

# **URBAN AREAS AND INTEGRATED INTERURBAN TRANSPORT**

Friday 24th October 2003 (1.30 – 5.00 p.m.)

## **Session Agenda & Introductory Report**

# SESSION AGENDA

## **SESSION 1: Introduction**

Prof. George HAZEL (C10 Committee Chairperson/UK)

### **1. Presentation**

#### **a) Sharing the Main Street**

Ms. Hillie TALENS  
(C10 member, Leader of the Sub-Group 1/THE NETHERLANDS)

#### **b) Transport Interchanges and Urban Development**

Dr. Csaba KOREN (C10 member, Leader of the Sub-Group 3/HUNGARY)

### **2. Question and Discussion**

## **SESSION 2: Introduction**

Prof. George HAZEL (C10 Committee Chairperson/UK)

### **1. Presentation**

#### **a) Land Use and Transport Policies in Urban Areas**

M. Peter JORRITSMA  
(C10 member, Leader of the Sub-Group 2/THE NETHERLANDS)

#### **b) Measurement and Monitoring of Quality**

Ms. Ysela LLORT (C10 member, Leader of the Sub-Group 4/USA)

### **2. Question and Discussion**

## **Concluding Remarks**

Prof. George HAZEL (C10 Committee Chairperson/UK)

# CONTENTS

<b>INTRODUCTION</b> .....	<b>4</b>
SHARING THE MAIN STREET.....	6
SUB-GROUP 1.....	6
<i>Members of the Sub-Group</i> .....	6
<i>Introduction</i> .....	6
<i>Part I – a comparison of guidelines from around the world</i> .....	7
<i>Part II – a compilation of “best practice” examples from around the world</i> .....	8
<i>Part III – compilation of a bibliography</i> .....	8
LAND USE AND TRANSPORT POLICIES IN URBAN AREAS.....	9
SUB-GROUP 2.....	9
<i>Members of Sub-Group 2</i> .....	9
<i>Summary</i> .....	9
TRANSPORT INTERCHANGES AND URBAN DEVELOPMENT.....	11
SUB-GROUP 3.....	11
<i>Members of the Sub-Group</i> .....	11
<i>Goals</i> .....	11
<i>Themes studied</i> .....	11
<i>Methods</i> .....	11
<i>Findings</i> .....	12
<i>Policy Objectives and Driving Forces</i> .....	12
<i>Typical dilemmas between transport function and activity centre function</i> .....	13
<i>Effective remedies for the dilemmas</i> .....	13
EVALUATION OF TRANSPORT PERFORMANCE MEASURES FOR CITIES.....	14
SUB-GROUP 4.....	14
<i>Members of Sub-Group</i> .....	14
<i>Background</i> .....	14
<i>Survey Results</i> .....	15
<i>Settings</i> .....	15
<i>Policy Framework</i> .....	15
<i>Data and Technical Support for Decision Making</i> .....	16
<i>Conclusions and Recommendations of the Work of Sub-Group 4</i> .....	16
<b>CONCLUDING REMARKS</b> .....	<b>18</b>

# INTRODUCTION

One of the most critical issues to be addressed in the field of transportation, liveability and sustainable development is the growth of population, and hence traffic, in the urban areas of the world. World population will grow by 50% from 6.1 billion in mid-2001 to 9.3 billion by 2050. The 49 least-developed countries will nearly triple in size, from 668 million to 1.86 billion people. Most of this growth will happen in urban areas. In the year 2002 76%, 40% and 26% of people lived in urban areas in more developed, less developed and least developed countries of the world respectively, the United Nations forecast that in 2030 these percentages will rise to 82.6%, 54.4% and 43.7%. By 2025, the total urban population is projected to double to more than 5,000 million people; 90% of this increase is expected to occur in developing countries.

This growth, and the growth of the world's economies, are causing consequent growth in private car ownership; this is a world-wide trend. The number of motor vehicles world-wide could grow from a recorded 580 million in 1990 to 816 million in 2010. This excludes motorized 2 and 3 wheeled vehicles. This trend affects both developed countries, developing countries and countries in transition. The growth results in increasing pressure on the infrastructure of our urban areas, causing congestion and pollution and reducing quality of life.

