PIARC – C4

INTERURBAN ROADS AND INTERURBAN INTEGRATED TRANSPORT

Tuesday 21 October 2003 (1.30 – 5.00 p.m.)

SESSION AGENDA & INTRODUCTORY REPORT

22.04.E

SESSION AGENDA

1. Summary of activities of the Committee working groups

Mr. Jean-Michel GAMBARD (C4 Chairperson/FRANCE)

2. Conference - discussion: "Coping with future demand for interurban transport

a) Ways to influence modal split

Mr. Robin James SHAW (C4 member/UK)
Mr. Hitoshi IEDA (C4 member/JAPAN)

Discussion

b) Improving the road transport system

- Optimizing use of existing network

Mr. David WRIGHT (C4 member/UK)
Mr. A. B. PAWAR (C4 member/INDIA)

- Public acceptance

Mr. Gérard VUILLEMIN (C4 member/FRANCE)

Discussion

3. Conclusion and future items for C4

Mr. Jean-Michel GAMBARD (C4 Chairperson/FRANCE)

Discussion

Closure

Mr. Jean-Michel GAMBARD (C4 Chairperson/FRANCE)

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EXECUTIVE SUMMARY

Transportation demand growth is at a faster pace than network capacity.

Coping with the rapid increase in the demand for transport – especially road transport – is a worldwide challenge both in developed and developing countries. The fast pace of urbanisation has also led to a tremendous growth in **interurban traffic**. Long distance/international traffic shows on average the largest growth rate. We all know that the transportation sector plays a major role both for the economic development and the environmental balance of the world.

This happens within a framework of limited resources for infrastructure investment and increasing environmental limitations, with many countries actually foreseeing a decline in network performance.

The common question thus addressed by the Committee through its three Working Groups - and which will also be the main theme for the **C4 Congress session** - is thus:

How to cope with future demand for interurban transport (passenger and goods) taking into account sustainable development objectives?

1. **Mobility and economic development - could some degree of decoupling be achieved?**

Analysis has been carried out (from World Bank data sources) that demonstrates a meaningful correlation between the development of road transportation and the economic indicators (GDP), giving evidence of the importance of the transport (and especially road) systems for the economic development. This raises the question of a possible decoupling of transport growth from economic growth as has been suggested in some recent policy papers.

From our point of view mobility seems to remain a basic need for human beings and an incontrovertible factor in our economic life. We, therefore, **do not see it very realistic in the foreseeable future, to expect a disconnection to any considerable degree** between this need for mobility, the provision of transportation networks and demands of economic development.

2. **To what extent can other modes of transport reduce the pressure on the road sector? Possibilities and limits to modal split.**

We consider **a comprehensive "multimodal" approach to the transport system** as a major step toward the goal of "sustainable mobility" - in addition to the contribution available from various technological advances in cleaner and energy-saving vehicles. To what extent other modes of transport can reduce the pressure on the road sector is, however, highly debated.

The Committee report discusses ways to influence modal split in terms of:

- Institutional and Organisational aspects,
- Financial Incentives/Dis-incentives, and
- Physical Alteration/Improvements,
- Attitudes and Values.

Generally speaking, there is a limited potential of modal transfer and any significant transfer supposes highly deliberate policies and massive investments in favour of the alternative mode. In any case one must still accept that the road sector will remain dominant.

3. Improving the road transport system by:

- **Optimising the use of the existing road network**

Supply of road infrastructure does not seem to be able to keep pace with the growing demand. The interurban road network in the developed countries around the world is substantially completed but as the existing networks ages, it can hardly keep pace with the ongoing traffic increase.

Due to the financial and environmental constraints the emphasis for improving and optimising the road network is changing from **structural measures** to making better use of the existing infrastructure by measures for **managing** the existing interurban road network.

The field, which deals with achieving the objectives for **mobility, safety and congestion** on the interurban road network, is very complex. At present quite different kinds of intervention are required in various countries depending mainly on the state of development of the road network as well as the overall economic situation.

The most commonly employed optimisation measures in most C4 member countries are **maintenance and operational measures and added capacity. Road pricing** is also a measure that is relatively widespread among the member countries involved, though at present primarily used to create revenues. It can however also be an optimising measure providing incentives for reducing travel demand on congested road sections. The main cause of congestion is most often due to high volumes of private cars. Also the tackling of **incidents** is of increasing importance.

There is some evidence of a different emphasis between developed and developing countries, with the former focused more on making **better use** of existing infrastructure and the latter likely to be focused on **building new infrastructure** and **funding mechanisms**. Unfortunately the information from developing countries is very limited.

- **Improving public acceptance of new infrastructure projects**

Despite increased emphasis on the organisation of society (economic development/transport demand), to use alternative modes and optimise use of existing networks, the dominating and still fast growing road sector will need extended infrastructure especially in developing countries and countries in transition.

