A National Framework for Sustainable Urban Transport Systems

Proposals for Improving Urban Transportation in Russian Cities
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In many Russian cities, growing demands for mobility are not adequately met by the existing urban transport infrastructure and services. Most municipalities have had difficulties in planning and managing the development of their urban transport systems in a coherent manner, which is a precondition for successful resolution of the existing transport problems. In addition, there is a need to develop and put in place a sound legal and regulatory framework. Thus, in order to create favorable conditions for addressing the existing transport problems, there is a need to develop a national framework that would contribute to the creation of pre-requisites for sustainable development of urban transport systems. The purpose of this work is to develop proposals for the formation of the national framework for improvement of the quality and sustainability of urban transport (including mass transport and private transport) and road traffic safety in Russian cities.
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ABBREVIATIONS AND ACRONYMS

AMF   French Mayors’ Association
AVL System   Automatic Vehicle Location System
AVL   Contract Supervision Equipment
BRT   Bus Rapid Transit
CERTU   Centre for the Study of Urban Planning, Transport and Public Facilities
CNFPT   French National Centre for Local Government
CNG   Compressed Natural Gas
CPT   Corporate Profit Tax
dBA   Decibel
DfT   Department for Transport
DG IPOL   Directorate General for Internal Policies
ECMT   European Conference of Ministers of Transport
EDI   Electronic Data Interchange
EMBARQ   Report “Evaluate, Enable, Engage”
EU   European Union
FAR   Floor Area Ratio
FHWA   Federal Highway Administration
FHWA   Federal Highway Administration, U.S. Department of Transportation
FMVM   French Federation of Mayors of Medium-Sized Towns
FQPs   Freight Quality Partnerships
FTA   Federal Transit Administration
Gart   Association of French Passenger Transport Authorities
GDP   Gross Domestic Product
Goskomekologiya   State Committee of the Russian Federation for Environmental Protection
Gosstroï   State Committee of the Russian Federation on Architectural and Construction
GPS   Global Positioning System
HDM-4   Highway Development and Management Model
IFSTTAR   French Institute of Science and Technology for Transport, Development and Networks
IMS   Information Management Systems
INRETS   French National Institute for Transport and Safety Research
IT   Information Technology
ITS   Applications of Intelligent Transportation Systems
JSC   Joint-stock Companies
KOTI   Korea Transport Institute
LITI   Loid’Oreintation des Transports Interieurs
LPG   Liquefied Petroleum Gas
LRT   Light Rail Transit
LTA   Land Transport Authority Academy
MosEco   Monitoring Organization
MoT   Ministry of Transport of the Russian Federation
MRT   Mass Rapid Rail Transit
MUEs   Municipal Unitary Enterprises
NEPA   National Environmental Policy Act, United States Environmental Law
NIAT  Scientific and Research Institute of Motor Transport
NMT  Non-Motorized Transport
PBC  Performance-based Contracting
PIT  Personal Income Tax
PPP  Public Private Partnership
PTA  Public Passenger Transport Authority
R&D  Research and Development
RMB p.a.  Ren Min Bi (Currency)
RONET  Road Network Evaluation Tools
RosAvtoTransport  Federal Budget Institution
RosTransModernizatsiya  Federal Governmental Institution
RRL  Road Research Laboratory
SAFETEA-LU  Federal Law—Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users
TMU  Traffic Management Unit
TMU  Traffic Management Units
TOR  Terms of Reference
TRACE  Tool for Rapid Assessment of City Energy
TRF  Transport Research Foundation
TRL  Transport Research Laboratory
UMTA  Urban Mass Transit Administration
UniSIM  Academy and SIM University
UTP  French Public Transport Union
WHO  World Health Organization
WUTLS  World Urban Transport Leaders Summit

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EXECUTIVE SUMMARY
BACKGROUND AND OBJECTIVES OF THE ADVISORY SERVICES

Russian cities are undergoing critical economic and social changes that affect the performance and condition of their urban transport systems*. As the average income of urban dwellers increases, the motorization rate—the number of vehicles per population—has grown and is growing rapidly. The labor and business activity of the population and the demand for services of shopping centers, cultural and recreation facilities, and trips to the countryside are growing, resulting in a rapid increase of demand for mobility, both in terms of quantity (i.e., traffic volume) and quality (i.e., comfort, safety, convenience and reliability of transport). In many Russian cities, these growing demands are not adequately met by the existing urban transport infrastructure and services. Most municipalities have had difficulties in planning and managing the development of their urban transport systems in a coherent manner, which is a precondition for successful resolution of the existing transport problems. In addition, there is a need to develop and put in place a sound legal and regulatory framework.

Thus, in order to create favorable conditions for addressing the existing transport problems, there is a need to develop a national framework that would contribute to the creation of prerequisites for sustainable development of urban transport systems.

The purpose of this work is to develop proposals for the formation of the national framework for improvement of the quality and sustainability of urban transport (including mass transport and private transport) and road traffic safety in Russian cities.

This work was undertaken by the World Bank at the request of the Ministry of Transport of the Russian Federation (Contract No. 10-38-23 dated December 15, 2011).

1. METHODOLOGY AND STRUCTURE OF THE ASSIGNMENT

The assignment was implemented on the basis of (i) analysis of the current status of development of the transport systems and infrastructure in Russian cities; (ii) analysis of the international experience in the area of planning of urban transport systems and the operation of such systems; (iii) analysis of the legal and regulatory framework for development of the transport sector in Russian cities; and (iv) review of different proposed options (with consultations with Russian and foreign experts).

The present situation of urban transportation in Russian cities was assessed based on the data collected from 22 cities, interviews with representatives of eight cities, and discussions with various federal entities, Russian technical experts, the private sector, non-governmental organization, and academic institutions.

The recommendations are based on the diagnosis of the present situation and benchmarking with international good practices; the realism of the recommendations and their suitability to political and economic environment of Russia has been discussed with relevant counterpart in the Federal Ministry of Transport.

The focus of this work, which resulted in the development of appropriate recommendations, was on the following key aspects of activities in the transport sector:

- strategic and territorial planning of the development of transport systems;
- management and institutional setup;
- financing;
- legal framework;
- traffic safety;
- monitoring and supervision (including in the area of environmental protection);

* In this summary and following papers, “urban transport system” means all forms of transportation infrastructure facilities and vehicles and equipment, as well as their operations, in cities, including but not limited to, passenger transportation, traffic management, and parking.
The results of the work are presented in the form of four Papers (see the flowchart below), each of which is devoted to a specific area:

- Paper I «Developing a Strategy for Sustainable Urban Transport Systems» sets out the principle and key elements of a general urban transport strategy;
- Paper II “Legal and Regulatory Changes to Improve Sustainability of Urban Transport Systems” contains specific proposals for development of a federal-level framework for development of urban transport systems (implementation of legal and regulatory reforms);
- Paper III “Developing a National Urban Transport Advisory Facility (Federal Information and Analytical Center for Development of Transport Systems)” focuses on the creation of a special federal-level body that would be entrusted with a range of functions such as provision of information related to the transport sector and traffic management and advisory support in these areas, as well as dissemination of best practices; and
- Paper IV “Designing a Federal Targeted Program for Sustainable Urban Transport Systems” contains proposals for development of a federal program of assistance for Russian cities, including through provision of financial support.

2. KEY TERMS AND DEFINITIONS

The concept of **Urban Transport** covers all matters related to the transportation of passengers and cargoes in cities, including road construction and maintenance, traffic management, public transport operations, as well as relevant aspects of land use planning and development control.

**Urban Transport Systems** – all types of transport infrastructure, transport vehicles and equipment and their operation in cities, including urban passenger transport, traffic management, and parking management.

**Institutional Aspects** – this term has a broad meaning and covers various legal, administrative, institutional, management, and other non-technical aspects, which serve as a basis for decision-making. With regard to the urban transport sector, institutional aspects include the following:

- matters permitted and prohibited by the current legislation;
- institutional and management structure of transport and traffic management systems in Russian cities (government agencies, private companies, etc.);
- distribution of functions and responsibilities among legal entities, private individuals, and entrepreneurs;
• decision-makers;
• procedure for ensuring accountability in organizations;
• procedure for holding government agencies at various levels, legal entities and private individuals accountable for their actions;
• financial resource allocation arrangements; and
• procedure for procurement of transport vehicles and equipment, performance of works and provision of services.

**Sustainable Urban Transport System** is an effectively organized transport system that has the following characteristics:

• the road system is adequate in quantity for the traffic that it carries and well-structured for the functions that it performs;
• transport infrastructure and vehicles are designed and maintained to ensure safe and comfortable movement for vehicle users, public transport passengers, cyclists and pedestrians, regardless of their physical ability;
• public transport offers an affordable and accessible service to all citizens, as well as providing an acceptable alternative to the private car for those trips which, if taken by car, would overload the road system; and
• the movement of traffic on the roads is controlled (i.e., traffic management) to achieve the most efficient performance of the given road space and to mitigate severe congestion and environmental impact from automobiles.

Several common success factors can be identified from the experience of better-performing cities, which have approached this ideal state through a combination of institutional arrangements, policy measures and allocation of budgetary resources, including the following.

A. **strategic planning process in which**:

• **Consistency of long-term planning and implementation** is achieved through a planning process which links the long-term strategy, a medium-term expenditure plan (often five years) and the annual budgetary process.
• **Urban transport is viewed holistically**, with policies on land use, road provision, traffic management and public transport subject to an overall strategic control, brought together through a comprehensive strategic planning process, usually through a published strategy document.
• **A metropolitan level management** applies to critical transport functions, whether there is a unitary metropolitan government (e.g., Istanbul, Turkey), a single-purpose metropolitan public transport authority (e.g., US cities), or strong associations of contiguous authorities (e.g., French cities).

B. **Efficient road traffic functions**, including:

• **A road construction and maintenance organization** which is adequately financed and employs efficient modern road asset management systems to ensure efficient allocation of resources.
• **A traffic management organization** which is adequately funded and has high-skill staff to make good use of modern technologies and to secure both efficient and safe movement on the roads.
• **A city-wide parking management** which is founded on a comprehensive law on both on-street and off-street parking, consistent with the city transport strategy and considers parking policy as a tool for control over new developments on the city outskirts and for restraining demand for the use of private cars for travel to the congested city center.
C. An efficient public transport system, achieved through:

- **Mass transit development** as the core of a public transport system to provide an attractive alternative to the private car. This is supported by integration of all modes in a single system, including planning of modal roles and services, good physical provision for interchange, and integrated ticketing and passenger information systems;
- **Separation of system planning from operations** with professional control over service and fare planning, as well as procurement of service, monitoring and contract enforcement;
- **Efficient procurement of supply** through service contracts, which are let through competitive tendering applied to all services whether commercial or subsidized, and commercialization of public sector operators.

**Transfer** – this term has several meanings: (i) a payment from the national budget; (ii) a transfer of foreign currency from one country to another, a banking transaction involving concurrent transfers of national currencies of two or several countries; (iii) a transfer by one person to another of the ownership of securities; (iv) a remittance of funds from one bank account to another; and (iv) emigration of citizens from one country to another; and transportation of tourists from an airport to a hotel or between cities. Generally, the term “transfer” refers to redistributive money payments.