Over the past four years the C10 Committee of PIARC has been addressing four key areas with respect to future transportation in urban areas. These are:

1. Sharing the Main Street
2. Land Use and Transport Policies in Urban Areas
3. Transport Interchanges and Urban Development
4. The Evaluation of Transport Performance Measures for Cities.

The first of these areas addresses how to resolve the competing claims for space in the Main Streets of urban areas. The main street is a key component in the life expectancy of any major urban area. We firstly defined the main street in the context of our research; a definition that applies to situations in developed and developing countries as well as in countries in transition. The research was then constituted into three areas:

- Part 1 – a comparison of guidelines from around the world
- Part 2 – a compilation of “best practice” examples from around the world
- Part 3 – a compilation of a bibliography.

Conclusions were drawn from the examples collected.

The second area of research examined the relationship between land use and transport policies in urban areas. This continues, and builds on, a related theme examined by C10 in the previous four years. In order to address the growing issue of world urbanisation and congestion the relationship between land use and transportation must be addressed. The objective of the research is to obtain greater insight into the relationship between land use policies and urban transport policies and to learn through examples of “best practice” how these can be integrated. An analysis was carried out in 18 cities in 15 countries to explore the different policies and to measure, in a qualitative way, the performance of the policy.

A comparison was made between developed countries, developing countries and countries in transition to identify common issues and differences. This comparison was made on common goals and objectives, land use policy, transport policy, integration of land use and transport policies and institutional issues. In the second part of the research a detailed analysis is carried out on three cities; Durban (South Africa), Montreal (Canada) and Bratislava (Slovakia). In addition, a chapter is included on the new law in France on “Developing Interdependence and Reviewing Urban Concepts”. This is a good example of new legislation in the area of land use and transportation. Conclusions were then set out on the research.

The third area of research related to transport interchanges and urban development. This relates well to the first two topics and is key to the efficient working of passenger and freight networks in urban areas. The main objectives of the research were:

- to identify best practice in integrated passenger interchanges in urban development and freight interchanges in city logistics
- to examine the land use impact and finances of passenger interchanges and city terminals.

Themes studied within these objectives included integrating passenger interchanges with urban development in terms of institution, finance and organization issues and freight interchanges with city logistic strategy to reduce traffic impacts on the CBD and/or inner city areas. Again best practice was sought from around the world.

The conclusions of the research were framed around three key areas:

1. policy objectives and driving forces;
2. typical dilemmas between transport function and activity centre function;
3. effective remedies for the dilemmas.

The fourth area of research relates to the evaluation of transport performance measures for urban areas and how they contribute to a city's goals and objectives. This area is one which is not well researched and the work carried out is very much at the cutting edge. It is vital to the successful operation of our transportation systems that we are able to successfully and effectively monitor the performance and success of our initiatives in relation to the city's overall goals. The research reviewed available literature and the experiences of professionals before sending out an extensive survey to 18 cities in Europe, Asia, Australia/Oceania and North America. The results of the survey were then presented within the settings of the cities, the policy framework and the data and technical support for decision making. The information received was valuable and extensive and conclusions and recommendations were drawn from the results of the research.

The following sections provide a more detailed summary of the four areas of work followed by some concluding remarks.

# Sharing the Main Street

## Sub-Group 1

### Members of the Sub-Group

Ms Hillie TALENS – Netherlands - Sub-Group Leader  
Mr Jürgen GERLACH - Germany  
Ms Anne Sigrud HAMRAN - Norway  
Mr Thomas KIELIGER - Switzerland  
Mr Dominique THON - France  
Mr Naofumi TAKEUCHI - Japan  
Mr Isao TAKEMASA - Japan  
Mr Hiroshi WATANABE - Japan  
Mr Toshiaki FUKUMOTO - Japan  
Mr Hunki LEE - Japan  
Mr Bystrík BEZÁK - Slovakia (also joined another Sub-Group)  
Mr H.K. SRIVASTAVA - India

### Introduction

Based on Strategic theme 2: Road transport, Liveability and Sustainable Development, and on topics 2, 3, 5, and 6, Sub-Group 1 studied the design of Main Streets.