As they cope with a need to create new infrastructure, the political decision-makers and the road authorities may nevertheless have to face some conflicts of interest, and even opposition in principle, raising in their minds the question of the social acceptability of their projects.

As a result they seek increasingly to involve one that is representative of all the parties involved and the beneficiaries too, and which is present throughout the decision-making process.

The quality of the decision-making process itself is related to a number of criteria: transparency, democracy, coherence, continuity, flexibility and adaptation to projects of different size.

However, satisfying these criteria is not always enough in itself to ensure the social acceptance of projects. Problems emerge, either connected with the procedures or of a socio-cultural nature.

The best way for the road authorities to cope with these difficulties is to involve the public at the earliest possible stage, to find the time and resources necessary for obtaining this social acceptance, and to ask the right questions at the right time, all this without allowing the project to fade away.

It is important for the public to be able to find out where decisions are taken and who the decision-makers are, for them to be aware of the main milestones in the project planning process when important decisions are to be taken, and at what level and to what extent they are able to intervene.

As far as the elected representatives and project managers are concerned, they must play their full part both nationally and locally, paying particular attention to the introduction of quality considerations to the process and its desired results, so that they may in particular draw up clear instructions for the project managers and contractors within a technical and legal framework that is fully comprehensible.

MEMBERS DRAFTING THIS REPORT

This introductory report has been elaborated by:

The Secretaries:

Mr. Amund Bolstad, Norway
Mr. Erwin van Dessel, Belgium

And the three Group leaders:

Mr. Robin Shaw, United Kingdom
Mr. Michel Egger, Switzerland
Mr. Gerard Vuillemin, France

Under the responsibility of the Chairman:

Mr. Jean-Michel Gambard, France

The report, however, is based on contributions from many Committee members through their participation in the Committee work. For further details and names we refer to the three Committee reports respectively (see also annex 1).

SESSION INTRODUCTORY REPORT

This presentation is based primarily on the reporting from the Committee's three Working Groups:

WG1 report: Towards a multimodal approach of the transport system.

WG2 report: Optimising the existing interurban road network.

WG3 report: Achieving Social Acceptance of Transportation projects.

Unifying the most important questions and findings related to the main item raised for this session: **How to cope with future demand for interurban transport (passenger and goods)?**

Background: a rapid growth of road transport

Transportation demand has exploded in the last decades in conjunction with a rapid economic growth in most countries. The road sector dominates this picture even though air- transport has also shown a considerable growth in relative terms.

Based on members' reports the rapid traffic growth is expected to continue in the near future, with average estimates for 2000- 2020 amounting to:

- Developed countries: Averaging around 50% (reported variations in estimates from 30 up to 100%);

- Developing countries/countries in transition: Shows more variations (and less data available). One group of country reports estimated increases of 150% and more, while some others show more stagnation with figures below 30%.

Most often this rapid growth is combined with limited resources for infrastructure investment and increasing environmental limitations. A survey of satisfaction **with present day overall capacity of the road network and the predicted figures for the next two decades shows a significant** decline **in expected satisfaction.**

Satisfaction	Today	Years 2015 – 2020
Sufficient	8 %	3 %
Mostly sufficient	44 %	3 %
Fairly sufficient	28 %	56 %
Insufficient	20 %	38 %

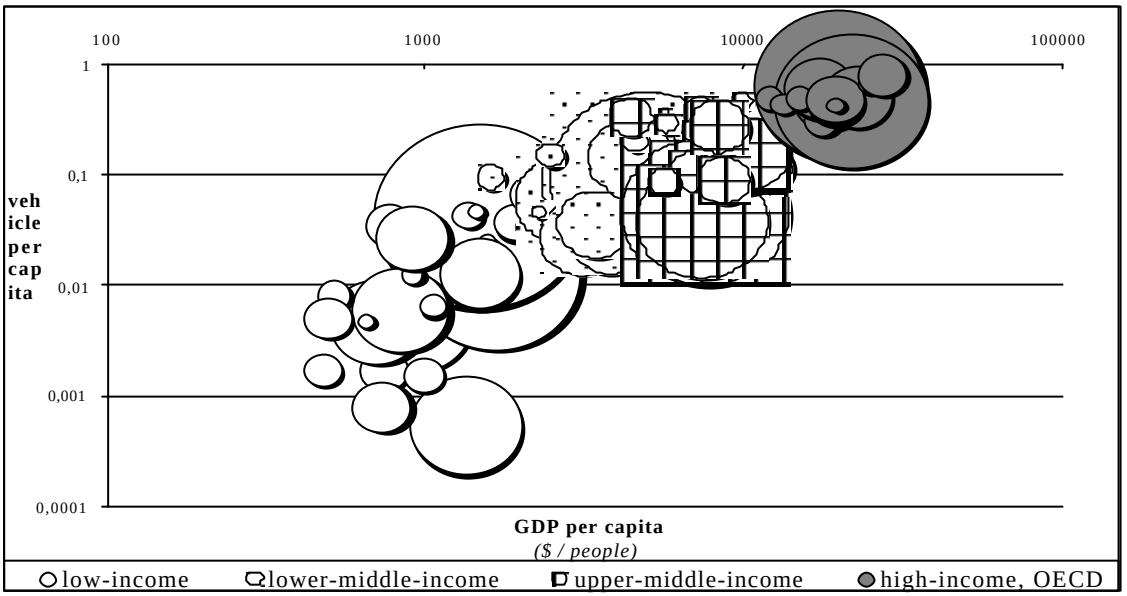
Even if the PIARC focus is on road transport we must in this respect also look at transport in a broader context e.g. the possibilities and limits of using alternative modes. Further, as an introduction, we also address the role of economic development as the prime driving force for transportation demand.

