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TECHNICAL COMMITTEE 2.3
FREIGHT TRANSPORT

2012 – 2015 INTRODUCTORY REPORT
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EXECUTIVE SUMMARY


The first report, Framework for citywide road freight transport management, addresses road freight transport management (RFTM) as a key contributor to the sustainable development of urban areas.

The framework of RFTM is characterised by legal, institutional and strategic aspects and the analysis in the report is based upon case studies from several World Road Association member countries.

RFTM issues are complicated and challenging, balancing economic growth and environmental impacts, reducing energy consumption and improving road safety. Added complexity comes from the multiple stakeholders involved in urban freight transport, namely shippers, freight carriers, administrators, residents and others. The different aspirations of private and public entities highlight the benefits of coordination in the process of implementing policy measures. Within the public sector the collaboration among multiple local authorities in the same region, as well as those at regional, national and international level, is required.

The report concludes that efficient frameworks, based upon public-private partnerships for performing RFTM initiatives, need to be established to tackle complicated urban freight transport problems in the pursuit of more mobile, sustainable and liveable cities. The features of a framework might be different in different countries, reflecting the economic, historical and cultural development of cities.

The second report, Moving freight transport forward – Green, Smart and Efficient, investigates the concept of co-modality, and through identified case studies of good practices, addresses the challenges associated with freight transportation efficiency.

The concept of co-modality was defined as the use of each transportation mode in its best configuration to optimise the whole transportation chain. This study focuses on the road mode and its interfaces with the other modes.

The analysis of these cases studies showed that the environmental pillar is the primary focus of most of the identified strategies. The economic pillar follows closely in terms of interest by stakeholders, but the social pillar is largely unaddressed, except where it is identified as a tertiary concern. Aside from the focus on sustainability, the main outcome of these strategies was clearly improved logistics, mainly in conjunction with a modal shift from road to another mode.

The lack of uniformity in the level of developments of technology (vehicle/infrastructure), policy/regulations, and behaviour/logistics hinders the progression toward an optimised freight transportation system.

Cooperation between the stakeholders was identified as a critical factor, necessary for achieving success in any case, but competitiveness and financial benefits are central for the majority of cases.
Given the relatively high cost of technology and infrastructure investment strategies, there are barriers to transferring these case studies to other places and contexts. Policy approaches and information and education strategies are better suited for transferability than infrastructure investment strategies, due to their relatively low cost, and being easier to generalize.

**COMMITTEE MEMBERS WHO CONTRIBUTED TO THE REPORTS**

The Chair of Technical Committee 2.3 was Don Hogben, Australia, and the Secretaries were Rick Barber, New Zealand (English Speaking), Bernard Jacob, France (French Speaking) and Carlos Santillan, Mexico, (Spanish Speaking).

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*Framework for citywide road freight transport management*

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1. REPORTS

1.1. General

Technical Committee TC 2.3 was tasked with two issues through its Terms of Reference, as specified in *Strategic Plan of the World Road Association – 2012 – 2015*, as follows:

Issue 2.3.1, Freight management
Study the overall system of interurban / urban freight management, considering the influence of logistics strategies on: delivery models and road freight transport, dangerous goods transport, road access and guidance control, terminals and transfer stations, truck parking and security.

Investigate truck management strategies and measures to improve the economic and environmental efficiency of road freight (including noise reduction).

Report based on case studies.

Issue 2.3.2, Co-modality for freight transport

Investigate how the concept of co-modality is implemented with the objective of an optimal use of the different modes of transport for freight. Identify the initiatives, objectives, results and obstacles.

Analyse, in particular, the outcomes regarding modal shift of freight transport from roads to other modes.

Report on case studies and recommendations.

2. FRAMEWORK FOR CITYWIDE ROAD FREIGHT TRANSPORT MANAGEMENT

The report, Framework for citywide road freight transport management, describes the research and findings about the frameworks for public sector road freight transport management (RFTM). RFTM is a key contributor to the sustainable development of urban areas, since good freight transport management supports the creation of efficient and environmentally friendly freight transport systems. The framework of RFTM is characterised by legal, institutional and strategic aspects. A unique aspect of the report is the use of case studies, based on surveys of frameworks for RFTM found in several World Road Association member countries.