It is hard to give a one-sentence definition of a Main Street. In our study a Main Street is best described by the following characteristics:

- A Main Street is a (mostly old) street in an urban area leading to a city centre. Along such a street many activities take place; people live in these streets, or they work there. There are shops that need to get goods to sell and customers to buy things, as well as restaurants and resting-places.
- Sometimes you can find schools or religious buildings along the street.
- There is through traffic on its way to the city centre.
- All these functions are hard to combine in an often narrow space. Everybody has to share the Main Street. That is why road designers, economists and planners struggle with a Main Street.

We want to make life a bit easier for them to offer them a range of possible solutions from all over the world; both in theory and in practice.

Firstly, a Main Street is part of the urban area and has:

- buildings for different purposes (on both sides) that are connected directly to the street; for example shops, offices, houses, restaurants and cafes;
- both through traffic and local traffic;
- at least one kind of public transport on street level;
- (lots of) pedestrians, cyclists and other slow moving traffic such as animal drawn carriages;
- more than 10 and less than 50 meters between the opposite building fronts;
- no more than approximately 50,000 pcu/day (passenger car units or vehicles per 24 hours).

Main Streets can be found all over the world; in large cities and small towns, in developing countries, countries in transition and developed countries.

In order to avoid confusion between an urban boulevard and a main street we made the following distinction:

**Difference between an Urban Boulevard and a Main Street**

Urban Boulevard	Main Street
app. 100 m wide	less than 50 m wide
app. 160.000 pcu/d	less than 50.000 pcu/d
'man made'	historically grown
mostly a ring road	always a radial

Part I – a comparison of guidelines from around the world

For the comparison we used standards, guidelines and handbooks from all over the world. Documents from the following countries have been used:

- |                           |                              |
|---------------------------|------------------------------|
| Norway                    | Hungary                      |
| The Netherlands           | Australia                    |
| South Africa              | Japan                        |
| Belgium                   | The United States of America |
| Switzerland               | Germany                      |
| Czech Republic            | Denmark                      |
| France                    | Slovakia                     |
| United Kingdom (Scotland) | Canada                       |
| Finland                   |                              |

It is interesting to see that these case studies show many ways of formulating guidelines and dealing with an urban Main Street. This can be related to many aspects, for example the culture of the different countries, legal system and practice for road planning and design.


To give a reliable picture of how the urban Main Street is dealt with in different countries, the analysis is related to the practice of how urban streets normally are dealt with in the different countries. In this project the documents are only analysed according to what is actually written, and should not be taken as an expression of how the urban Main Street is dealt with in real life.

On the basis of this analysis, and without the framework of the culture in the different countries, it is hard to extract the "good practice" of document approach, design philosophy and working methods. Seen together with other works, this might be a basis to discuss the issue. The results of the study might also work as a basis for discussion of cultural differences in emphasis of different transport modes (private car, bicycle, public transport) and design of urban main streets.

## Part II – a compilation of “best practice” examples from around the world

For this part we collected the following examples:

Traffic volume → Width ↓	0-10,000 pcu/day	10,000-30,000	30,000-50,000
10 – 20 m	Hikone, Japan Oslo I, Norway Oslo II, Norway	Arnhem, Netherlands Montélimar, France	
20 – 30 m	<b>Rhenen, Netherlands</b>	Hennef, Germany Bern, Switzerland	
30 – 40 m		Bratislava, Slovakia Schwerin, Germany	Wuppertal, Germany Durban, South Africa
40 – 50 m		<b>Bogotá, Colombia</b> Habana, Cuba	Okayama, Japan

 = not in this project

The examples vary a lot. We have one case of a street where many things are technically wrong, but every change will make things worse and the public is happy with it the way it is. And we have a case where all the surrounding buildings are replaced and rebuilt so that the street could have a wider profile.

With regard to the examples some important conclusions can be drawn:

1. in a Main Street you can combine some carefully selected functions;
2. these functions should be in balance; no function should be dominant;
3. there is a world-wide trend to create more space for cyclists and pedestrians;
4. there is another trend that the same space is used for different functions on different times (time-sharing);
5. when you allow motorized traffic in a Main Street (through traffic or local traffic) you must allow parking in the street;
6. public involvement is essential for the acceptance of solutions;
7. to avoid uniformity it is important to save or create unique elements that characterize the local community or refer to historical issues.