We must distinguish between the broad set of factors explaining the present situation and future development and those, which (to a smaller or larger extent) might be influenced by policy measures (within or outside the transportation sector).

Main draft conclusions are listed in point 5.

Mobility and economic development

A research work carried on statistical relationships between transport data and economic development criteria (from World Bank data sources), shows clearly that there is a meaningful correlation between the development of the transportation networks (indicator in this figure is vehicles per capita) and the economic indicators, with clear evidence of the importance of the road transport as shown below.



Consideration was also given to the cultural and economical aspects of transport development. On the former, most transport studies performed to date start from the assumption that the need for mobility is triggered as an instrumental consequence to satisfy another primary need of man, generally of an economic nature.

The report also considers as an alternative to this assumption, research work which suggests that it is necessary to take into serious consideration the hypothesis that mobility does not only constitute an instrument to help man but, rather corresponds to one of the original needs of human beings. If sound, this could have a profound effect on the development of future transportation policy.

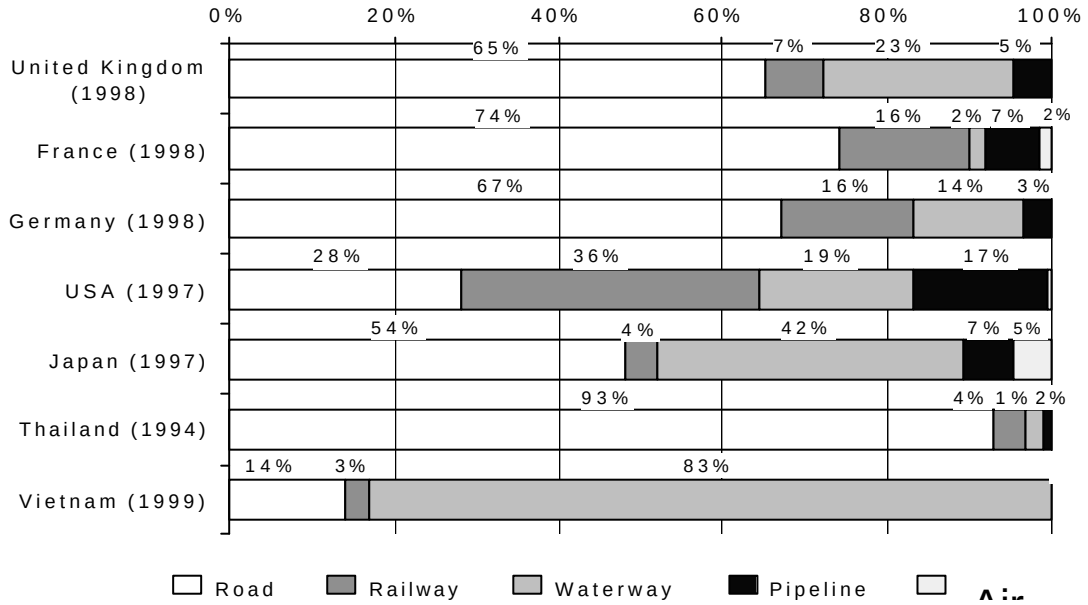
The idea of partly solving the problem of tackling the growing transport demand through a possible decoupling of transport growth from economic growth has e.g. been addressed by the European Union in its recently revised White Paper on Transport Policy. The TC 4 report, however, expresses doubts as to the achievement of this to any considerable degree. Looking further into this question the type of country/level of development would be a crucial factor.

Multimodal approach of the transport system

To what extent can other modes of transport reduce the pressure on the road sector?

The working group's report considers ways to achieve a better integration of the different transport modes, provides appendices containing detailed examples of where such techniques have been successfully applied and makes recommendations on future policy and implementation. Initial works concentrate on the collection of worldwide data on existing modal share and trends of change, which led to consideration of the main factors explaining the commonality and the differences highlighted by the data collection exercise.