The report charts the decision making frameworks that support and guide national, regional and local freight planning activities expanding on the previous work of the Committee to determine the approach and general principles that underpin a successful multi-faceted, multi-stakeholder process to achieve the goal of safe, efficient and environmentally sustainable RFTM systems.

Many of the aspects of RFTM systems are ‘institutional factors’, which are the domain of either the public or private sector, which in many cases require collaboration between the stakeholders to optimise RTFM outcomes. Understanding the geographical, jurisdictional and existing land use and transport planning systems that impact RFTM systems and strategies provides valuable context when developing freight policy and managing the range of trade-offs that invariably arise.

Chapter 1 introduces RFTM, in particular explaining the need for a defined framework for RFTM systems.

Chapter 2 categorises the institutional factors to better describe the context within which the subsequent case studies operate. The following factors provide the necessary context:
• Geographic and jurisdictional arrangements
• Land use and transport planning system
• Public and private sector collaboration arrangements

It is important to identify and understand the principles that underlie a governance framework. These factors aid the decision making process in that they provide structure and guide how knowledge is harnessed to make optimal RFTM systems and strategy planning decisions.

In chapter 3 the following principles are identified as contributing to the successful development of RFTM systems and strategies:

• Guidance from multi-jurisdictional freight planning bodies
• Understanding the regional cooperative arrangements between jurisdictions
• The use of public-private partnerships
• Having a dedicated freight planning and management function
• The benefits of effective leadership
• Performance evaluation

Chapter 4 explores the lessons learned from the various case studies, categorising the cities/areas with a freight plan or those with a mechanism to regulate or control road freight flows. It identifies their distinctive characteristics and describes their individual actions.

Chapter 5 draws together conclusions from the evidence presented throughout the report, which are summarised below.

RFTM issues are complicated and challenging, balancing economic growth and environmental impacts, reducing energy consumption and improving road safety. Added complexity comes from the multiple stakeholders involved in urban freight transport, namely shippers, freight carriers, administrators, residents and others. The different aspirations of private and public entities highlight the benefits of coordination in the process of implementing policy measures. Within the public sector the collaboration among multiple local authorities in the same region, as well as those at regional, national and international level, is required.

Institutional factors for RFTM include legal issues, organisations and functionality. In various countries, organizations in charge of RFTM, based on laws or ad-hoc arrangements, are found at the city, regional, national, and international level. The common function of these organisations are recognising the importance of RFTM, sharing ideas and perspectives on RFTM for creating visions for future social and economic development of the area, finding the appropriate approaches and measures to solve related problems, implementing policy measures, and evaluating the results.

As multi-jurisdictional freight planning can provide the policy direction and context for RFTM, regional cooperative arrangements among jurisdictions are needed for the implementation of freight management activities. Public-private partnerships also play a key role in needs identification, development of solutions, and potential sharing of benefits and costs. Nevertheless a dedicated freight planning and management function is essential within city government. Among public-private partnerships of stakeholders, leadership is important to define a common vision for RFTM and promote a strategic
initiative. After implementing policy measures, ongoing evaluation of RFTM performance is required, including its benefits and the evaluation of its impacts on the transportation system and its users.

There are examples of multiple local authorities within a metropolitan area developing a collaborative relationship in their freight transport management. Public-private collaborations can be a leading group playing an important role in promoting freight transport management in the city/area. There are a variety of approaches in the freight transport management for urban areas; some focus particularly on area wide logistics, while other cities implement individual issue measures in response to specific needs. Each area judges its approach on its own situation.