## Part III – compilation of a bibliography

It is hard to make a complete list of all documents and publications that have to do with the subject. We succeeded in making a list of almost 60 titles. The books are published all over the world. For people who want to know more about urban traffic in general and Main Streets especially this list will be very useful.

We tried to make a list of interesting websites but had to stop for two reasons:

1. lack of time of subgroup members; it is hard to find new websites apart from the standard ones of PIARC, other international organizations and some national governments.
2. lack of continuity on certain websites; some sites are there for only a short period, others are placed on the Internet and never renewed.



## **Land Use and Transport Policies in Urban Areas**

### **Sub-Group 2**

#### Members of Sub-Group 2

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Mr Juan Luis TORRES - Cuba  
Ms Anne BERNARD- GELY - France  
Mr Giovanni CORONA – Italy  
Mr Anis BALAFREJ - Morocco  
Mr Mitsuyuki ASANO - Japan  
Mr Emil SCHNACKENBERG – South Africa  
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Mr Jean BERTRAND – Canada  
Mr Francois MAJOR - Canada

#### Summary

There is a common understanding among professionals (scientists, urban- and transport planners etc.) that there is a close relationship between land use, transport, economic activities and the environment. Therefore integrated approaches are developed to ensure that urban, regional and economic development can take place in an environment that addresses social needs. Despite the enormous amount of approaches, theories, concepts and good intentions the world is still faced with a continuing dispersion of urbanization and activities, congested areas, increased trips by car, increasing commuter distances, a lack of alternative transportation systems, and higher social costs.

This general problem applies to all types of industrialised countries, countries in transition and developing countries. However, in different countries and regions there are varying structural relationships and problems that planners must address. It is not necessary to have a conflict between the economy of a country and improving the environment: but it is necessary to avoid such a conflict. There is no standard solution for solving problems to ensure appropriate development, so it is important to have knowledge of the cause of the problems and the effect of measures in different situations.

The objective of this area of research is to get more insight into the relationship between urban land-use policies and urban transport policies. The research focuses on the development of integrated land use and transport practices in a limited amount of case studies. These studies must be viewed as working examples.

The aim of the work is to investigate 'strategic approaches' which are planned and/or implemented by city authorities. This means that the focus is on packages of land use and transport policies and not on individual transport projects. Nevertheless, the emphasis of policy development can be on a particular transport policy (metro or light rail development) or land use policy (inner city revitalisation, suburbanization) but this policy is always analysed within the context of integrated land-use and transport systems.

In the first place an analysis was made of an extended survey among 18 cities in 15 countries. In the survey, data was collected to explore different policies and to measure, in a qualitative way, the performance of the policy.

A comparison between developing countries, countries in transition and the developed countries is made to recognize different and common issues. The comparison is made on Common Goals and Objectives, Land-use Policy, Transport Policy, Integration of Land-use and Transport Policies and Institutional Issues. This is done to determine in what way land-use and transport policy are diversified among the different countries and to find trends at the macro level.

From the survey results, each city's land-use and/or transport policy is obviously diversified among the different country categories, not to mention the differences in the socio-economic background and the size of the city. In addition to that, it is quite difficult to simplify trends of such varied policies, even at the macro level. For example it is clear that a common goal like 'improvement of the urban environment' is treated quite differently among the distinctive country categories. In developing countries it is about the improvement of traffic safety and comfort while in the countries in transition it is assumed to be a condition to promote economic development. In the developed countries the focus is on sustainability.

In the second part of the report three cases are described in more detail i.e. Durban (South Africa), Montreal (Canada) and Bratislava (Slovakia).

Durban is an example of a city in a developing country. The case describes the problems encountered by the transport sector in relationship with land-use patterns and socio-economic characteristics. To overcome these problems a strategy for sustainable transport is developed on the basis of the introduction of a so called "High Priority Public Transport Network".