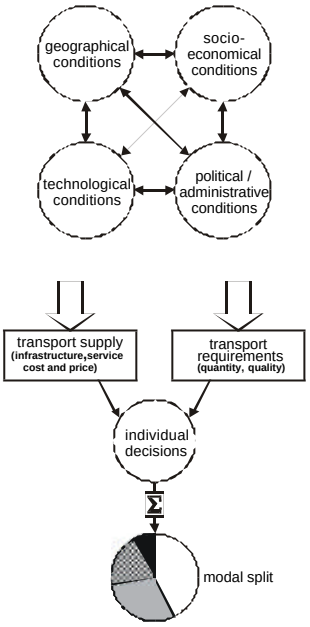
An example from the report showing variances of modal split for Freight Transport between some countries is shown below:



Such detailed and comparable sets of statistics have rarely been published before. Problems, however, do arise in such analysis due to the inconsistency in definitions and data capture methodology.

The 'border line' between interurban and urban transport cannot be easily defined, and there will inevitably be some level of overlap in the work completed by both TC4 and TC 10 Committees. The connection points are keys to resolving many of the problems, whether they are terminals for passengers and goods or main connections between the trunk roads and the urban network.

The report further reviews factors influencing modal split in general, trying to construct a basic framework **for explaining modal split** looking at geographical, socio-economic, political & administrative and transport technology conditions based on the schematic shown below.



Factors influencing modal split

Modal split might be influenced by the combined effect of several measures. The report discusses this in terms of:

- Institutional and Organisational aspects – including information and logistics;
- Financial Incentives/Dis-incentives – including measures to secure fair competition;
- Physical Alteration/Improvements – including interoperability and infrastructure development (including terminals). In developing countries/countries in transition in particular, the lack of adequate infrastructure might add up as the highest present priority;
- Attitudes and values.

It is obviously rather difficult to influence the modal choice in the interurban transport market to a significant degree without using means that would affect international competition and economic growth in a negative way.

Some current policy statements such as the mentioned EU White Paper have presented concrete targets for the modal split up to 2010 – keeping it on a 1998 level. Even if they should succeed, however, this will, according to forecasts, only lead to a rather limited reduction of the still rapid growth in road transport.

Freight and passenger transports are to a large extent using the same infrastructure. When analysing measures and effects they can thus not be treated separately. Road congestion is mainly due to high volumes of passenger cars, while heavy goods vehicles are the main cause of road deterioration.

An appendix to the report contains 20 detailed examples from around the world of the experiences gained from of a range of initiatives and interventions seeking to address typical problems. It is hoped that these will enable some often-hard earned knowledge to be available to those decision-makers and practitioners wrestling with similar issues.

The final chapter of the report brings together the overall perspective of the issues and challenges facing all those dealing with multi-modal interurban transport. A second appendix contains extracts from current policies being applied or promoted in this field in the United States of America, the European Union and Japan.

We hope this report, with its statistics and examples on tendencies and differences and the structuring and discussion of influencing factors presented, can help serve both decision makers and further discussions and research into explaining the transport situation in a country and policy options for influencing change.

Improving the road transport system

Optimising the existing interurban road network

Optimise was determined as that which **improves mobility, increases safety and reduces congestion.**

Information was sought from members of C4 on the traffic conditions and optimisation techniques employed in their countries. A questionnaire was distributed and to ensure **focus** on the problem, it was deliberately restricted to the following areas:

1. Current **traffic conditions and traffic**;
2. Information on **national policies** and plans for improvement of traffic;
3. Use of different **strategies and methods** for improving the traffic conditions and safety.

The returned questionnaires showed that there are many different experiences from the countries involved, partly due to their cultural and socio-economic differences. Opinions differ, but the common feature is the recognition that the measures must take full account of the **transport needs** as well as the **safety** of the population.

Although the population in different parts of the world is growing at very different rates, a significant **increase in traffic growth** is registered practically everywhere and the forecast is for it to continue rising. Added to this, liberalisation of economies has contributed to accelerate growth of the socio-economic standards of the inhabitants.

As the supply of infrastructure is not able to keep pace with the growing demand, the widening gap between these two factors manifests itself mainly in the form of **increased congestion** on the roads and **rising accident rates**. Accidents are of prime concern since they result in loss of life, injuries, and damage to property and in consequent loss to the community.

National policies and plans for the interurban road networks of C4 member countries are varied, but some **common themes** emerge. **Maintenance** and **safety** are generally seen as the highest priorities.

Due to financial and environmental constraints the emphasis for improving and optimising the road network is changing from **structural measures** to making better use of the existing infrastructure by measures for **managing** the existing interurban road network. There is though some evidence of a different emphasis between developed and developing countries, with the former focused more on **making better use** of existing infrastructure and the later likely to be focused on **building new infrastructure** and **funding mechanisms**. Unfortunately the information from developing countries is very limited.