**Outsourcing** – contracting out by an organization of certain business processes or operational functions to another company specializing in a relevant area of activity. Unlike in the case of support services that have a one-time, episodic and ad hoc nature and are provided within a certain timeframe, typically, professional support functions of ensuring uninterrupted operation of individual systems and infrastructure facilities are outsourced under a long-term (at least one year) contract. Existence of a business process is a distinctive feature of outsourcing which makes it different from other forms of provision of support services.

3. CURRENT SITUATION IN RUSSIAN CITIES

Many Russian cities fall short of this ideal end-state—as indeed do many cities in both developed and developing countries—for the following reasons: First, **urban transport is not treated a coherent whole in most Russian cities, either functionally or spatially**. In the legislation of the Russian Federation, urban transport is not treated as a coherent whole in a comprehensive manner, with public transport responsibility falling to the municipalities, a number of key aspects related to traffic management are not legislatively regulated (there is a lack of clear understanding about the types of documents required for performance of pre-project and project activities; functions in the area of transport sector activity are not properly defined; responsibilities in the area of organization of on-street parking have not been clearly distributed, etc.). Land-use planning is poorly related to transport planning: traffic impacts of new developments and changes in land-use are seldom assessed. While catchment areas of major cities expand beyond the municipal boundaries, formation of a metropolitan area that encompasses multiple municipalities, in which transportation can be coherently planned and organized, is legally difficult. Transportation coordination bodies with adjacent oblasts (“Transport Hubs”) have recently been established for Moscow and St. Petersburg, the only two cities that are of oblast status. The Moscow Transport Hub is currently preparing an investment program that coordinates road network development between Moscow City and Moscow Oblast. This program, however, falls short of coordinating the public transport services across the city border. Key institutional parameters of these coordination bodies—such as organizational structure, composition of the board, decision-making procedures and method of cost sharing—would require further development, as they move towards implementation of the investment programs and integration of public transport systems.

Second, **allocation of financial resources for urban transport in municipalities appears to be inadequate, unpredictable and not strategically planned**. Without any legal requirement or guidance, municipalities are not required to prepare a strategic transport plan and link it to the municipal
budget. Moreover, the majority of municipal budgets come from the inter-governmental transfers, inhibiting the municipalities’ ability to prepare a multi-year plan. As a result, transport capital assets—infrastructure and vehicles—are not adequately maintained or renewed. While inheriting relatively spacious road systems, many Russian cities are struggling to maintain them adequately. Public transport vehicle fleets operated by municipal autobus companies are usually old and unattractive. Investments in innovative technologies that would improve traffic flows and convenience and safety of passengers have been limited.

Third, in various functional areas of urban transport, the institutional and technical capacity in Russian cities demands improvements. Key areas are listed below:

- **Road maintenance** is inadequate. Many cities lack not only adequate funds, but also an up-to-date inventory of road conditions and a computerized road asset management system, which would help them allocate the scarce resources efficiently for road maintenance;
- **Traffic management** is narrowly defined and weak in many cities. Signal systems in many cities are out-dated and in poor condition; traffic engineering to enhance pedestrian safety and give public transport priority is rare in the absence of a strategic plan emphasizing these issues. Applications of Intelligent Transportation Systems (ITS) in traffic management, monitoring, and passenger information system are also scarce;
- **Investments in a mass transit network** and integration of various modes, in terms of the route planning, fare collection systems and scheduling, is much to be improved. Metro systems in several cities (e.g., Yekaterinburg, Samara and Kazan) are very short and are often not well integrated with other public transport modes; the bulk of budgetary resources in these cities is spent to cover operational costs. While additional metro systems are planned or under construction, other innovative mass transit options that provide high-capacity and high-speed services at lower costs—such as bus rapid transit (BRT) and light rail transit (LRT)—need to be considered, particularly in medium-size metropolitan areas; and
- **Demand management**—physical restrictions, policy instruments, and/or pricing measures to limit the use of private cars in congested city centers, including parking regulations—is still a new concept that has not been fully embraced by policy-makers in Russian cities. Adequate demand management measures will become increasingly essential as more people own cars in Russian cities. In many cases, the current requirements with regard to provision of a minimum number of parking spaces in new developments are not complied with, which results in increased congestion of adjacent city areas, including the road network.

Finally, planning and operation of existing road-based public transport modes and the way private autobus services are procured needs to be reformed. Many cities currently have a two-tier public transport system. Social services are provided by municipal unitary enterprises under sole-source contracts and offer concessionary fare while commercial services are competitively tendered and provided by private operators under term contracts. This arrangement undermines market efficiency, a status in which the most qualified cost-competitive operators provide services on particular routes under clearly defined contractual obligations. The current contracting system needs to be reformed to eliminate the two-tier system, to strengthen the competition for the market, and to improve monitoring of operators’ performance in terms of service quality and vehicle standards.

In summary, the current condition in Russian cities falls short of international good practices in a number of ways.

### 4. RECOMMENDATIONS AND PROPOSALS: NATIONAL FRAMEWORK FOR SUSTAINABLE URBAN TRANSPORT SYSTEMS

In the Russian legal and administrative system, management of urban transport infrastructure and services within the city boundary is *de facto* the responsibility of municipalities (Federal Law on General Principles of Municipal Government dated 06.10.2003, Law No. 131-FZ). While having no direct legal
control over actual decisions made on urban transport at municipal level, the Government of the Russian Federation nevertheless can perform an important role in assisting the regions and municipalities in the area of urban transport.

The Government of the Russian Federation should articulate a general strategy on how urban transport can be made more sustainable, as well as encouraging implementation of such a strategy with the instruments at its disposal. Those instruments include:

- setting the legal and regulatory framework;
- policy and technical advisory assistance; and
- financial support.

Under the present advisory services by the World Bank, the results of the work are presented in the form of four Papers.

4.1. Legal and Regulatory Framework to improve sustainability of urban transport systems

Priority Legal Reform #1: Adopting a new comprehensive law on traffic management. The Concept of the Draft Law on Traffic Management prepared by the Ministry of Transport, dated February 2, 2012, lays out the ground for important reforms. The Draft Law recognizes that the gaps and contradictions in the existing legal system concerning road traffic management. It also adopts important principles such as viewing traffic management as a key strategic element of, and critical necessary condition for, sustainable urban transport systems. Nevertheless, as discussed in detail in Paper II (Section 8.1), there are remaining gaps in the new Draft Law, including its relationship with land-use planning, institutional arrangements, treatment of parking regulations associated with development control, among other things. While maintaining the spirit, therefore, the draft proposal for the new law needs to be refined and completed. For instance, the Draft Law should grant the power of traffic management solely to municipal authorities along with other functions of urban transportation. Also, municipalities should be given clear and extended power to restrain the use of motor transport in certain city areas and charge for, on-street parking, to set charges and fines for infringement at local level, subject only to some relatively high national limits, and to use civilian employees to implement and enforce parking policy.

Priority Legal Reform #2: Comprehensive legislation on public transport supply and operation. One of the important gaps of the Draft Law on Traffic Management is its omission of public transport issues. It is recommended that planning and regulation of public transport services, requirements for competitive tendering, recommendations for gross-cost contracting, and reforms of municipal unitary enterprises be handled in one comprehensive law on public transport supply and operation. Ideally, this law would allow for some intermediate forms of metropolitan coordination, which enable route planning and integrated operation of public transport services that cover multiple municipalities in urban areas.

National Framework for Sustainable Urban Transport Systems
(Paper I) A National Strategy for Sustainable Urban Transport – improving the economic, social and environmental sustainability of urban transport systems in Russian cities

(Paper II) Legal and Regulatory Framework that clearly defines responsibilities and powers
(Paper III) Advisory Assistance that facilitates capacity building and knowledge sharing
(Paper IV) Financial Support that improves adequacy and predictability of funding
4.2. Creating a National Urban Transport Advisory Facility (Federal Information and Analytical Center for Development of Transport Systems)

There is a strong case for a national level institution performing a leading role in managing a national urban transport database and providing guidelines and good practice examples to all Russian cities.

**Priority Advisory Assistance #1: Creating a national advisory facility.** Given the economies of scale, it would be appropriate to entrust the National Advisory Facility with the following functions and responsibilities:

- monitoring of the status of implementation of major federal projects and programs in the area of transport infrastructure development and traffic management;
- maintenance of a database on the condition of urban streets and roads, traffic and passenger flows (data would be obtained through monitoring of the condition of streets and roads and transport and passenger flows undertaken at the local level);
- development of skills improvement and training programs;
- dissemination of best practices in the area of transport;
- organization of thematic exhibitions in different cities; and
- provision of consulting services in the area of development of transport systems and traffic management.

As these activities are the basis both for the development of training and capacity building and identification of research needs, it is considered that these two functions should also be in the same cluster. A federal budget financed institution, which has a legal mandate to generate and share public goods — research and advisory assistance that benefit all Russian cities — but at the same time sufficient flexibility to employ qualified technical experts at matching remuneration levels and to develop its own program as needs arise, would be the best form of organization for a national advisory facility. The design and administration of the proposed Federal Targeted Program — explained below and in Paper IV — shares the same origin but might call for a more technical and legalistic mode of implementation, and a closer relationship with the political process of the Ministry.

**Paper III** proposes and compares four models for institutional arrangement for a national advisory facility: (i) a single-facilitator acting as the agent of the Federal Ministry in managing the program; (ii) a dual-facilitator model with the federal targeted program separated in a different stream; (iii) a State Research and Advisory Institute model, in which a much larger proportion of the substantial work would be done in-house; and (iv) a more direct arrangement in which the Ministry itself acts as the facilitator directly contracting packages of work. International examples are given of arrangements reflecting some of these different structural forms. Whichever solution is adopted, it is proposed that there should be a phased development, starting with a small team in the Ministry (though possibly headed by an experienced appointment from the research community), and gradually developing into whichever institutional format is preferred.

**Priority Advisory Assistance #2: Developing and disseminating toolkits for institutional and technical capacity building.** The proposed national advisory facility, once created, would need to provide immediate assistance to Russian cities. The first task that can be done with relatively smaller staff and limited funding is to collect, review, compile and disseminate good international and Russian practices by key subject area in the form of toolkits or technical manuals, and to disseminate them publicly through web-based publications and workshops. Key areas where toolkit development is urgent and necessary include (i) development of urban transport strategy and investment programs; (ii) enhancement of institutional and technical capacity of traffic management; (iii) review of the current condition of roads and establishment of road assets management systems to ensure effective distribution of resources allocated for the purposes of road maintenance; (iv) methods of alternative analysis of various modes of mass transit, including metro rail, BRT, and LRT; and (v) development and implementation of a city-wide parking policy.
4.3. Financial Support

**Priority Financial Assistance #1: Supporting pilot implementation of eligible projects for demonstration effects.** Federal government may choose to provide counterpart funding for carefully selected pilot projects—for instance, introduction of advanced traffic management systems including establishment of a traffic management authority, autobus procurement reforms, development of a city-wide parking policy, and development of modern mass transit corridors—that would have substantial demonstration effects. Not only would these pilot implementations demonstrate potential benefits of innovative urban transport measures, but also lessons learned during project preparation and implementation can be shared with other cities that are considering similar approaches.

**Priority Financial Assistance #2: Establishing a Federal Targeted Program, linking financial support with institutional and technical capacity development.** The rationale for Federal Financial Assistance is to improve sustainability of urban transport by encouraging a more strategic approach at the municipal level, improving project selection and results monitoring, and encouraging high impact reforms. Within that general framework, a range of grants—capital investment contributions, capital investment preparation grants, public transport franchise contract grants and technical assistance grants—are envisaged. In each of these categories Paper IV suggests a range of eligible activities and associated grant conditionality to ensure their contribution to sustainable policy development. It follows that simply filling gaps—for example, by periodic injections of finance for new buses—is not a credible objective.