In the Montreal case, as an example of a city in a developed country, a vision on transportation, economic development, land-use and the quality of life is presented. The case also addresses vulnerable population groups in society and recommends actions for future projects.

Bratislava, a small city in Slovakia, is the example of a case in a country in transition. The development of the transport sector and socio-economic characteristics of the city are described in relation to past and future land-use and transport policies.

An additional chapter discusses the law on "Developing Interdependence and Renewing Urban Concepts" in France. It is an example of new legislation in the field of transport and land-use. This new law aims for a greater consistency between town planning, housing, travel, leisure and service policies. It gives regulations and pragmatic tools for local authorities to co-ordinate, monitor and estimate the different aspects of their urban policies, in particular links with urban planning and transport. It should gradually enable improved control of town expansion and improve organization in conurbations, and in this way rise to meet the social, cultural and economic challenges with which towns are confronted. On the basis of the outcome of this an attempt will be made to link the results to common trends in land-use and transport issues.

The report ends with conclusions and specific recommendations.

# Transport interchanges and urban development

## Sub-Group 3

### Members of the Sub-Group

Mr Csaba KOREN – Hungary - Sub-Group Leader  
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Mr Olli-Pekka POUTANEN - Finland  
Mr George SCHOENER – USA  
Mr Christian MAUROIT - Belgium  
Mr Gerhard MENCKHOFF - World Bank

### Goals

The previous PIARC C10 report (2000) described passenger interchanges as one of the measures to promote public transport use. Based on the above output and considering the widespread research activity about the transport function of interchanges, the present subgroup put emphasis on the other functions of interchanges. So the main goals of this work were:

- to identify best practices of integrated passenger interchanges in urban development and freight interchanges in city logistics
- to examine the land-use impact and finances of passenger interchanges and city terminals.

### Themes studied

- Integrated passenger interchanges with urban development in terms of institution, finance and organization.
- Freight interchanges with city logistic strategy to reduce traffic impacts on CBD and/or Inner city area

### Methods

The subgroup first conducted some desktop research on interchanges. Valuable results were found in Europe, Japan and in the USA. Some projects of the European Union 4<sup>th</sup> R+D Framework Programme were also used in the case study approach.

As a second approach to get information, the subgroup decided to collect case studies. In order to receive comparable studies, the outlines of two types of case studies on passenger interchanges/freight interchanges were developed. A list of potential case studies was set up.

Based on literature review and our discussion, the subgroup put focus on the following three questions for passenger interchanges;

1. What are the policy objectives and driving forces of integrated passenger interchanges with development?
2. What are typical dilemmas between transport function and activity centre function?
3. Are there any effective remedies for the dilemmas?

In August 2000, a letter was sent to members of C10 asking them to provide one or two cases. As a result, we selected 6 case sites of integrated passenger interchanges (Table 1.).

**Table 1. Passenger Interchanges surveyed**

City, country	Public Transport	Development
Ballston, USA	Arlington Metro	Sector development plan for stations
Osaka CAT, Japan	Shuttle/Intercity Bus	Minato-machi redevelopment project
Saitama, Japan	Japan Railway	Saitama New Urban Center Project
Stuttgart, Germany	German Railway	Stuttgart 21 project
Stratford, UK	Underground/Jubilee line	Town center redevelopment
Budapest, Hungary	Hungarian State Railways	West End City Center development

As for freight interchanges, two types of cases were distinguished. Six cases can be classified as regional interchanges (Table 2.), whereas the other six are dealing with city logistic systems (Table 3.).

**Table 2. Regional Terminals / Interchanges surveyed**

City, country	Status
Kobe FDC, Japan	Existing / developing
Nishijin FDC, Japan	Existing / developing
Duisburg, Germany	Existing
Helsinki, Finland	Planned / construction starting
Budapest, Hungary	Planned / construction starting
Newark, New Jersey, USA	Planned

**Table 3. City Terminals / City Logistics sites surveyed**

City, country	Status
Duisburg, Germany	Existing
Bremen, Germany	Existing
Kassel, Germany	Existing
Nurnberg, Germany	Existing
Wien, Austria	Planned
Wiener Neustadt, Austria	Planned

## Findings

Based on the case studies, the subgroup formulated its findings according to the three key questions about policy objectives and driving forces, typical dilemmas between transport function and activity centre function, and about effective remedies for the dilemmas.