Evaluation of answers to the questionnaire shows that the most commonly employed optimisation measures in most C4 member countries are**: asset maintenance management, widening** the existing roads and **construction of new roads** (see 4.4.2.). **Road pricing** is also a measure that is relatively widespread among the member countries involved.

The measures which can be adopted for optimising the existing interurban network, can be considered as follows:

Informative measures
These include informing road users by providing details of expected or actual road conditions. In some countries calendars of expected traffic conditions and advanced notice of lane and road closures are published. Real time traffic condition data using internet, TV, radio, in-car systems and variable message signs is becoming increasingly available, particularly in more developed countries with serious congestion problems. All these measures can help influence demand.

Structural measures
New or widened roads may often be the most effective way of immediately satisfying demand. A significant advantage of building new capacity is that it often provides the best opportunities to incorporate the latest state of the art technology, design standards and safety features. Environmental or financial constraints, or public opinion may make structural measures very difficult to deliver (see 4.4.2).

A useful indicator providing a basis for making a decision on the implementation of pertinent measures is **the flow rate of vehicles per hour**. The following limits of flow rates indicate measures to be taken on the road sections affected:

- **1200 vehicles/h to 1800 vehicles/h/lane** indicates that widening of the existing road by constructing new lanes may be needed;
- **1600 vehicles/h/lane** indicates that the use of Telematic systems like dynamic traffic control, ramp metering, flexible road geometry and/or automatic incident detection, may be beneficial.

Operational measures
Used mainly to extend capacity and or safety on already busy roads. These measures include techniques such as dynamic speed control, flexible road geometry, reversible and high occupancy vehicle lanes and ramp metering. In the right circumstances these measures can deliver high safety and journey reliability benefits and sometimes with modest financial or environmental penalty, but public acceptability can be an issue due to the impact on mobility for some types of user.

Managing measures

Includes maintenance and incident management. Maintenance reduces the rate of pavement deterioration and lowers the cost of operating vehicles on the road by improving the running surface. It keeps the road continuously open and enhances the mobility of the road users. The questionnaire responses indicated that the proportion of budget spent annually on maintenance is commonly around 1% to 1. 5% of the asset value, and it is necessary to spend around 1.5% of the asset value to achieve an optimum steady state maintenance regime. Incident management is the co-ordinated and planned approach for fast response to accidents. The key to effective incident management is a well-designed and managed system for surveillance and response.

Regulative measures

Options include education and testing of road users, regulation and enforcement of vehicle size, type and weight, speed enforcement, intelligent speed adaptation and restricting access and overtaking by certain vehicles. Although sometimes unpopular with users, regulation is a vital component of optimising the network. Basic regulation such as control of heavy vehicle weights and axle loads is essential to avoid premature failure of pavements and structures, while safer driver behaviour can be significantly influenced by both education and appropriate enforcement. More radical regulative measures such as restricting access and overtaking can reduce congestion and driver frustration, but at the expense of mobility for some. To be effective regulation must be linked with the ability to enforce.

Tariff measures

At present the primary objective of road pricing in many countries is to create revenues. The objective of road pricing can however also be an optimising measure providing incentives for reducing travel demand on congested road sections, the so-called congestion pricing. The increasing use of electronic fee collection systems will facilitate such an application.

Improving public acceptance of new road infrastructure projects

Implementing the need for new road infrastructure projects, not least in developing countries and countries in transition, are, in addition to the question of finance, more and more dependent on public and political acceptance.

The WG3 report is based upon a questionnaire to which most of the member countries of committee 4 responded.

Although it is well known that the difficulties about social acceptance are evaluated differently according to whether one is dealing with developed countries – where transportation networks have reached some degree of maturity – or developing/transitional countries – whose needs for new infrastructure are easier to demonstrate – it is nonetheless clear that concern about the social acceptance of road projects is shared by all.

The group examined the different levels of social acceptance and the nature and extent of what is commonly called "the public", taken as representative of the different concerned parties and those who benefit from the project.

The group decided that it was appropriate, in order to clarify the links between the different ways in which the project is seen and the type of public involved, drawing a distinction between:

1. The political view of the project, primarily a matter for elected representatives,
2. How the utility of the project is seen, a matter for those who benefit in the broad sense,
3. How the quality of the project is seen.

WG3 then identified the key steps in informing and consulting the public:

1. **Inclusion of a project in master plans.**
   In this stage of ranking transportation networks, identifying the levels of service to be applied to any particular transportation route, and the resulting action priorities, are a major issue in the political debate and in discussions both national and regional in order to make clear the principal orientations and strategies of governments. This is already an indication of commitment to a process of social acceptance.