Table 1 presents the results of benchmarking of urban transport systems in Russia and other countries, as well as proposals for implementation of essential reforms, provision of advisory support and undertaking investments with a view to achievement of specific institutional and functional objectives. Detailed sequencing of the recommended actions needs to be determined by the Federal Ministry of Transport, taking into consideration of the political constraints and available resources.

**Table 1: Road map for priority reforms, advisory assistance, and investments**

<table>
<thead>
<tr>
<th>Areas</th>
<th>International best practice</th>
<th>Challenges in Russian cities</th>
<th>Necessary Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Strategy planning and development of transport systems</strong></td>
<td>Availability of strategic plans for development of transport systems</td>
<td>No strategic plans for development of transport systems in practically all Russian cities, except the major ones</td>
<td>Designing of a strategy for transport system development – for all cities; Strategic planning of transport system development should cover the entire territory of metropolitan agglomeration; Provision of advisory support in the process of preparation of strategies for the development of urban transport systems; Provision of advice on alternative approaches to provision of transport services at the level of metropolitan agglomerations; Provision of advice on functions and possible institutional arrangements at the level of municipalities; Introduction of amendments into the legal framework governing matters related to territorial planning in order to ensure its consistency with the strategy for development of urban transport systems.</td>
</tr>
<tr>
<td>Areas</td>
<td>International best practice</td>
<td>Challenges in Russian cities</td>
<td>Necessary Actions</td>
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<tr>
<td>-------------------------------------------</td>
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<td>----------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Institutional and organizational arrangements</td>
<td>Structured policy coordination</td>
<td>Excessive division of policy and institutional responsibilities</td>
<td>Streamlining legal and administrative basis.</td>
</tr>
<tr>
<td>Fiscal and Financial Competencies</td>
<td>Predictable financial capability</td>
<td>Discretionary allocation, lack of predictability</td>
<td>Improving long-term fiscal sustainability. Adoption of a system for planning the use of allocated financial resources; Financing of initial costs associated with the establishment of modern traffic management centers; Support in financing of capital costs associated with the development of the transport sector and a new transport services procurement system; Targeted support in the development of electronic ticketing systems; Support in financing of initial costs associated with the establishment of the proposed federal information and analytical center for development of transport systems.</td>
</tr>
</tbody>
</table>

### Urban Transport Functions

<table>
<thead>
<tr>
<th>Mass Transit Development</th>
<th>High service quality and comfort, meeting the existing demand for transport services in order to provide a viable alternative to the use of private cars</th>
<th>Low service quality</th>
<th>Optimization of the existing operations which could potentially be financially viable; Mass transit development and system integration</th>
</tr>
</thead>
</table>

<p>| Public Passenger Transport                | The practice of holding strategic competitive biddings and ensuring commercial accountability of operators.                                                                                           | Low quality of services provided by traditional modes of transport (for example, municipal buses and trams). Lack of competition and wrong incentives. Inadequate legal framework | Targeted pilot programs for development of express bus or tram systems; Commercialization of municipal transport companies and consolidation of private operators in the conditions of growing competition; Provision of advice on the fare structure. Provision of advice on route network planning procedures; Provision of advice on organization of alternative competitive bidding systems. Introduction of amendments into the laws on competitive bidding (at the regional level); Preparation of initial drafts of contract documentation; Changing the legal status of municipal unitary companies involved in the provision of road-based public transport services. |</p>
<table>
<thead>
<tr>
<th>Areas</th>
<th>International best practice</th>
<th>Challenges in Russian cities</th>
<th>Necessary Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road Network</strong></td>
<td>The road network is adequate to fully meet the existing demand;</td>
<td>Lack of resources for financing all needed or economically justified investments into the development of road network are established; Modern methods of road maintenance are applied.</td>
<td>Substantial increase in the volume of road and bridge construction; Rapid introduction of automated traffic management systems in pilot cities; Review of the condition of roads and traffic management systems; Road design guidelines; Identification of priority expenditures and effective utilization of available resources; Introduction of amendments into the territorial planning regulations.</td>
</tr>
<tr>
<td><strong>Traffic Management</strong></td>
<td>As a core of municipal responsibility</td>
<td>Functional gaps and division of responsibility. Important functional gaps in the current legislation</td>
<td>Integration and improving interaction among government agencies; Introduction of advanced traffic management methods; Dissemination of best practices in the area of traffic management; Adoption of the Federal Law “On Traffic Management” providing greater authority and clarifying the division of responsibilities.</td>
</tr>
<tr>
<td><strong>Parking</strong></td>
<td>Adoption of measures designed to restrain, when appropriate, the use of motor transport</td>
<td>Excessive fragmentation of strategic functions and lack of coordination</td>
<td>Phased approach to the achievement of long-term objectives; Dissemination of best practices in the area of development of comprehensive parking strategies; Improvement of the legislation at the federal and regional levels; Clarification and increasing the powers of municipalities in the area of parking policy implementation.</td>
</tr>
<tr>
<td><strong>Road Traffic Safety</strong></td>
<td>Integration in traffic management policy)</td>
<td>Inadequate traffic management and road safety assurance systems</td>
<td>Technological upgrading of the road network; Improving the system of development of pre-project and project documentation in all constituent territories of the country; Improving the quality of design of traffic management systems.</td>
</tr>
</tbody>
</table>
## Air Quality Management

<table>
<thead>
<tr>
<th>Areas</th>
<th>International best practice</th>
<th>Challenges in Russian cities</th>
<th>Necessary Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Quality Management</td>
<td>Improved coordination with division of functions and responsibilities among federal, regional and municipal authorities in the area of regulation, monitoring and enforcement of environmental standards and mitigation of adverse environmental impacts.</td>
<td>High air pollution levels in cities; Lack of clear priorities and environmental policy tools.</td>
<td>Ensuring the right balance between norms and incentives; Increasing accountability for failure to meet the existing environmental standards; Development of methodology for assessing environmental damage.</td>
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</tbody>
</table>
PAPER I
DEVELOPING A STRATEGY FOR SUSTAINABLE URBAN TRANSPORT SYSTEMS
INTRODUCTION

This paper is first of a series of four, which together sets out a national framework to improve urban transport systems in Russian cities.

Urban transport issues in Russian cities are too complex and diverse to be addressed only by national level remedies; ultimately, city-level solutions are needed in order to tackle individual situations. Nevertheless, these four papers are written based on the assessment that national level interventions would greatly help cities solve their problems in several areas by eradicating barriers and creating enabling environment. First and foremost, before delving into area-specific proposals, it is critical to have a coherent and consistent general strategy that would govern the policies and actions both at the federal, regional and municipal levels. The purpose of this paper is to lay out such a strategy.

The other three papers follow logically from the analysis of this paper, each focusing on specific actions recommended to improve the urban transport systems in Russia: legal and regulatory reforms (Paper II), arrangements to emulate good practices and facilitate knowledge-sharing (Paper III), and arrangements to improve financing of urban transport systems in cities (Paper IV).

1.1. PURPOSE OF THIS PAPER

The purpose of this paper is to set out such a coherent framework for developing and implementing a sustainable urban transport strategy, based on the experience of European cities that have appeared most successful in this area, and to identify a range of possible actions that the Government of the Russian Federation, Ministry of Transport of the Russian Federation (MoT), as well as other ministries and entities can implement within that framework.

1.2. SUSTAINABILITY IN URBAN TRANSPORT SECTOR

Sustainability is a common, but often poorly defined concept. For the transport sector it is common to emphasize three different aspects of sustainability, social, environmental and economic1.

1.2.1. Social sustainability

There are several distinct aspects of social sustainability which are important in the urban transport sector.

First, the transport system must provide accessibility for citizens to the main categories of essential activity, such as work, education, shopping, health care, etc. And it should provide this for all citizens irrespective of their income, the location of their residence, or their personal situation. To achieve this degree of inclusiveness it may be necessary to pay special attention to transport provisions for the poor, and for those in more remote locations within the urban area. Historically this has been well provided for in Russian cities, though information on available service needs to be dealt with in a more comprehensive way in the Russian situation.

Second, transport must be affordable. Affordability is a slippery concept, as what is affordable to one person may not be to another. Inevitably, however, those who find transport least affordable are likely to be those with low incomes or special demands. While this has historically been well handled in Russian cities, the availability of public transport is deteriorating in many cities as the increasing proportion of the supply viewed as commercial has no obligation to honor reduced or free fare concessions.

1 World Bank (1996), Sustainable Transport: Priorities for Policy Reform, Washington, DC.
Third, urban transport needs to be safe and secure not just at the point of use, but for all citizens at all times. By international standards Russia in general has a poor road safety record so improving safety is an important dimension of social sustainability. A particular problem arises in respect of safety and security of the disabled, where the question is whether to impose standards of disabled accessibility on all service suppliers or whether to provided specific services for the disabled.

1.2.2. Environmental sustainability

In Russia cities, the main environmental issue concerns local air pollution. As with road safety, the record of Russian cities in respect of air quality is below the best international standards. However, there is some evidence to suggest that actions to tighten standards, both on industrial pollution and transport generated pollution, have improved the situation at the national level.

Figure 1.1. Gross Emission of Air Pollutants in Russia

![Figure 1.1. Gross Emission of Air Pollutants in Russia](image)

Nevertheless, further reduction of transport generated air pollution is an important objective. In the wider international community increasing emphasis is being put on the global warming consequences of urban transport provisions.

Traffic generated noise is also a large and growing problem in some Russian cities, with ambient noise levels even in residential neighborhoods substantially in excess of the norms of 55 decibels during the day and 45 at nights. In June 2011, the MosEco Monitoring organization reported that 50% of the complaints which it received related to noise.

1.2.3. Financial and economic sustainability

Financial and economic sustainability requires adequate resources to maintain, replace and expand capital facilities over the lifecycle of infrastructure. Without due attention to the physical condition of the stock of capital equipment used, the quality and eventually the quantity of service provided will deteriorate. Both the road stock and the public transport vehicle stock are considered to be in poor condition in many Russian cities.

While there are many provisions for universal accessibility which are cheap to introduce, (ramped curbs on sidewalks, proper grab bars and tactile strips in buses) and should be included in national standards, the more general question of how standards are to be set to get the most cost effective treatment of access, and safety for the disabled still remains.

Continuity and security of funding for asset maintenance is critical. Some previous federal targeted programs—characterized as emergency injection of federal money to fill financing gap in capital investments for replacement of obsolete public transport vehicles and traffic management equipment—addressed the symptoms of a financially unsustainable approach to asset replacement, but left the fundamental weakness uncorrected. An alternative, more sustainable approach is required to bring in fundamental improvements in how transport infrastructure and services are being paid for.

1.3. ASSESSMENT OF THE CURRENT SITUATION AND STRATEGY OVERVIEW

The sustainability of urban transport is a matter of growing concern in Russian cities. Road congestion is increasing the cities’ costs of business and damaging the viability of their economies, as well as wasting the time of citizens (Annex 2 provides the review of urban transport sector in the Russian Federation). That congestion arises from a combination of a very high rate of increase of car ownership and use with a road system which is often poorly maintained and traffic which is not well managed or constrained. Social sustainability is threatened by the poor quality of public transport, by increasing difficulty in maintaining the concessionary fares of disadvantaged categories, and by a road safety record that is among the very worst for industrialized nations. Environmental sustainability is compromised by air pollution from the increasing private vehicle fleet as well as by the age, condition, and outdated technology of many public transport vehicles. Underlying all is a failure in financial sustainability caused by the inadequacy of resources that cities have to provide necessary services.