## Policy Objectives and Driving Forces

Passenger interchanges are very important for seamless and attractive transport services. Driving forces of integrated passenger interchange projects are basically summarized under three headings; 1) policy objectives by government, 2) development of rail-technology, and 3) institutional changes (for example privatisation of railway companies).

Policy objectives to promote sustainable development by the government is the general impetus driving a high priority for public transport. Policy objectives to regenerate local economies is another driving force.

The development of rail-technology makes it possible to utilise some parts of previously occupied, operational areas.

The institutional changes of railway companies may be a major driving force for integrated passenger interchanges. Most typically, the privatisation of railway companies makes them more sensitive to business opportunities in railway station areas.

## Typical dilemmas between transport function and activity centre function

Typical dilemmas between transport function and activity centre function have been summarized under three headings, namely 1) physical and functional dilemma, 2) financial dilemma, and 3) temporal dilemma.

The complexity of integrated interchanges with activity centre function causes physical and functional dilemma. The integration means involvement of many organizations and interests, many functions and physical competitions.

The high costs of the integrated interchanges and financial difficulties of railway companies and/or governments require the activity centre function to be successful enough to cover the costs.

Uncertainty of the related decisions makes the temporal schedule of integrated interchange projects unclear. It may cause significant delay of the project. Any integrated interchange always carries significant risk, because it must include many organizations and require co-ordination of transport interchanges and surrounding developments.

## Effective remedies for the dilemmas

As expected, there is a wide variety of remedies for the dilemmas found both in previous studies and in our case studies. We can summarize them under two headings; namely

- 1) 'Capacity to make an innovative and realistic vision' and
- 2) 'Strategy to have flexibility'.

The '*capacity to make an innovative and realistic vision*' is a key to reduce physical/functional dilemma and financial dilemma. In order to make the capacity, the following two points must be addressed;

- 1) a good partnership between the developer, railway company and local government,
- 2) an open process with public consultation.

There are uncertainties in the future even for innovative and realistic plans. Because integrated interchange projects are so large and complex needing many years to be completed, they may face unexpected changes of economic condition and related decisions of government funding and bank investment.

In order to reduce or cope with the uncertainties and the temporal dilemma, a *strategy to have flexibility* is needed. To develop the strategy, the following two points must be addressed;

- 1) an accountable and logical planning process
- 2) a continuous monitoring system on related decisions and economic condition.

# Evaluation of Transport Performance Measures for Cities

## Sub-Group 4

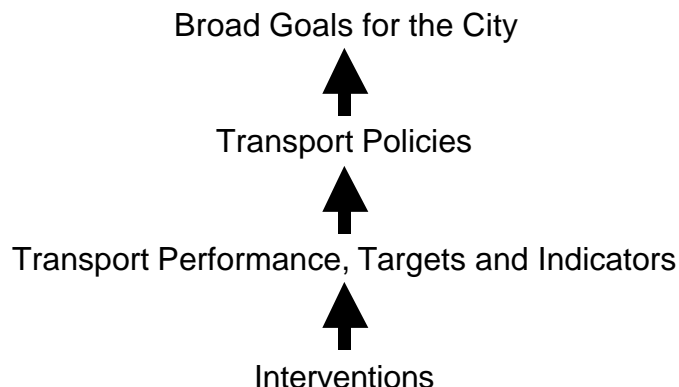
### Members of Sub-Group

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Mr Graham LAIDLAW - UK  
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Mr Cornel BOTA - Romania  
Mr Hermann KNOFLACHER - Austria

### Background

In today's cities, quality roads and transport systems can help achieve a better quality of life. Managers of transport organizations need to make decisions that contribute to city objectives that are broader than just transportation efficiency. Transport organizations face increasing challenges in meeting public expectations and to become more efficient and accountable for their actions. There is an increasing awareness that there are linkages between transport and other public policy domains: safety, the environment, the economy, social equity and mobility. Ideally, transport objectives reflect those linkages; are measurable so that transport performance can be evaluated; and assist in achieving city, regional and national policy goals.