2. **Utility studies.**
   In the earliest stages of the decision-making process, depending on the size of the project (types of project and financial limits may be specified), public discussions may cover the utility of the project, its main features, the way in which it is inserted into the environment, and its contribution to land-use planning. It is at this stage that the budgetary, socio-economic and environmental constraints are highlighted. Clearly therefore, these discussions primarily involve elected representatives and the different government departments concerned.

3. **Planning studies.**
   These are essential to the choice of one of several possible (route) options and demonstrating its feasibility and public utility.
   The various stages of these planning studies, together with the relevant confirmation and agreement procedures, play a major role in terms of social acceptance.

   - At the very beginning of the project planning stage, it is appropriate to seek a satisfactory agreement about problems, needs and expected functions before embarking on the search for solutions.
   - At the end of the project planning stage, a wider public will usually be involved in the process of agreeing on a particular solution (for linear infrastructure this usually means a more or less wide corridor). In certain countries the government will submit this variant to a public enquiry before any declaration of the public utility of the project or a decision to act.

It is usually at this stage of the process, before detailed design work begins, that most of the countries questioned include some kind of administrative approval.

4. **Design studies.**
   These are frequently arranged in 2 stages:

   - **The preliminary project**, the aim of which is to determine the route and characteristics of the project; at this stage it is frequently necessary and useful to involve the public with regard to modifications that may lead to better integration of the project without questioning its overall economy.

- **The detailed project**, the essential aim being to determine the definitive layout and produce the working scheme in detail; at this stage, the scope for modification available to the project management is even narrower. On the other hand, the selection of materials or equipment may be affected by criteria that are significant in the acceptance of road projects, for example: safety, legibility and reducing maintenance costs.

The final stage of the WG3 work was to set out the main difficulties that road administrations will have to face in terms of the social acceptance of projects together with possible solutions, notably as regards organisation.

As concerns the **political view of the project**, the main difficulty is to meet the expectations of the elected representatives in taking into account:

- all their development projects, schemes and programmes, as part of a coherent vision of the area concerned,
- their approaches to local activities and their corresponding hopes in terms of economics, safety, health and education.

In fact the issue here is **to justify the needs of sustainable mobility**. The necessity to meet these needs through new road projects is fairly obvious in the developing countries and in those whose economies are in transition. However the same does not apply in countries whose road transportation networks are already fairly extensive.

As regards recognition of the **public interest** or utility of the project, this concerns a " public " that extends beyond the political decision-makers alone. There are two kinds of problem:

- First of all, the procedures are often extremely long, and frequently opaque; occasionally the thread of the decisions is lost and the public often feels that it is involved only when it is far too late; hence **the need to intensify dialogue at the beginning of the process and to introduce discussions about suitability as early as possible.**

- Secondly, the social and cultural aspects of the public's reactions are frequently an incomprehensible factor. Insofar as a general interest is concerned it is also not always easy to measure – particularly as the real public frequently belongs to the silent majority – as opposed by special interests to which members of the public can, through various representations, give a dynamic response, sometimes backed by separate expert appraisals. Faced with such a public, which can find the resources to discuss technical or legal matters on an equal basis with the authorities, it must not be forgotten that in certain countries there are also multicultural problems associated with difficulties of language, that do not favour the understanding of government projects by all, especially when these are presented in far too technical language; hence the need for the technical project to be accompanied by a comprehensive communication scheme.

With regard to **how the quality of the project is seen**, this is concerned more directly with the road authorities, particularly as to the resources they employ, in terms of organisation and skills, to ensure at the outset - and subsequently to monitor - that the project satisfies quality criteria concerning:

- the process of design and construction: quality of the " joint approach " and of the public debate, technical, administrative, regulatory and financial control, meeting deadlines, target costs and estimates,

- the development project as such: the functional reliability and justification of the adopted approach, suitability for service and abiding by normal rules of practice, safety, legality, facility and costs of maintenance and operation, taking into account the concerns of the environment and sustainable development, compensatory measures and the economy of the project.

The approaches be applied to ensure that the quality of the project is recognised include in particular the need **to clarify in the eyes of the public the places where decisions are taken** and **to enable the public to identify those who really take the decisions,** primarily the elected representatives and the project managers. The latter must play a full part. This is why **the delegation of central government powers has a favourable impact as regards taking into account the needs of users** and hence improved social acceptance of projects.

Such delegations of authority are necessary if the functions of those who manage road projects are to be properly exercised. **Where these are local, they have a fundamental role in establishing the quality of the project,** in other words, in adapting responses to the true needs of users. However, in order to do this, they must exercise their functions of " owner " in full, invest in early planning and research, introduce consultation procedures, and of course translate the needs of users into clear instructions to the different project managers, designers and contractors.