The primary source of the road congestion problem is the continued high rate of growth of car ownership. This is accentuated by several institutional, physical and operational factors. They include (i) the lack of adequate road space, (ii) the absence of restraint on car use in congested parts of cities, (iii) inadequate road maintenance, and (iv) the lack of coordination in the city development, land use and transport services planning, as identified in the Concept of State Policy in the Area of Traffic Management.

Road congestion has adverse spill-over effects on to road-based public transport modes. This is because in most cases public transport is not segregated from the other road traffic, and hence, also subject to road congestion. Indeed, because of the need for buses to pull out of traffic at stops and regain a position in the traffic flow on restart, public transport vehicles tend to be even worse affected by congestion than private cars. As a result, the relative performance of public transport has deteriorated, and hence, accelerated modal shift to private cars and accentuated the financial problems of public transport operators. Due to weakening financial capability, many public transport agencies have not been able to replace their old vehicles or purchase additional ones as needed; several cities reported that this has made public transport even more unattractive many users. In other words, many Russian cities have fallen into a vicious circle, in which congestion deteriorates further instead of being self-correcting. International evidence shows that the levels of road congestion and of public transport performance and finance are very closely related. For example, the EU Urban Transport Benchmarking Initiative demonstrated that the public transport mode share of all trips was significantly higher in cities with metros than in those without (Figure 1.2.).

Increasing road congestion is not unique to Russia. The same process is incipient in all cities as incomes and car ownership increase. Among those cities, some better performing ones, which have well coped with the rapid growth of motorization and the consequent traffic congestion and environmental problems, have several policies and investment strategies in common. Their approach is first of all based on the recognition that it would be prohibitively expensive, if not impossible, to continue expanding the road capacity matched by the unconstrained growth of motorization. Some general characteristics of those cities, particularly those in Western Europe, are as follows: (i) they have a strong transport strategy and management organization—often at metropolitan rather than municipal level—responsible for integrated planning of all aspects of the transport system; (ii) the metropolitan authority typically has
adequate fiscal and financial competence to support its tasks; (iii) the metropolitan authority prepares a long-term strategy and identifies a set of actions and investments, consistent with its financial means, to implement the strategy; and (iv) the strategic focus is less on expanding road capacity, but more on mitigating congestion and associated environmental problems through better management and operation of existing capacity and demand-side measures, and improvement of all modes of public transport. Many Russian city governments and transport scientists understand both the problems and the ways in which they have been addressed in other countries.

Figure 1.2. Mode Shares for Cities with and without Metros

There are, however, important respects in which the current arrangements in Russia make it difficult to replicate what might be considered the best and most relevant of foreign experience. The issues fall in three categories. Institutional issues include jurisdictional and organizational, and financial questions. Sector policy related issues include the impediments to the development of best practice approaches to traffic management, demand management, infrastructure development and management, both for road network and mass transit systems, and public transport operations and regulation. Objective related issues concern environment and safety questions. Each issue is assessed in this Paper, with respect to (i) the lessons and good practices learned from better performing (mostly Western European) cities, (ii) the challenges facing Russian cities in trying to emulate that best practice, and (iii) a range of necessary actions which identified as necessary and feasible to improve the situation. These actions take three main forms: (i) legal reforms to make the changes possible, (ii) administrative actions to be taken by cities to implement the reforms, for which the Government of the Russian Federation will give advice through the creation of a National Urban Transport Advisory

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4 They include improvement of traffic management, management and/or restraint of the demand for the most congested road space, management of traffic in such a way as to limit its impact on the local environment.
Facility; and (iii) financial interventions by the Government of the Russian Federation to stimulate and promote the reforms, both through changes in the way in which resources are fed down from the federal government and through a program of pilot schemes.

The analysis results and elaborated proposal are presented in Table 1.6.

1.4. STRATEGY: PROPOSALS AND RECOMMENDATIONS FOR SUSTAINABLE URBAN TRANSPORT SYSTEMS BASED ON THE REVIEW OF INTERNATIONAL EXPERIENCE

1.4.1. Institutional and Organizational Arrangements

1.4.1.1. Good practice: Structured policy coordination

The basis for successful policy is always institutional. Successful municipal institutions start from setting a long-term vision and goals of city development, recognize the interactions among multiple, and often competing, policy objectives, and then address each problem—such as road network development, traffic management, and improvement of public transport performance—in a coordinated manner.

The first requirement is the creation of an organization with overall responsibility for planning and coordinating implementation of all the interacting aspects. Where a municipality is the center of a wider metropolitan region, it is common for a metropolitan organization to be formed. And these organizations are adequately funded and staffed.

The second requirement is an appropriate process of planning and implementation. Urban transport is an integral and essential component of any urban development strategy. Urban transport strategy in the best managed cities not only is characterized as: (i) being well integrated with other aspects of the city development strategy, such as land-use plans, environment policies, and economic development strategy, (ii) the planning process coinciding with the budgetary process, and (iii) the investment plans being constrained by available fiscal and administrative resources.

Effective planning and implementation requires consolidation of comprehensive strategic powers at one place, where plans are prepared and implemented and outcomes are monitored. The notion of the assembly of powers at the municipal or metropolitan level is derived from Western European experience and the judgments of the major western European Institutions over the last decade. For example, the European Committee of Ministers of Transport report on “Challenges to Implementing Sustainable Transport Policies” identified a number of impediments to successful policy formation, one of which is the absence of an integrated planning framework at the local or regional level5.

The European Union (EU) strategy for urban environment, recommends that every city should develop its own “Sustainable Urban Transport Plans”6 and set out the rationale for such plans. The EU strategy also gave some recommendations on the planning procedures. In 2010, the Directorate General for Internal Policies (DG IPOL) of the EU further reviewed some key experiences in selected European cities including Paris, Brussels, Vienna, Örebro (Sweden) and Kouvala (Finland)7. From the

5 ECMT (2002), “Challenges to Implementing Sustainable Transport Policies”, Paris. Other key impediments identified in the report are: (i) lack of a national policy framework, (ii) poor policy integration and coordination, (iii) unsupportive legal or regulatory framework, and (iv) inefficient or counterproductive institutional roles or procedures. The last is expanded onto (a) lack of ministerial coordination at the national level, (b) inappropriate degree of national government intervention in detail, and (c) the absence of an integrated planning framework at the local or regional level.


review, the DG IPOL drew main lessons that long-term vision, consistency in policy implementation, integration of sector policies, and good monitoring to secure public acceptance are critical factors of good urban transport plans. France and the United Kingdom require the preparation of such integrated plans by law; in other countries, they have been adopted for major cities without legal requirements.

In France, the requirement of local plans was introduced by the Loid’Oreintation des Transports Interieures (LOTI) law as early as 1982; the formation of a metropolitan level association and the establishment of a comprehensive strategy document is a pre-requisite condition for financial assistance by central government for urban transport programs. Similarly in the U.S., federal funding at metropolitan level is contingent on the preparation of a metropolitan transport plan and capital improvement plan. In the United Kingdom, every relevant sub-national authority has the responsibility to produce a 15-year strategy with a 4-year rolling implementation plan. First among Russian cities, the city of St Petersburg has chosen for a similar combination of a long-term strategy and shorter-term action plan, broadly following Western European practices. Common among the above frequently quoted good practices is a combination of the following:

• A long-term strategy statement that covers all modes and brings together all of the affected authorities where there is an overlap of interest;
• Engagement of civil society, including a wide range of non-governmental organizations in consultation about strategies throughout the strategy formulation process;
• A short-term implementation plan, including costs of implementation and selection of priorities for action;
• An annual budgetary process which reflects the plan, and
• A secure and largely predictable income stream to make the planning realistic and meaningful.

Successful integration of transport and land development can yield high social and economic dividends. Experience shows that when urban development is intimately tied to major fixed-guideway transit investments, the results are almost always positive: high ridership and environmental benefits, fiscally sound investments, and pro-poor outcomes. Cities that are well known for their sustainable policies, such as Curitiba, Singapore, Stockholm and Copenhagen, have succeeded in developing sustainable urban spaces by improving mobility and built environments in a synergistic way.

1.4.1.2. Challenges: Overcoming weaknesses in policy coordination

The fundamental institutional problem for urban transport in Russia is the absence of adequate coordination of technical policies. It has been characterized as “consideration of transport safety and environmental sustainability as independent, purely technical, problems without their coordination with the general tasks of transport management”. This paper identifies the following general characteristics that make it difficult for Russian cities to emulate the western European experience:

• The municipalities typically did not have enough control of all relevant functions to develop a comprehensive transportation plan;
• They did not usually have a central function capable of developing a comprehensive and coherent transport strategy that covers all elements. Rather, the responsibilities are distributed among departments and agencies that are usually mode-specific (roads, autobuses, metro, etc.); and
• They did not have a secure or predictable budget—only about 30% is under their direct control and 70% is obtained from the region on an unpredictable “bid and negotiate” basis.

Responsibilities relating to urban transport lack adequate coordination in four main ways.

First, the planning of the spatial activities that generate transport demands does not appear to be well integrated with the subsequent planning of the transport systems. This highlights flaws and weaknesses in the City Planning Code. On the one hand, the Planning Code does not make adequate

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provision for ensuring that the transport links—particularly the road links—provided for are adequate in quantity and structure to handle the traffic generated. On the other hand, the planning norms in respect of parking provisions appear to be based on an implicit policy of providing for unrestricted motorization. This contrasts with transport policies in many countries that have increasingly recognized that this is neither sustainable nor achievable, and that strategic use of parking control is an effective instrument to achieve a balanced and sustainable system.

Second, there is a lack of connection between the administration of public transport and the rest of urban transport issues. This has long historical roots. The term “urban transport” in Russia is commonly interpreted exclusively to mean public passenger transport. While the formal responsibility for passenger transport within city boundaries rests primarily with municipal governments, Federal Law No.196-FZ assigns responsibility for traffic to the regions. Given the lack of funds and capabilities at the municipal level it is quite understandable that some regional governments believe that the functions are more efficiently performed by the regional administration which currently has greater competence, and can take advantage of some economies of scale. Other functions relating to urban transport, for example taxi regulation, are also exercised at the oblast level rather than at the municipal level. Concerning road safety, executive bodies of the subjects of the Russian Federation are responsible for traffic safety on regional and inter-municipal roads, while according to paragraph 4 of Article 6 of the same law, bodies of local self-government at the level of urban districts are responsible for traffic safety on local roads within the boundaries of urban districts.

The ownership of the physical facilities, such as traffic signals, is similarly divided, with some belonging to the federation, some to the region and some to the municipality. Much traffic management equipment, being treated as concerned with safety, is funded through the Ministry of the Interior. As the municipality cannot contract works on federal facilities, this inhibits the development of integrated traffic signal programs. While the federal government is passing down its ownership of urban transport facilities to the regions, it unfortunately still remains a matter for the regions as to whether they are passed on further to the municipalities. It is impossible for municipalities to plan comprehensively for all the interacting elements of the urban transport system when only some of them are formally the municipal responsibility.