Many areas have designated truck routes (either regulated or preferred routing) to focus truck traffic on the most appropriate parts of the road network. Some areas specifically design road infrastructure to achieve this by providing an arterial road network, including ring and radial roads, as part of the broader plan of the surrounding metropolitan area. The development of such arterial roads often attracts logistics centres and industrial activities to adjacent areas. Where supported by land use planning, this ‘new-highways-bring-industries’ effect results in clusters of freight related activity along the arterial road network. Some national policies emphasises all user access to public roads whereas others adopt regulatory approaches to freight vehicle traffic specific to an area or across wider areas.

The report recommends that efficient frameworks, based upon public-private partnerships for performing RFTM initiatives, be established to tackle complicated urban freight transport problems in the pursuit of more mobile, sustainable and liveable cities. The features of a framework might be different in different countries, reflecting the economic, historical and cultural development of cities. Further research through international collaboration is needed on RFTM.

3. MOVING FREIGHT TRANSPORT FORWARD – GREEN, SMART AND EFFICIENT

This study addresses the challenges associated with freight transportation efficiency, presenting and analysing a series of good practice examples that reveal efficient freight transportation systems. It should serve as a source of inspiration for making freight transportation more efficient from the perspective of economic, environmental, and social sustainability.

The concept of co-modality is central to this report and it is defined as the use of each transportation mode in its best configuration to optimise the whole transportation chain. This study focuses on the road mode and its interfaces with the other modes. Freight transportation produces many negative consequences, from greenhouse and pollution emissions to safety issues, and impacts on amenity. However, freight transportation as a part of the supply chain is essential for the economy and our quality of life and is expected to keep growing in the coming decades. As such, optimised transportation solutions are needed to maximize freight efficiency while minimising negative impacts. This report suggests solutions for optimizing the efficiency of the freight transportation system.

Road transportation, alone or in combination with other modes, plays a major part in freight efficiency. Thus it must also play a key role in optimising the efficiency of freight transportation.
The work began with a definition of what can be considered as an “optimised” transportation solution. Optimised transportation means solutions that considerably improve on the current freight efficiency, balancing economic social and environmental impacts. An analysis of examples of good practices according to this definition helped identify the challenges regarding the pillars of sustainability, conditions of implementation, and level of transferability of each example.

The study collected relevant material for analysis through a survey borrowing from the methodology of the European Union funded research project BESFACT, which showed examples of good freight transport practice. This project guided the survey to be divided into three parts: (1) a general description of the project, (2) economy and impacts (both negative and positive) and (3) success factors, barriers, and transferability of the project.

The study collected a total of eighteen case studies, showing a wide range of possible strategies for improving freight transportation efficiency in either a single or multimodal setting. Ten cases originated from Europe, five from North America, and the rest from Asia. For the benefit of the analysis, the strategies were then classified into five types: Policy, Technology, Infrastructure, Information and Education, and Partnerships.

The analysis of these cases showed that the environmental pillar is the primary focus of most of the identified strategies. The economic pillar follows closely in terms of interest by stakeholders, but the social pillar is largely unaddressed, except where it is identified as a tertiary concern. Aside from the focus on sustainability, the main outcome of these strategies was clearly improved logistics, mainly in conjunction with a modal shift from road to another mode.

It also appears that the lack of uniformity in the level of developments of technology (vehicle/infrastructure), policy/regulations, and behaviour/logistics hinders the progression toward an optimised freight transportation system. Improved national and international dialogue and better cooperation are important areas to develop to overcome these obstacles.

Furthermore, cooperation between the stakeholders is a critical factor, necessary for achieving success in any case. Additionally, many case examples mention behavioural aspects as a key success factor. Competitiveness and being able to achieve financial benefits are, however, central for the majority of cases.

Given the relatively high cost of technology and infrastructure investment strategies, there are barriers to transferring these case studies to other places and contexts. Transferability, particularly to developing countries, is very important in order to achieve environmental sustainability, since environmental impact is a global issue. Accordingly, it appears that policy approaches are better suited for transferability than infrastructure investment strategies. Information and education strategies are, in many cases, easier to generalize because of the low cost relative to infrastructure investment strategies.

