewing available data and estimating the cost impacts of those impediments on transport and on products carried.

Reviewing the effectiveness of current policy instruments adopted by Member countries to promote the efficiency of intermodal transport.

Identifying policy options to address the impediments, including the application of networks (*e.g.* Intermodal Explorer) to improve awareness of intermodal linkages and opportunities.

Assess the likely implications for transport corridors and trade flows by removing impediments.

## **8. URBAN FREIGHT LOGISTICS**

**Objective(s):** Determine appropriate urban policies for freight transport, focusing on innovative solutions to minimise pollution, noise and congestion caused by freight transport.

Identify the impacts of new technologies and urban planning on the organisation of city logistics.

Establish best practices through a review of innovative approaches in OECD cities.

### **Tasks:**

Identify innovative solutions to minimise the harmful effects of freight distribution in urban areas.

Evaluate the barriers and problems with new solutions.

Evaluate the impacts of these options on distribution efficiency.

Identify the policy implications.

## **10 WORKSHOP: FINANCING TRANSPORT INFRASTRUCTURE INVESTMENT**

**Objective(s):** Determination of appropriate financing options for investment in transport infrastructure projects.

Identification of best practice for private sector financing of transport infrastructure projects.

### **Tasks :**

Evaluate experiences among Member countries with public-private sector partnerships in financing investment in transport infrastructure.

Evaluate the merits of hypothecation of funding for transport infrastructure investments, including the use of funds from transport asset pricing initiatives.

Assess Member countries' experience with multi-modal infrastructure funds, and the determination of investment priorities across modes, port and terminals.

Analyse options for both the private and public sectors in managing risk associated with investment in transport infrastructure, including risk management in private/public sector partnerships.

Identify the policy implications.

## **11 WORKSHOP: INTERNATIONAL PRICING SYMPOSIUM - THEORY AND PRACTICE**

### **Purpose:**

The seminar will provide a forum to update information on the state-of-the-art of road pricing from a practitioner's standpoint i.e. where road pricing is being implemented, by whom, how it is working, where/why it is not working, lessons learned, etc. Its aim is to link problems/issues arising from practical implementation of pricing theory, including studies on demand elasticities.

The symposium should incorporate the results of research conducted by other organisations including the ECMT and the TRB, among others, to expand the understanding of real-world applications and outcomes of road pricing around the world. The seminar is scheduled for November 2002.

The seminar will include elements such as:

Overview of global pricing practices into the millennium.

Pricing paradigms around the world.

The political aspects of pricing governmental support of road user charges and strategies.

Evaluation, results, and "lessons learned".

Public policy implications.

Research recommendations.

-----