Third, within the municipality, the functions and responsibilities in transport sector are often split among different agencies (departments) and committees. Land-use planning and development control is usually the function of a department of Architecture and Urban Planning, part of the traffic management function lies with the police, road construction is usually in a construction department. This might not matter if there were a transport strategy unit charged with coordinating these functions. In some cities, as in Tyumen, a Transport and Communications Department manages public transport and traffic management, and has a specific transport policy function, but this is not usually the case. For example in Lipetsk, where the Architecture and Urban Planning department appears to be charged with the coordination function, it appears that the emphasis is on physical spatial planning and not on operational and management policies. Strategic planning, as practiced in the better European cities, often appears to be absent.

Fourth, some specific problems arise in cities which are the center of a rather larger, metropolitan, catchment area. In these circumstances some cities believe that it would be more efficient if their municipal transport services could be extended through the whole of the catchment area and protected from being undermined by services given permits by the region to operate into the city.

1.4.1.3. Necessary actions: Streamlining the legal and administrative basis

The four main areas of institutional weakness all need to be addressed.
First, an integration of spatial (land-use) planning and transport policy development needs to be pursued, preferably as a legal or regulatory requirement, supported by inter-ministerial collaboration. While this is very difficult to do as many cities around the world have experienced, the starting point can be to give a broader definition to urban transport, covering all of the interacting responsibilities and facilities located together at the municipal level. What is required is a better iteration between the steps of land-use planning and those of transport policy development, with continuous feedback from each to the other. Land-use planning performs very wide functions and cannot and should not be made subservient to transport policy issues. But the City Planning Code needs to be revised to ensure, first, that there are adequate traffic impact analyses associated with all new developments and, second, that the planning norms for parking are consistent with the prevailing transport strategies on parking. This requires a close collaboration between the Ministry of Regional Development, which is responsible for the execution of the City Planning Code, and the Ministry of Transport, as well as regional governments and municipalities. This might also be provided for by requiring that the relevant transport department of the city be consulted on these two issues and "sign off" on these elements of land use controls before new developments are approved.

Second, action is needed to strengthen the role of municipalities. On the basis of the review of international experience, this paper concludes that further concentration of both powers and resources at the municipal level is desirable if Russian cities are to develop comprehensive sustainable urban transport strategies. At first sight, this would appear to necessitate the revision or replacement not only of Federal Law No.131-FZ, but also of various other laws that assign individual functions, though such a reassignment of primary responsibility should not exclude the possibility of implementation of a function, such as traffic signal maintenance, being contracted out or delegated to a regional authority. It is recognized, however, that a constitutional reform formally transferring powers to a third level jurisdiction is unlikely to be undertaken as a result of concerns arising in a single sector. It is therefore proposed that a number of less revolutionary, but still quite radical, alternatives be considered. These include the following:

- Moving to a more predictable formula based procedure for transferring funds down from the federal government to the regions and from the regions to the cities. This should cover all but major infrastructure expenditures which should continue to be justified on a case by case basis. But even for these it might be sensible to set out – in advance – the criteria on which decisions would be made;
- The encouragement to strengthen municipalities or to create metropolitan authorities where appropriate—already permitted by the constitution—by federal grants, to be automatically passed through to the municipalities by the recipient region to municipalities or metropolitan areas which have developed and approved long term transport strategies and plans;
- Establishment of new local taxing powers under the budget code for those authorities that have developed appropriate plans (similar to the French “versement transport”).

Third, measures are needed to create or strengthen an integrated transport planning and strategy function, most likely housed in a dedicated city transportation department. This department would be responsible for various function, mainly city-wide transport planning (consolidating and prioritizing various plans from different sub-sectors such as roads, buses, metro, etc.), public transport regulation, traffic management, and parking planning and regulations. This department would need to coordinate with the city-planning and/or architecture department according to specific procedure suggested above in this Section. While this approach is to some extent contingent on the solution of the second issue, the current arrangements do not suggest that proper strategic transport planning will necessarily take place even if all of the powers were assigned to the municipality. Many cities that have very small central staffs with no individual or group charged with coordinating activities in accordance with a strategic plan will need encouragement and assistance to develop that capability. This might be

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10 Reasons for the difficulty may lie, in addition to the institutional disaggregation, in the distinctive characteristics of transport and land use planning and its implementation. In many cities, spatial planning is viewed and handled very differently from transportation planning, with respect to objectives, techniques, scale of attention, implementation, funding and administrative power, as well as in the time dimension.
attempted by a combination of central advice (on how to do strategic planning) and financial inducement (by a targeted program of assistance to cities in setting up strategic planning functions). Payments to the cities could be made conditional on the city demonstrating a willingness to re-organize to undertake the necessary planning.

**Fourth, action is required to stimulate collaboration between region and municipality.** This could be done in two ways. First it should be made explicit and mandatory that any services crossing a municipal boundary must have permits from both the regional and the municipal authority. Second, it should be made explicit that collaboration to address transport issues on a metropolitan level is legal, and that a body voluntarily formed in this way should be eligible for funding from the region in the same way as a unitary municipality is.

**The focus for these various levels of coordination is the municipal or metropolitan strategic transport plan.** The municipal or metropolitan transport plan occupies a central position in recent policy development in western European cities. The fact that the development of such a plan is not envisioned by current the legislation of the Russian Federation is a critical impediment to the development of sustainable urban transport strategies.

### 1.4.2. Fiscal and Financial Competence

#### 1.4.2.1. Good practice: Predictable financial capability

In order for a strategic planning process to be effective, a municipality needs to have sufficient knowledge of and control over the flow of funds. In better performing cities, local taxation powers are generally greater than in Russia: property taxes are often a municipal level tax and local authorities have the power to set the rates and hence impact on its revenues. Tax revenues are supplemented by revenues from parking charges and in some cities, such as London, Stockholm and Milan, from congestion pricing revenues. Furthermore, inter-governmental transfers are only partly earmarked and partly go to the cities in the form of a formula-based block grant which gives the municipality the power and flexibility to set its sectoral priorities.

In well managed cities, a strong link between planning and the allocation of fiscal resources is what makes a transport plan not just a wish-list, but a clear and implementable blueprint. The existence of a connected structure of a long-term strategy, a medium-term action program and the annual budgetary process is central to that. Regardless of whether cities raise their own revenue directly or are dependent largely on inter-governmental transfers, the essence of fiscal and financial competence is the ability to predict both available revenues and desired expenditures with a high degree of confidence and to be able to adjust the patterns of expenditure in a controlled way consistent with the overall strategic objectives.

#### 1.4.2.2. Challenges: Creating a secure fiscal base for urban transport

In Russia the financial capability of the municipality, which has the formal responsibility for urban transport, is weak. Only about 30% of the municipal budget comes from the city’s own sources, such as land tax, part of personal income tax, and municipal trading revenues. The rest comes from federal and regional resources through a procedure which involves an annual request and negotiation procedure. This lack of secure and predictable revenue severely constrains the incentive for the municipalities to engage in longer-term planning and budgeting.

Financial insecurity cascades down through the system. Municipal public transport companies rely on the city to finance vehicle replacement, while the city relies for money for this purpose either on its annual request to the region or on the even less regular and reliable source of targeted grant programs.
The result is that the quality of municipal public transport suffers. The challenge facing Russia is thus to develop a more secure and predictable funding arrangements for the municipalities on the basis of which they can plan strategically and implement their plans consistently.

1.4.2.3. Necessary actions: Improving long-term fiscal sustainability

The first sustainable possibility for improving the situation is to increase the direct revenues of the municipalities. Some of the reforms that are proposed later in this paper for other reasons will also have beneficial financial effects for municipalities: both charges for on-street parking and congestion charges for road use can generate substantial revenues for a city. The law needs to make it clear that such charges are viewed as municipal trading revenues to accrue directly to municipalities, not taxes to accrue to the general revenues at the oblast or federal level. It should also be possible, if cities so wish, to earmark revenues from charges on transport to expenditures in the same sector. That is the basis on which congestion charging scheme in London and the “versement transport” in France have become politically acceptable in these cities. The citizens understood that what they paid for was used to reduce congestion through improved transport systems, in other words, that they were getting back what they paid for.

The second requirement is to improve transparency of inter-governmental transfers, which may be more difficult to achieve, but is worth considering. Much of the insecurity of municipal governments arises from the discretionary basis on which funds are allocated to them by the federation government, and more directly, by oblast governments. That damaging insecurity could be significantly reduced if a significant part of the funding which passes on to them were put on a more transparent basis. This might be achieved in two different ways. The first would be to introduce a pure formula-basis under which oblasts allocated the majority of funds to municipalities on a formula reflecting the basis on which funds were needed (kilometers of road, population, etc.). A second possibility is to require that the allocations should be based on a counterpart funding agreement between the subject of the federation and the municipalities in accordance with a long-term strategy and agreed medium-term expenditure program of the municipality. This would give a strong incentive to the cities to engage in sensible and fiscally responsible long-term planning.

Occasional targeted federal programs to replace capital assets treats the symptoms of a general system failure, rather than addressing its fundamental causes. For this reason, if the aim of the federal government is to improve the sustainability of the system, it should be very cautious in funding bus replacement. Only if the direct financial intervention is part of a broader program to improve system sustainability, should it be the selected instrument for assistance.

1.5. STRATEGY: PROPOSALS FOR DEVELOPMENT OF URBAN TRANSPORT FUNCTIONS BASED ON THE REVIEW OF INTERNATIONAL EXPERIENCE

1.5.1. Road Network Development

1.5.1.1. Good practice: Cost-efficient management of a very large physical investment

The urban street system is typically by far the largest physical asset owned by Russian municipalities now that housing is largely privatized. The road network in mid-sized to larger cities can be several hundred lane-kilometers in length and can be worth several billion rubles in fixed investments. Beyond the road pavement and associated sidewalks and driveways, the urban street system typically contains substantial fixed investments in drainage facilities and underground and above ground utilities. Cities that have successfully managed their road network have long recognized that funds are limited and roads are expensive to build. Instead of focusing on new constructions, many cities have accordingly
put into place good road management and transportation planning practices to maximize the use of available resources and to strategize their investments. These practices have included: (a) implementing computerized road management systems that establish a sound basis for determining priorities for road maintenance and rehabilitation of the existing road system; (b) undertaking comprehensive land-use and transportation planning and programming to establish investment priorities and timetables for new road links and major improvements to existing links; (c) utilizing road contracting measures for road maintenance and rehabilitation that increase the efficiency of available funds; (d) recognizing that pedestrians and cyclists are also important users of the road network whose access and safety needs special attention; and (e) introducing regulations that require developers to fund or provide appropriate road development that is needed as a result of new land developments.

1.5.1.2. Challenges: Developing the road network under fiscal constraints

The rapid increase in motor vehicle ownership in most cities is placing substantial additional challenges in terms of maintaining this system, upgrading the traffic carrying capacity of existing road links, and in providing extensions to road system\(^\text{11}\). Many cities are struggling to adequately maintain the existing road network, not to mention adequate resources for selectively upgrading existing road links or for making investments in new streets in response to increased traffic and new land developments. The net result in many municipalities has been a protracted under investment in road maintenance resulting in deterioration of these networks. As a result of this deterioration, even more costly road rehabilitation or complete reconstruction has been required to keep urban road networks in acceptable condition.