Transport performance is assessed in numerous world cities, but there is no coherent body of knowledge about how transport contributes to broader city goals. Consequently, the members of Sub-Group 4: Measurement and Monitoring of Quality, of the Technical Committee on Urban Areas and Integrated Urban Transport (C10, PIARC), reviewed available literature and the experiences of the members themselves. Subsequently, Sub-Group 4 undertook a questionnaire survey of selected world cities in 2001/02. The purpose of the survey was to assess the strength of the alignment between:



## Survey Results

Eighteen cities located in Europe, Asia, Australia/Oceania and North America responded to the questionnaire survey. In most cases, respondents did not or could not respond to some of the questions. While the survey provided compelling insights, caution must be used when interpreting the responses because of the differences in perspectives and responsibilities of the organizations preparing responses.

## Settings

Seven cities have populations of one million or less, while six have populations of more than two million. Five respondents reported recent metropolitan area growth rates in excess of one percent per year, while three have experienced losses. None expect significant changes in recent population growth rates over the next five to ten years. Population densities range from 580 to about 4,000 persons per square kilometre. Automobile ownership ranges from about 300 to more than 600 per 1,000 persons.

Transport responsibilities vary by mode, and to a lesser extent, by the phases of the planning, delivery and operation process. In many cases, these responsibilities are shared with other levels of government or other entities. Multiple ownership of the road system – usually corresponding to the national/regional/local function of individual roads – means that different elements of the network are managed and funded by different levels of government. Rail and port transport are generally not the responsibility of city agencies. However, in most instances cities manage or oversee and fund most mass transit and non-motorized transport.

There are clear objectives for land use/housing, economic development and the environment in most cities. However, no more than four of the respondents reported that their organization has significant influence over those objectives. Most reported “some” influence, which recognizes that transport is but one – albeit important – component of urban society.

## Policy Framework

The responding cities have a wide range of goals that address the economic, environmental, social and safety aspirations of their citizens. This research sought to consider how transport organizations determine the extent to which they are meeting public policy objectives for the transport system and how those policy objectives meet broader city goals.

Respondents reported a number of transport objectives for five major issue areas. However, only a few transport objectives were measurable, such as “a 30% reduction of the number of accidents with injuries and fatalities.” The following table is a summary of issues deemed most significant and the total number of measurable objectives reported by the 18 respondents.

Significance of Urban Policy Issues and Reported Measurable Objectives (All respondents)		
Issue Area	Most Significant Issues	Measurable Objectives
Safety	Transport fatalities Transport injuries	Five
Environment	Air quality General indicators (population growth, traffic volumes, etc.) Climate change	One
Economy	Business attraction and growth Access to markets Employment	One
Social Equity	Access by the disadvantaged	None
Mobility	Accessibility Modal share Delay Quantity of travel Average speed	Eight

## Data and Technical Support for Decision Making

Transport policy objectives and related performance measures can play a critical role in setting policy, allocating resources and reporting on the results of transport programs and projects. Responding cities reported few examples of how such objectives and measures are used in decision making at system, corridor and project levels.

Respondents reported that many performance measures and a substantial variety of data are collected. Thirteen respondents provided detailed information on indicators of performance, outputs based on assessments of the indicators and the consequences of transport services. The most prominent measures are for safety (injuries and fatalities), the environment (vehicle-related emissions), the economy (employment and business attraction and growth), and mobility (accessibility, modal share, quantity of travel, delay, and average speed).

## Conclusions and Recommendations of the Work of Sub-Group 4

In today's cities, transport organizations responsible for moving people and goods face new and increasing challenges. These organizations also obtain, and use, a wealth of data and measures in carrying out their responsibilities. However, based upon the responses of the cities surveyed, there appears to be an absence of measurable policy objectives that could be used to determine if and how the goals of the city and transport agency are actually being met. If this is the case, then current transport policies in those cities are not being clearly supported by the data and measures that are currently available.

If these research results are indicative of practices in other world cities, it appears that significant changes are needed in:

- articulating measurable, realistic transport policies that support city goals;
- identifying performance measures and associated data for those policies that can be used to make informed investment decisions; and
- involving citizens and stakeholders in formulating the policies and assessing the results.