The analysis of the case studies led the project team to make the following recommendations, addressed to various stakeholders and settings:

- Support research on improving the three pillars of sustainability (rather than on any specific mode) and strategies with a high potential for making long-distance freight transportation more sustainable and efficient.
• Adapt freight transportation policies (and regulations) to ensure that each mode alone or in combinations with other modes is used to maximize their strengths.
• Develop freight corridors with consistent design standards to facilitate interoperability and transferability to other jurisdictions.
• Provide stable and on-going funding for projects and initiatives that make freight transportation more efficient and environmentally friendly.
• Encourage the use of public-private-partnership (P3 or PPP) funding, in particular, for high-cost infrastructure investment strategies where market conditions warrant.
• Encourage cooperation among stakeholders (e.g. policy makers, operators, and shippers, and service providers) to enhance the decision making process and to ultimately achieve a more efficient freight transportation system. This could take the form of an advisory group, for instance, to improve system efficiency. This approach is used in some places in the United States and Europe.
• Given the crucial role terminal facilities play in freight transportation, particular attention should be made to their planning, design, operation, and management from a sustainability and efficiency perspective.
• Even though economic factors are very important in the decision-making process, environmental and societal considerations must also be taken into account as these two factors ultimately have economic consequences.
• Given that the transportation sector is a major contributor to greenhouse gas (GHG) emissions, minimize these emissions and energy consumption through various means including (but not limited to): international treaties, national and/or regional regulations, voluntary initiatives, and compensatory programs.
• Develop monitoring and follow-up programs to measure and evaluate the outcome of freight transportation projects and policies, especially with respect to the societal component of sustainability (since this component seems harder to identify and measure than the economic and environmental components).

BIBLIOGRAPHICAL REFERENCES

Extensive bibliographical reference lists are included as part of the two Working Group reports:

• Framework for citywide road freight transport management
• Moving freight transport forward – Green, Smart and Efficient

DRAFT CONCLUSIONS

Framework for citywide road freight transport management

RFTM issues are complicated and challenging, balancing economic growth and environmental impacts, reducing energy consumption and improving road safety. Added complexity comes from the multiple stakeholders involved in urban freight transport, namely shippers, freight carriers, administrators, residents and others. The different aspirations of private and public entities highlight the benefits of coordination in the process of implementing policy measures. Within the public sector the collaboration among multiple local authorities in the same region, as well as those at regional, national and international level, is required.
Institutional factors for RFTM include legal issues, organisations and functionality. In various countries, organizations in charge of RFTM, based on laws or ad-hoc arrangements, are found at the city, regional, national, and international level. The common function of these organisations are recognising the importance of RFTM, sharing ideas and perspectives on RFTM for creating visions for future social and economic development of the area, finding the appropriate approaches and measures to solve related problems, implementing policy measures, and evaluating the results.

As multi-jurisdictional freight planning can provide the policy direction and context for RFTM, regional cooperative arrangements among jurisdictions are needed for the implementation of freight management activities. Public-private partnerships also play a key role in needs identification, development of solutions, and potential sharing of benefits and costs. Nevertheless a dedicated freight planning and management function is essential within city government. Among public-private partnerships of stakeholders, leadership is important to define a common vision for RFTM and promote a strategic initiative. After implementing policy measures, ongoing evaluation of RFTM performance is required, including its benefits and the evaluation of its impacts on the transportation system and its users.

The report concludes that efficient frameworks, based upon public-private partnerships for performing RFTM initiatives, need to be established to tackle complicated urban freight transport problems in the pursuit of more mobile, sustainable and liveable cities. The features of a framework might be different in different countries, reflecting the economic, historical and cultural development of cities.

**Moving freight transport forward – Green, Smart and Efficient**

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Cooperation between the stakeholders is a critical factor, necessary for achieving success in any case. Additionally, many case examples mention behavioural aspects as a key success factor. Competitiveness and being able to achieve financial benefits are, however, central for the majority of cases.

Policy approaches are better suited for transferability than infrastructure investment strategies and technology, because of the relatively high cost. Information and education strategies are, in many cases, easier to generalize because of the low cost relative to infrastructure investment strategies.