These conditions have been acerbated by the current funds transfer arrangements (as set out in Section 1.4.2 of this paper) under which municipalities need to annually negotiate for road funds from oblast authorities making it difficult to commit to longer-term road maintenance and investment plans. Many municipalities do not have in place adequate data on road conditions and traffic, and most have no computerized analysis of available data on which to directly take into account vehicle operating costs, unit costs of road works, and pavement strength and condition over the entire road network. Consequently, most municipalities are not able to develop an optimum road network maintenance strategy, i.e., the set of interventions (and related budget) that would minimize the total road maintenance and rehabilitation expenditures in the city.

The lack of up to date comprehensive urban transport strategies and plans to guide new road development in many municipalities accentuates the problem. Beyond the road network links under the jurisdiction of city governments, there are regional and national dedicated road links within most municipalities which are not the responsibility of the municipalities to maintain or improve. Since these road links are often critical elements of the municipal road network, it is important to ensure that coordination among these three levels of government is attained in maintaining and enhancing the overall urban road network.

1.5.1.3. Necessary actions: Maximizing the impact of available financial resources

To address the challenges of maintaining and enhancing the municipal road system within available financial resources, a number of measures should be implemented by municipalities supported by both oblast and federal authorities above and beyond the important fiscal measures described in Section 1.4.2 of this paper. These measures are as follows:

**Conducting road condition surveys.** To maximize the efficiency of expenditures on road maintenance and rehabilitation, it is important for all municipalities to have current information on the road conditions and on the composition and volume of traffic on all city streets for the purpose of making informed decisions on road maintenance and rehabilitation. This information should be stored in a suitable

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\(^{11}\) Between 1993 and 2007 the Russian passenger car vehicle fleet increased from 11.5 million vehicles to 29.4 million, an increase of 155% or about 7% annually over this 14 year period. Most of this growth has occurred in urban areas.
computerized database that can be shared among city committees as this information will be useful for traffic management and public transport purposes as well. Beyond storage of road condition and traffic information, this database may be expanded to include other road asset information within street rights of way such as storm drainage, sidewalks, street lighting, and the utility mapping and condition of utilities. The database should be continually updated and enhanced to ensure that it serves policy and decision-making purposes. Guidance from the proposed National Urban Transport Advisory Facility (see Paper III) would be helpful in establishing guidelines for conducting road condition surveys.

**Utilizing computerized road management tools.** Beyond collecting and maintaining road condition information, municipalities need to implement good road management systems to make the best informed decisions on maintaining and rehabilitating the existing road system. A key element of such a system is a computerized prioritization method that provides guidance on establishing the relative priority of road segments to be maintained based on pavement strength and condition, traffic volumes by vehicle type, vehicle operating costs, and unit cost of proposed road works. Among the modern commercialized road management tools are HDM-4 and RONET\(^1\). Through applying these tools municipalities should be able to determine (a) the optimum road network maintenance strategy and the related budget; (b) the impact of different funding levels on the future quality of the city’s primary and secondary road networks; (c) the economic consequences of budget constraints; and (d) a five-year work program for the most likely budget scenario(s). The Proposed Federal Assistance Program (see Paper IV) could provide financial assistance to municipalities in funding the implementation of computer based road management systems in several cities on a pilot basis. The Transport Advisory Facility might additionally provide technical guidance to municipalities in managing these systems.

**Prioritizing proposed new road investments on the basis of economic feasibility, and in accordance with comprehensive transport strategies.** Careful selection of new and enhanced road links in response to increased travel demand and new land developments is particularly important given the limited financial resources available for all transport investments. These new road investments are likely to be costly and should be made within the framework of a comprehensive urban transport strategy and transport investment program. Every substantial road link improvement should be subjected to a careful and standardized assessment of cost-benefit ratios or economic internal rates of return. As indicated in Section 1.4.2 of this paper, requiring the adoption of an agreement between the municipality and the higher level subject of the federation (oblust) of a long-term transport strategy and medium-term expenditure program should be an important incentive to ensure rational investment in the road network.

**Upgrading functional road classification and urban road design guidelines.** The most common practice is to classify street segments based on their intended functions\(^1\). A function-based classification provides clear guidance to municipal officials with respect to the appropriate design standards, investment priorities, and associated access controls to the roadway. This classification system may also be useful in terms of establishing investment priorities for road maintenance and capacity improvements. In parallel to revisiting the current classification, it will be appropriate to review and update urban road design guidelines and design options in relation to the functional classification of road links. The Transport Advisory Facility should assume the lead in upgrading the functional road classification system and urban road design guidelines. This facility might additionally provide assistance to a few pilot cities in applying this classification system and road design standards.

\(^{12}\) World Bank (2009), “Road Network Evaluation Tools”, is available at www.worldbank.org/transport. RONET, developed by the World Bank, is designed to assess the current characteristics of road networks and their future performance depending on different levels of interventions to the networks. RONET Version 2.00 implements three evaluation modules: (i) Current Condition Assessment Module that computes network statistics and monitoring indicators, (ii) Performance Assessment Module that estimates the network performance and budget requirements under different maintenance and rehabilitation standards, and (iii) Road User Revenues Module that evaluates revenues collected from road user charges and compares them with the funding requirements. RONET version 2.0 is structured with many configuration options and was fully released in January 2009.

\(^{13}\) The most common road classification for urban areas is based on the intended function of the roadway within the city – typically distinguishing between principal arterial (typically for high volume, high speed and longer distance travel within urban areas with no land access function), secondary arterials (also serving to accommodate high volume in-city traffic), collector streets (serving to collect traffic from local roads within city districts and to deliver it to arterial roads), and local roads (lower speed and lower volume roads serving principally to provide access to abutting land uses).
Implementing improved road maintenance practices. While many municipalities rely on in-house resources for maintenance of the road system, international experience has shown that competitively contracting out road maintenance and rehabilitation can be more cost effective. Cities that are not contracting out this service should be advised to consider this practice. One option would be to contract out increasing portions of the road network maintenance/rehabilitation over time. Beyond contracting out this service, experience has shown that much can be done in terms of contract provisions and contract management for ensuring the most cost efficient methods for maintaining the road network. For example studies to define the scope of road rehabilitation and maintenance, including (a) a survey of road condition, (b) traffic studies, (c) definition of the intervention level (e.g., pavement maintenance or rehabilitation), and (d) the required budget for each road segment, should be undertaken prior to tendering road maintenance contracts rather than including these tasks under the awarded maintenance contract. This approach provides a more objective means to evaluate the bids and award the contract to the best bidder. The Transport Advisory Facility could provide guidance through preparing sample terms of reference for road maintenance and rehabilitation contracts.

Introducing performance-based contracting (PBC). The PBC method is widely used in the UK, France, Australia, New Zealand, the Netherlands, Sweden, Norway, Finland, and several states in the US and Canada. Most countries that are practicing PBC have achieved substantial reduction of maintenance cost by a minimum 10 percent up to 40 percent (Table 1.2). In addition to reduction of road maintenance cost, there are several well-known advantages of PBC over traditional input-based contracting. First, PBC enables better control of results of works, as payment to the contractor is explicitly tied to the road condition. Second, by using PBC the public sector can reduce fixed costs as there is no need to keep the in-house staff doing the maintenance work. Third, predictability of payment improves because there is practically no risk of variation orders. Finally, the PBC method aligns well with the proposed computerized road management tools. Management of performance-based contracts requires same set of skills in the road sector staff, i.e., condition monitoring, and supports investment decision-making that is based on scientific measurement of road conditions.

Table 1.2. Cost savings of PBC relative to conventional contracts in selected countries

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost savings</th>
<th>Country</th>
<th>Cost savings</th>
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<tbody>
<tr>
<td>Norway</td>
<td>About 20-40%</td>
<td>Australia</td>
<td>10-40%</td>
</tr>
<tr>
<td>Sweden</td>
<td>About 30%</td>
<td>New Zealand</td>
<td>About 20-30%</td>
</tr>
<tr>
<td>Finland</td>
<td>About 30-35%</td>
<td>United States</td>
<td>10-15%</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>About 30-40%</td>
<td>Ontario, Canada</td>
<td>About 10%</td>
</tr>
<tr>
<td>Estonia</td>
<td>20-40%</td>
<td>Alberta, Canada</td>
<td>About 20%</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>Minimum 10%</td>
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It is recommended that this form of contracting should be first be tested on a pilot basis in selected municipalities, and conditional on a positive outcome, the selected cities might utilize the PBC approach over a wider portion of the road network. By introducing PBC under which the contractor is paid on the basis of the result of the work (e.g., road condition) instead of the inputs (e.g., materials and labor used), the city should be able to reduce road maintenance costs while transferring risks to private contractors. For this to happen, the changes in the Federal law on public procurement will be required.

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14 A performance-based contract (PBC) differs significantly from a method-based contract that has been traditionally used to maintain roads. In traditional method-based (unit rate) contracts, the road agency as a client normally specifies techniques, technologies, materials and quantities of materials to be used, together with the time period during which the maintenance works should be executed. The payment to the contractor is based on the amount of inputs (e.g., cubic meters of asphalt concrete, number of working hours). In PBC the client does not specify any method or material requirements (provided the city’s standards are met). Instead the client specifies performance indicators that the contractor is required to meet when delivering maintenance services. For example, the contractor is not paid for the number of potholes he has patched, but for the output of his work: no pothole remaining open (or 100% patched). Failure to comply with the performance indicators or to promptly rectify revealed deficiencies adversely affects the contractor’s payment through a series of clearly defined penalties.
as the current law does not allow application of the PBC method. The Transport Advisory Facility could provide assistance to cities by drafting appropriate PBC contracts and by offering guidance to cities in implementing and managing PBC contracts.

**Introducing street development requirements for developers.** Many municipalities have no provision for requiring developers to provide adequate road links in conjunction with new land developments or to upgrade existing road links where new land development requires an increase in traffic carrying capacity. As a result many municipalities are obliged to provide these improvements or, if unable, road traffic conditions deteriorate. Developers should be required to either provide prescribed road improvements or payments to the municipality in lieu of making the improvement. These requirements should be based on well designed development impact assessments. The Transport Advisory Facility could be of considerable assistance here in developing sample development assessment and developer requirement guidelines. The Facility could also provide assistance to selected municipalities in implementing development assessments and the regulations.

**Metropolitan Road Planning.** Many urban areas are expanding outward well beyond their existing administrative boundaries of the principal municipality, and these outlying areas are likely to absorb ever increasing shares of metropolitan growth. For this reason, larger municipalities experiencing this phenomenon should consider placing more emphasis on metropolitan planning and coordination for maintaining and developing the road network serving the metropolitan area. As indicated in Section 1.4.1 of this paper, steps should be taken to (a) advance cooperation between the principal municipality and the regional authority for road development or (b) create a separate metropolitan entity.

1.5.2. Traffic Management

1.5.2.1. Good practice: Traffic management as a core municipal responsibility

**All successful cities have strong traffic management units with broad responsibilities.** Well designed traffic engineering, control and management of freight traffic, control over the location and availability of both on-street and off-street parking, combined with good road marking and signing, linked traffic signal systems and other intelligent transportation systems such as motorist information signing all help traffic to flow more smoothly\(^{15}\).

**The functions of the traffic management units are usually broad and strategic.** Where it is the policy of the city to encourage use of public transport, the traffic management unit can give effective priority to public transport both in intersection design and in signal system settings. Moreover, long-term planning and design of the traffic management system—particularly ITS applications—inconjunction with land use and road network planning contributes to the efficiency of the system as a whole.