This will not be an easy task for many transport organizations. They must take into account planning and data collection budget realities, organizational competencies, and the extent to which decision-makers accept a performance-driven approach. Incremental approaches to improving the linkage between policy objectives and performance-driven decision making may be necessary.

Additional research on the appropriate linkage between city aspirations and transport performance is needed to assist transport agencies in fulfilling their expanding role. This research study – limited by time and resources – is a starting point for discussions and a basis for further work.

# CONCLUDING REMARKS

This report has summarized the work of the C10 Committee on Urban Areas and Integrated Urban Transport. There is no doubt that one of the greatest transportation challenges facing the world over the next few decades is the growth in urban areas and the consequent potential congestion, pollution and loss of quality of life. To help address this issue C10 Committee has researched four critical areas:

- 1) Sharing the Main Street
- 2) Land Use and Transport Policies in Urban Areas
- 3) Transport Interchanges and Urban Development
- 4) The Evaluation of Transport Performance Measures for Cities.

We have gathered together best practice in these four areas from developed countries, developing countries and countries in transition all over the world. We have highlighted a range of excellent practical examples of where countries have addressed the issues within these four areas and we have extracted common conclusions and highlighted differences.

“Sharing the Main Street” reached some important conclusions:

1. In a Main Street you combine some carefully selected functions.
2. These functions should be in balance; no function should be dominant.
3. There is a world-wide trend to create more space for cyclists and pedestrians.
4. There is another trend that the same space is used for different functions at different times.
5. When you allow motorized traffic in a Main Street (through or local traffic) you must allow parking in the street.
6. Public involvement is important for the acceptance of solutions.
7. To avoid uniformity it is important to save or create unique elements that characterise the local community or refer to historical issues.

Land-use and Transport Policies in Urban Areas compared developed countries, developing countries and countries in transition through looking for common goals and objectives, looking at land use and transportation policies and the integration of land use, transportation and institutional policies. The survey results showed a diverse response from different country categories as well as differences in socio-economic background and the size of the city. They found it was difficult to establish trends within such a variation of policies, even at the macro level. In developing countries key issues are improvements in traffic safety and comfort whilst in countries in transition it is a necessary, assumed condition to promote economic growth. In developed countries the focus is on sustainability. Three cities were analysed in detail; Durban, Montreal and Bratislava.

The third area of research relates to Transport Interchanges and Urban Development. Again, evidence of best practice was collected from all over the world. Based on these case studies, the findings were structured around three key questions about policy objectives and driving forces, typical dilemmas between transport function and activity centre function and effective remedies for the dilemmas.

The driving forces were summarized under policy objectives by government, development of rail technology and institutional changes e.g. privatisation of railways. Typical dilemmas were summarized under three headings; the physical and functional dilemma, the financial dilemma and the temporal dilemma.

The effective remedies for the dilemmas highlighted a wide variety of solutions. They can, however, be summarized under two headings: the capacity to make an innovative and realistic vision and the strategy to have built-in flexibility.

The final area of work relates to the Evaluation of Transport Performance Measures. This is an under-researched area and one of great importance. We must be able to effectively test the performance of success of transportation solutions especially in relation to other city goals in, for example, health and social inclusion. Eighteen cities, located in Europe, Asia, Australia/Oceania and North America responded to the extensive survey. Based on the research results there appears to be an absence of measurable policy objectives that could be used to determine if and how the goals of the city through the transportation policies are actually being met. It would appear that significant changes are needed in the following:

- Articulating measurable, realistic transport policies that support city goals;
- Identifying performance measures and associated data for these policies that can be used to make informed investment decisions;
- Involving citizens and stakeholders in formulating the policies and assessing the results.

The C10 Committee, Urban Areas and Integrated Urban Transport, of PIARC, has researched four critical areas as the key to ensuring the continued successful growth of the world's urban areas. We hope that the results of the research are a valuable contribution to ensuring the successful role of transportation in helping to improve the economy, environment and quality of life for people all over the world living in urban areas.

**Prepared by the Chairman, Secretaries and Sub-Group Leaders of PIARC  
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