As far as skills are concerned, quite apart from those intended to supplement the abilities of the project management, the working group's report emphasises the **need to have coordinated and multidisciplinary project teams** that remain involved in the project from start to finish. It is equally important that an operations manager, representing the project management, drives the project forward and is capable of talking about it while continuing to supervise technical matters, timing and costs. This communication process can be facilitated by employing **modern techniques of communication**, for example, virtual modelling and simulation systems that can show what the project will ultimately look like, since purely technical dossiers are not the best way of convincing the public.

DRAFT CONCLUSIONS

Economy and transport

- Mobility is a basic need for human beings and an incontrovertible factor in our economic life insofar as it takes account of a certain number of principles of solidarity and environmental protection. We, therefore, do not see it to be very realistic to expect a future disconnection to any considerable degree between this need for mobility, the provision of transportation networks and demands of economic development.

Intermodality

- Generally there is a limited potential to influence the modal choice in the interurban transport market to a significant degree without using means that would affect international competition and economic growth in a negative way. Taking a long perspective, the regional planning policy could be an important factor.

- Any significant modal transfer supposes highly deliberate policies and often-high investments in favour of the alternative mode, to improve both infrastructures (capacity) and the quality of service while obtaining significant gains in productivity. The organisational and logistic solutions are crucial for success.

- Freight and passenger transports are to a large extent using the same infrastructure. In choosing measures, they can thus not be treated separately. A high percentage of road freight transport covers short distances where there exists no realistic alternative for change of mode. Road congestion is mainly due to high volumes of passenger cars (and incidents), while heavy goods vehicles are the main cause of road deterioration.

- It is not possible to draw up a set of ready-made rules to deal with every circumstance, the important being to take a reflective approach by focusing on different parameters, such as: accessibility, duration, cost, pricing, information to users and decision-makers, quality of service, safety, etc.

- It is obvious that investments in road infrastructure will still be necessary to cope with the global growth in transport demand. The appropriate scale of this further investment and the right balance between roads and other modes will be the problem facing decision-makers. The optimum decision will vary from country to country depending on existing conditions and the scale and type of planned economic growth.

Optimising existing interurban road network

- The field, which deals with the mobility, safety and congestion on the interurban road network, is very complex and the opinions transmitted by the members of the working group indicate that there exists no single measure for achieving the given objectives of improved mobility, increased safety and reduced congestion.

- The interurban road network in the developed countries around the world is substantially completed. As the existing networks age, it can hardly keep pace with the ongoing traffic increase. Due to financial and environmental constraints the emphasis for improving and optimising the road network is changing from structural measures to making better use of the existing infrastructure by measures for managing the existing interurban road network - emphasizing safety benefits and improvement of incident response times of emergency services. Incident management has become the key word, rather than operations improvement or congestion reduction.

- The magnitude of the capacity problems in road transportation is to a great extent related to the explosive growth in the use of the private car. To reduce excessive growth in sensitive areas, there is an increasing use of regulations and pricing measures especially in big cities, with possible future extensions to interurban situations by e. g. regulation of road space/lanes (buses/freight transport), and road pricing.

- At present quite different kinds of intervention are required in various countries. These interventions depend mainly on the state of development of their road network as well as their overall economic situation and traffic development. It is therefore suggested that within the framework of the future program of the Committee, recommendations on optimising measures be divided into two groups, e.g. those for economically strong countries with a highly developed motorway network and those for countries with rather limited financial resources for the development of their road infrastructure.

- Taking measures for optimising the interurban roads network requires not only considerable investment in terms of costs but also in terms of time, as the build-up of a suitable organisation and proper training of its personnel cannot be considered an easy task.

- The degree of acceptance by the public of any particular measure shows quite a variation. It goes without saying that measures like road pricing or speed enforcement are most unpopular with the road users.

Achieving social acceptance of transportation projects

- One desirable development is to formalise the public debate throughout the life of a project, either through legislation and regulations, or via good practices based upon fundamental criteria of quality management.

- The public in the different countries often claims that they are only consulted when it is too late, when the project has already progressed so far that it is difficult to reverse earlier decisions. One answer to this concern is to intensify dialogue at the beginning of the procedure or to introduce discussion about the principle and major functions of the link to be built, prior to the design stage.

- The process of determining the levels of service to be applied to transportation networks and the resulting priorities for action are an important issue in the political debate and in discussions at national and regional level in order to make clear the major orientations and strategies of governments.

- To create the conditions of social acceptance, project managers must play their full part at national and local level: identifying and highlighting all the quality criteria of the project at the outset – which in fact will facilitate its evaluation at a later stage – oversee the introduction of quality as concerns the processes of drawing up the project and the results to be expected, and finally be able to draw up clear and reliable instructions for managers and then for contractors, within a comprehensible technical and legal framework.