**Safety is usually a central responsibility of the traffic management unit.** This would include covering traffic engineering design, particularly at intersections, speed control, signaling and road marking and street lighting. While the police may collect accident statistics, it is usually the duty of the traffic management unit to analyze those statistics and to design measures to improve road safety. Again good practice treats this as a matter of priorities. Maintaining a safe and comfortable environment for pedestrians may require more frequent signal controls for crossing roads at grade, and lower priority on high speed (as opposed to regularity of flow) of vehicles in areas of high pedestrian density. While the police enforce the law, and are consulted on the practicability of designs, they are not the primary authority responsible for road safety.

\(^{15}\) ITS has a much wider relevance to urban transport than this is. It includes applications in public transport fare systems, where ticketing information can give real time information on service planning needs and in providing information to improve the convenience of both road and public transport systems to users. A well designed system can link information from various systems. As part of the present exercise terms of reference are being prepared for the development of a national framework and architecture for ITS in transport so that the maximum benefit can be achieved from its application.
Freight traffic in urban areas is adequately controlled to reduce congestion, emissions and noise pollution, while benefiting the citizens. Many cities provide by-pass roads for through traffic, sometimes supported by bans on movement within the outer ring for traffic without a legitimate destination in the city or by prescribed lorry routes within the city. Direct limited access connections from national motorway systems to ports have a similar effect. For terminating traffic, which is destined to the city, controlling and management should be more carefully designed, so efficient flow of goods can be ensured. Commonly used measures are as follows: (i) controls on vehicle sizes, where the problem of congestion is caused by very large vehicles unsuited for narrow city streets, (ii) shifting locations of manufacturing and warehouse activities and retail distribution centers to the periphery of the city, supported sometimes by provision of public transport servicing agglomerated shopping areas, (iii) controls on distribution systems, including establishment of peripheral depots at which goods are transshipped and consolidated into acceptable vehicles for the inner city, which often requires collaboration between firms to develop a sustainable distribution strategy, (iv) restrictions on journey timing for trucks, which aim to mitigate disturbances caused to traffic and residents by heavy vehicles and loading/unloading activities, and (v) development control that requires retail establishments to provide off-street loading/unloading facilities and other appropriate access infrastructure.

The necessary implementation assets, particularly traffic signal and other ITS systems, are also owned and managed by the strategic authority. The police responsible for enforcement and prosecution of moving traffic offences and consulted on traffic management system design. But the design itself and system implementation is the task of the civil traffic management unit. And the enforcement of parking restrictions is also usually managed by a civilian force reporting to the traffic management function.

1.5.2.2. Challenges: Functional gaps and separation of responsibilities

The traffic management function appears generally to be narrow and weak in many Russian cities. Traffic signal systems in many cities are in poor condition, are often rather primitive with limited timing plans and are uncoordinated. Other advanced Intelligent Transport System (ITS) elements such as motorist information systems, systems assisting public transport operations, and traffic enforcement system such as red light and speed cameras are not installed. In medium-sized cities, functions related to road safety and public transport priority are not usually carried out.

This problem is partly institutional but also partly a matter of limited and inadequate skills in the public administration. As discussed in Section 1.4.1.2. above, traffic management has historically been viewed primarily as a police function related to safety. While that has changed somewhat recently, only in the larger cities such as Moscow and St Petersburg has this resulted in the development of a more comprehensive traffic management function at the city level. Of the next level of cities only a few have established a sufficiently strong traffic management organization.

Russian experience shows that improved traffic management organization can yield great benefit. Since the creation of a Road Traffic Management Unit in Novosibirsk in 2006, the unit has been responsible for coordinating the actions of various units concerned with the implementation of organizational, legal and technical measures in the area of road traffic management, as well as the

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16 Low Emission Zones, from which high polluting vehicles are excluded, exist in London, Rome, Madrid, Paris, Copenhagen and several Swedish cities. Enforcement can be assisted by charging systems. In Milan, the road pricing in the central area is designed to discourage polluting vehicles by differentiation in the charges levied.

17 In many Dutch cities, this measure has been very effective in reducing truck traffic in the center.

18 Distribution centers established and organized by the public sector (e.g., municipal governments) were popular in the 1980s, especially in Germany, but have declined since. Only those which have a single agency controlling the whole supply chain—as in the case of Heathrow Airport in London—have survived. That suggests a more collaborative, free market approach to the issue. In the UK, Freight Quality Partnerships (FQPs) are promoted to secure collaboration between firms to develop a sustainable distribution strategy. Information technology has a role to play in the development of such transshipment systems, with GPS, tracking systems, route planning software, and electronic data interchange (EDI) contributing to a more efficient distribution pattern.
Analysis of the causes of traffic related accidents and the promotion of measures for improving road safety. It has introduced an automated road traffic management system and achieved an increase of average travel speeds of 15-20 percent while at the same time re-organizing speed limits and speed controls. Accidents involving fatalities or serious injuries are estimated to have fallen by 18-20 percent in a two year period.

1.5.2.3. Necessary actions: Integrating and strengthening functions

The first necessary change is the assignment of primary responsibility for traffic management to the municipal administration, to be part of an integrated policy rather than a separate technical function. Associated with this location of primary responsibility should be the establishment of a well-staffed Traffic Management Unit (TMU) within the city administration, as in Moscow, or more recently in Novosibirsk. The TMU should address all aspects of traffic policy from a viewpoint established in a strategic transport plan, including setting out a traffic management policy, carrying out traffic research, devising and implementing traffic management plans, installing and managing traffic control devices, establishing traffic regulations including those on freight traffic, and so on (Annex 5 provides more detailed guidelines on the establishment of a TMU).

The federal government can assist this process. It can help finance the set-up costs of new traffic management capabilities through programs targeted at cities aiming to reform their approach to traffic management. This might include investments in modern signal systems and a range of other ITS measures, as long as they are linked to other aspects of transport strategy through an approved strategic plan. Through a central advisory function it can disseminate best practice in traffic management organization and practice. And it might also approve and support development of training in the state-of-the-art traffic management through targeted programs.

1.5.3. Demand management

1.5.3.1. Good practice: Calculated restraint

Most large and medium sized western European cities recognize that they cannot provide enough road space to permit unlimited private vehicle access to central areas. Traffic management units are therefore charged with responsibility for design and implementation of demand management strategies. In parallel with this, in recognition of the political unpopularity of restraint of private car movement without the provision of any viable alternative, there is usually a program of public transport improvement (discussed in Section 1.5.4).

In most medium-sized cities, parking policies are used as the primary instrument to restrain private car traffic in congested areas. A demand management oriented parking strategy involves planning the quantity, location and pricing of all publicly available parking facilities, including parking on street. The benefits of charging for on-street parking are three fold (1) freeing up space for moving vehicles, (2) improving traffic conditions by reducing travel of motorists “hunting” for spaces, and (3) encouraging the greater use of public transport in congested areas with limited parking. The revenues generated are an additional attractive feature. Hence, the imposition of payment for on-street parking is considered an appropriate policy even where it is not felt politically acceptable to pursue an explicit policy that suppresses private car trips.

Efficient civilian implementation of parking policy is essential. As police resources are limited, and need to be devoted to dealing with criminal activities and safety related issues, implementation and enforcement of parking policies is usually undertaken by civilians, either employed by the authority or by private firms contracted to run the parking system. These agents are empowered to issue parking tickets for offences and to tow away or immobilize illegally parked vehicles. Prosecution is normally through the ordinary court system if demands for payment of fines are not met.
Other possible instruments of restraints includerestrictions on the use of private cars on specific days of the week. This device is used in many developing country cities, but not much in Europe as this restraint can be evaded through the ownership of a second car with a different number plate. In the long term it has perverse effects both on the level of car ownership and the age profile of the car fleet. But in the short term it has been effective in some cities such as Mexico City, Sao Paulo, and Bogota. More recently a number of European cities such as London, Milan and Stockholm, have used direct road charges. While this is an instrument which is generally thought more appropriate for very large cities, it should be noted that the population of Stockholm is similar to Yekaterinburg and less than Novosibirsk.

1.5.3.2. Challenges: Lack of focus and well balanced policy

Demand management does not appear to play any part in the strategy of most Russian cities. This is often a matter of philosophy, with the emphasis still given to accommodating whatever traffic demand arises. This arises partly as a result of the absence of any comprehensive transport planning exercise which could show, through transport modeling, what would be the likely outcome of different road investment and other transport policy instruments. In most European medium and large cities these analyses have shown that it is not physically or financially feasible or both to accommodate unrestrained motorization without serious road congestion and its attendant environmental impacts. In Russia, demand analyses are the basis on which a more comprehensive urban transport strategy is being established in St Petersburg. That strategy, while including some important road investments to by-pass the city center, recognizes the need for a shift from private to public transport for journeys to the central area during the peak hours. And a policy to achieve such a shift needs to include both supply- and demand-side measures; specifically, such measures are permissible only after significant improvement of public transport. This measures help with demand management of public transport.

The inadequacy of existing urban transport strategy management strategy in Russia arises partly because there have been no available instruments of demand management. Parking policy, which is the main instrument in many European cities, is severely hampered by the current legal provisions that prevent the authorities from effectively charging for on-street parking. While recent changes in Federal legislation do give a little more freedom to municipalities to manage the use of transport lands for parking, remaining restrictions on the application of penalties for infractions and on the use of civilian officers to enforce parking regulations still prevent the development of an effective demand management policy.

1.5.3.3. Necessary actions: Phased approach toward long-term goal

The first requirement is for recognition by politicians and the public of the need for demand management. This can be assisted by the Government of the Russian Federation through a central advisory unit developing maintaining and helping authorities to apply an urban transport model. The capability does already exist in some Russian consultancy companies, but does not appear to be well disseminated throughout the country.

The second main requirement is the development of effective instruments of implementing new laws. In particular it is desirable that there should be a consolidated law on parking that covers how various parking needs are to be met. For instance, in congested city centers, parking provisions may limit the maximum allowed parking spaces per development area in order to induce a shift to public transport. On the contrary, in residential development, the provisions may set the minimum number of off-street parking spaces in order to reduce the number of cars parked on street interfering traffic. Not only should the law allow, or moreover, encourage cities to limit on-street parking availability and charge

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19 As designated in the Land Code of the Russian Federation.
appropriately for what parking space there is, but also it should provide for effective implementation and enforcement by permitting civilian enforcement and specifying minimum penalties for infractions. In preparation for possible introduction of congestion charging in the longer-term, the law should also treat this as a legitimate charge for the use of road space.

1.5.4. Mass Transport Development

1.5.4.1. Good Practice: Appropriate technologies and integrated operations

Many city governments in Western Europe feel that they can only restrain car use if there is an attractive public transport alternative. Evidence suggests that car owners can only be persuaded to use public transport if they that perceive the total cost of public transport, taking into account both money cost and travel time, at least matches that of the private car. With high incomes and high personal values of time, this effectively means that the door to door travel time of public transport must match that of the car. European cities typically try to achieve this particularly for commuting journeys to central area employment by a combination of some forms of restraint on private car use together with the development of high speed trunk transportation. In other words, investment in mass transit is an integral part of urban transport strategy.

Mass rapid rail transit (MRT) has been long established worldwide. Europe has 75 of the world’s 175 existing systems. The most explosive development, however, has been in China, which already in 2011 had nearly 2000 kilometers of route in 18 systems (16 cities), only three of which existed before 1995. A further 18 are already under construction, with plans to build 87 mass transit railway (MTR) lines totaling 2495 kilometers in 25 cities between 2009 and 2015. However, excluding China, Japan and South Korea, most large countries in East Asia only have MRT systems in their capital cities (e.g., Bangkok, Manila, and Kuala Lumpur).