- The stage of government approval may be the opportunity for the project managers to undertake to reduce the impact of the project on the environment, such commitments being liable – so long as they are fulfilled – to facilitate the social acceptance of projects.

- It is important that members of the public should be able to find out where decisions are taken and to identify the decision-makers, that they should be aware of the milestones in the different stages of the projects when important decisions are to be taken, and the level at which they can intervene with regard to these decisions.

- The expectations of users are not limited to mobility. It is in the interest of road authorities to acquire resources for continuously evaluating such needs by introducing what may be called marketing departments, these departments being given the responsibility, through continuous dialogue with users, for defining their expectations, predicting developments, monitoring the response to users, and measuring their degree of satisfaction.

- Use of the many visualization methods can help the team to communicate the project as it develops to the public and stakeholders.

PIARC COMMITTEE C4 **APPENDIX 1**

NAME	COUNTRY	Working Group
Mr. Patrick GANDIL(Co-ordinator ST2)	FRANCE	
Members C4: 34		
Mr. Jean-Michel GAMBARD (Chairman)	FRANCE	1
Mr. Amund BOLSTAD (English speaking Secretary)	NORVEGE/NORWAY	1
Mr. Erwin VAN DESSEL (French speaking Secretary)	BELGIQUE/BELGIUM	3
Mr. Manfred UKEN	AFRIQUE DU SUD/SOUTH AFRICA	1/2
Mr. Manfred BOLTZE	ALLEMAGNE/GERMANY	1
Mr. Rob RICHARDS (replacing Mr. Gary LIDDLE)	AUSTRALIE/AUSTRALIA	
Mr. Christoph PICHLER	AUTRICHE/AUSTRIA	2
Mr. Claude MONETTE	BELGIQUE/BELGIUM	3
Mr. Jean-Marie PEETERS	BELGIQUE/BELGIUM	1
Mr. Rob HARVEY	CANADA	3
Mr. Luis E. SERRANO RODRIGUEZ	CUBA	2
Mr. Lars JUHL POULSEN	DANEMARK/DENMARK	2
Mr. Justo BORRAJO	ESPAGNE/SPAIN	1
Mr. Seppo SILLAN	ETATS-UNIS/UNITED STATES	3 (Co chair)
Mr. James F. BYRNES	ETATS-UNIS/UNITED STATES	2
Mr. Pauli VELHONOJA	FINLANDE/FINLAND	3
Mr. Gerard VUILLEMIN	FRANCE	**3 Chair**
Mr. Péter LANYI	HONGRIE/HUNGARY	2
Mr. A.B. PAWAR	INDE/INDIA	2
Mr. Mahmoud SAFFARZADEH	IRAN	
Mr. Pasquale COLONNA	ITALIE/ITALY	1
Mr. Hitoshi IEDA	JAPON/JAPAN	1
Mr. Hans J.J.M. TINSELBOER	PAYS-BAS/THE NETHERLANDS	2
Mr. Marek ROLLA	POLOGNE/POLAND	2
Mr. Francisco COSTA PEREIRA (replacing Mr.José A. Valle)	PORTUGAL	
Mr. Liviu DIMBOIU	ROUMANIE/ROMANIA	3
Mr. Robin SHAW	ROYAUME-UNITED KINGDOM	**1 Chair**
Mr. David WRIGHT	ROYAUME-UNITED KINGDOM	2 (Co chair)
Mr. Ales HOCHEVAR	SLOVÉNIE/SLOVENIA	1
Mr. Hjalmar STRØMBERG (replacing Mrs. Lena Ericsson)	SUEDE/SWEDEN	1
Mr. Michel EGGER	SUISSE/SWITZERLAND	**2 Chair**
Mr. Houcine LAHZAMI	TUNISIE/TUNISIA	1
Mr. G. NHEMACHENA	ZIMBABWE	
Mr. Hari BARAL	FRANCE (AIU)	3
Corresponding members: 12		
Mr. Nico SWART	AFRIQUE DU SUD/SOUTH AFRICA	
Mr. Khoudja Nououi HAMIDI	ALGERIE/ALGERIA	
Mr. Paul ARSENAULT	CANADA-QUEBEC	
Mr. Mehran GHORBANI	IRAN	
Mr. Koji KURODA	JAPON/JAPAN	
Mr. ISSOUF	MADAGASCAR	
Mr. Kadir LAMRINI	MAROC/MOROCCO	
Mr. Alberto MENDOZA	MEXIQUE/MEXICO	
Mr. José da Franca TELLES de MENEZES	PORTUGAL	
Mr. Vladimir VOREL	REP. TCHEQUE/CZECH REP.	
Mr. Milan SKYVA	SLOVAQUE REP/SLOVAK REP.	
Mr. Sunant KLIENGPRADIT	THAILANDE/THAILAND	