Mass transit links are not restricted to conventional heavy rail metros. Many European cities such as Strasbourg, Utrecht, Manchester and Sheffield have developed at grade Light Rail systems which are less costly to construct and operate and less demanding in spatial requirements. Some of these are conversions of conventional tram systems where segregation from road traffic already existed or could be readily achieved. Warsaw is currently following this policy.

Bus rapid transit (BRT) has also become very popular recently. Within the general class of BRT systems, a distinction can be made between “closed” systems that mimic rail metro characteristics and “open” systems that do not use specialized vehicles but operate as super bus-lanes, and hence can more easily provide a “many to many” route structure instead of relying on a network of feeder services. In addition to larger vehicles and segregated busways with stations in the middle of the road (i.e. along the street or on central reserve), closed BRT systems include off-board fare collection permitting bus entry through all doors, same-level (usually well above the road level) boarding, and control of bus access. Passing lanes at stations permit express services, resulting in a quantum jump in commercial speed for those services (>30 km/h in Bogota and Lima) and line-haul capacity (44,000 passengers per hour in the peak direction on Avenida Caracas in Bogota where many bus services bypass otherwise overloaded stations).

The mass transit modes are not mutually exclusive. While BRT can be introduced more quickly, more cheaply, and sustained by lower traffic volumes than a rail mass transit system, beyond some threshold traffic volume it cannot match rail performance. Between the need to respond appropriately to rapid population and income growth and the need to remain fiscally responsible and financially sustainable, some mix of MRT and BRT may be considered. In fact, multi-technology mass transit networks are already becoming the norm rather than exception. While many cities still have an underlying preference for the fully-fledged underground or elevated rail metro, several—such as Bogota and Curitiba—have opted for the less expensive BRT during the first phase of a mass rapid transit development. Some of
the largest cities in Asia and Latin America (e.g., Beijing, Mexico City, Santiago) have invested in both. **Successful mass transit systems are not just a question of technology.** Where cities have incorporated different technologies in their mass rapid transit networks they have increasingly provided for both physical interchange and for commercial integration in a city-wide ticketing system. Some of the newer rail metros, such as Guangzhou, have also followed the Bogota BRT example in planning and providing for integration with cycling. In some cases, such as Santiago, Chile, there has also been restructuring of bus networks to integrate with a mass rapid transit trunk haul function. But more generally lack of effective coordination with local bus services has proved to be the greatest weakness of mass rapid transit development. Frequently this has its roots in the absence of a strategic planning authority and the separation of mass rapid transit and bus regulatory functions. The benefits of securing coordination of the widest possible range of services has been amply demonstrated in London and Paris, where not only bus and metro services, but also suburban heavy rail services have been brought together in a commercially and physically coordinated system.

1.5.4.2. Challenges: Finding solutions appropriate for the needs and available resources

The first challenge is to make the appropriate choice of mass transit mode within the urban transport system. There are currently 8 rail metros in operation in Russia and a further 6 under construction or being planned. Under the former Soviet system, there was a policy of providing metros for all cities with a population exceeding one million. This resulted in several short systems, such as those in Kazan, Samara and Yekaterinburg, which are poorly integrated with the rest of the transport system and hence fail to perform the high speed trunk movement function. The challenge is to decide at what size of city or density of main corridor movement, an investment in heavy rail metro, as opposed to light rail or bus rapid transit, is justified. It is notable that in China, a similar policy has encouraged development of metro and LRT systems in urban areas but only in much large cities. Decree 81 (2003) set out minimum criteria necessary for metro development to be seriously considered, shown in the table below.

### Table 1.3. Metro and LRT Eligibility Criteria for Chinese Cities

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Metro</th>
<th>LRT</th>
</tr>
</thead>
<tbody>
<tr>
<td>City population (million)</td>
<td>&gt;3</td>
<td>&gt;1.5</td>
</tr>
<tr>
<td>City GDP (RMB p.a.)</td>
<td>&gt; 100 bn RM (462.5 bnRMB)</td>
<td>&gt; 60 bn RM (277.5 bnRMB)</td>
</tr>
<tr>
<td>City budget income (RMB p.a.)</td>
<td>&gt;10 bn RM (46.25 bnRMB)</td>
<td>&gt;6 bn RM (27.75 bnRMB)</td>
</tr>
<tr>
<td>Demand (pass/hour/direction)</td>
<td>&gt;30,000</td>
<td>&gt;10,000</td>
</tr>
<tr>
<td>City equity investment *</td>
<td>&gt;40%</td>
<td>&gt;40%</td>
</tr>
</tbody>
</table>

* This norm is used to guard against excessive borrowing.


A second challenge is to exploit the potential of existing tram systems. Several Russian cities have conventional tram systems which are in poor condition and offer low quality of service. In some cases where the traditional bus services have collapsed and are being replaced or supplemented by commercial services provided by the private sector, the trams continue as the main carrier of concessionary fare passengers, often at a high real cost per passenger. Some central guidance and assistance is required to help cities reach a sensible outcome, either completely phasing out the operation to replace it with other modes, reviving its role through modernization (e.g., conversion to LRT), or somewhere in between.

A third challenge concerns the role of suburban railways. With the exception of Moscow, the potential role of suburban railways is not being adequately considered in other cities including St
Petersburg. This problem is accentuated by the lack of interest of the commercialized national railways in providing this service due to their emphasis on the more profitable freight traffic. Given the expanding suburbs in many cities, it is necessary to explore the opportunity to transform the suburban rails into modern mass transit systems that can efficiently move suburban residents into the city center.

**A final challenge, which underlies all of the foregoing, is to develop the kind of system integration and coordination within which mass transit can perform the desired function.** This calls both for coordination in the planning of the contributing modes—including restructuring of bus services, restraints on central area car parking, and development of peripheral park and ride facilities—and for commercial coordination—including multi-modal ticketing systems without penalty for modal interchange.

**1.5.4.3. Necessary actions: Modernizing traditional modes**

A decision on mass transit development should be made on the basis of evaluation of a wide range of alternatives, technical and economic feasibilities, deliverability, and political and public acceptance. Danger of relying on hit-or-miss type criteria, such as population size threshold, should be acknowledged. Those criteria may be used to determine the minimum eligibility condition, but shall not be used as a basis for selecting certain technologies. Key guiding principles for mass transit development are as follows: (i) an analysis and evaluation of a wide range of alternatives (i.e., Alternative Analysis) should be carried out in order to identify the most suitable and cost-effective option; (ii) institutional capacity and risks (financial and technical) should be assessed and incorporated in the project management plans; (iii) risks should be incorporated in the cost estimates and management plans; (iv) consistency between the project and overall transport strategic plan should be ensured, and (v) the public needs to be engaged in the planning process.

**Public transport segregation is critical to the development of a high speed alternative to private cars,** particularly for journeys connecting residential areas to the central city. In addition it is crucial to introduce public transport priority measures at key choke points. The federal government can assist this in several ways. Investment in maintenance of traditional tram systems is not likely to be as effective as upgrading and modernization to high-speed light rail with traffic management priority at intersections. A targeted program of investment in LRT or BRT (which is often more economical) would be appropriate.

**Physical and fare integration of all modes within one system is also very important.** The development of high-speed radial links needs to be supported by good physical integration with feeder modes and by park-and-ride facilities in peripheral areas where there is substantial cross-border commuting by car. Financial assistance could also be offered for the development of multi-modal ticketing systems, which would improve user convenience, and hence overall attractiveness of public transport to the citizens. The effectiveness of this measure, however, depends heavily on institutional reforms proposed in Section 1.5.5.3.

**1.5.5. Road-Based Public Transport Services**

**1.5.5.1. Good practice: Strategic competitive tendering; commercial operation**

Managing public transport services consistent with the overall strategic plan of the city is typically a municipal authority responsibility. Increasingly European cities concentrate on the role of planning public transport provisions but procure the desired services on contract either negotiated with a municipal operator or through competitive tendering from private sector suppliers. Competition

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is undertaken on a gross-cost basis, where the municipality collects all the fare revenues and simply pays the supplier for the service provided, or on a net-cost basis where the operator keeps the fare revenues and the payment to the operator (or by the operator in the cases of profitable routes) is based on the best bid.

**The gross-cost contracting system is usually considered the most convenient.** It is used in many large cities like London where there are multiple modes, as well as many of the smaller cities in Scandinavia. It enables a single, multi-modal, fare and ticketing arrangement to be introduced as the municipality handles all of the revenue collection. Quality is precisely specified in the invitation to tender as contractual obligations and subsequently carefully monitored, while the selection is made primarily on the basis of the least cost for providing the service specified. In this way the city retains complete control over the service quality, network structure, performance, and fares, while obtaining the best value-for-money through the tendering arrangements. This is the general arrangement currently advocated by the EU. Costs per vehicle-kilometer fell by between 20 and 40 percent when these systems were introduced in Western Europe.

**While some cities still provide service through the instrument of a municipal transport company, even these companies are usually set up as commercial enterprises.** That means that they are responsible for their own vehicle maintenance and replacement. They follow normal commercial principles, depreciating their assets on a replacement cost basis and transferring the appropriate funds to a replacement reserve. This then allows them to develop a rational asset replacement policy. Only rarely (in one or two French cities) are the vehicles provided by the city on a leasing arrangement to a company with a concession to operate the system.

**1.5.5.2. Challenges: Lack of competition and wrong incentives**

**Most Russian cities started with a large public supplier, offering affordable services for all, and reduced fares for a wide range of categories of citizens.** Since the introduction of Federal Law No.161-FZ of 2002, the publicly owned fleets are mostly operated by unitary municipal enterprises set up to operate assets owned by the municipality. The enterprises are formally independent, but obliged to give their profits to their owner authority. The unitary municipal transport enterprises thus rely on uncertain municipal funds for vehicle replacement. Ironically, the possibility that money may be made available through ministerially or presidentially mandated targeted programs undermines the sustainability of these services. The possibility for external funding weakens the commitment of municipalities to a more sustainable, cost-efficient, and commercially oriented approach, under which vehicle depreciation and replacement reserve procedure ensures the maintenance and timely replacement of the vehicle fleet. The fleets of unitary municipal enterprises were reported in discussions with some cities to be often older than those operated by the private sector.

**Many cities own tram and/or trolleybus fleets which are now more expensive to operate than standard internal combustion engine buses due to the high price of electricity.** Except where trams are operated on segregated track in areas where there is road congestion they are usually slower than buses. The budgetary burden they impose is increasing while the share of the electric modes is declining in most cities. The main advantage perceived for them is that they have less environmental impact. Vehicle replacement is a particular problem in these circumstances.

**As the finances of the public sector undertakings declined during the 90’s, the private sector began to play a substantial role in providing public transport services in most medium-sized cities.** Initially this was done illegally but later under public permits. Private sector supply now accounts for up to 90 percent of the operating bus and shuttle taxi fleet in some cities, though its share of total patronage is usually smaller due to the small average vehicle size in the private fleets. Private enterprises, though now carrying the great majority of bus passengers in most Russian cities, mainly operate small and medium size vehicles. They are responsible for their own vehicle provision and replacement, which may include leasing arrangements.
Private sector services are usually procured through a competitive tender. Federal Law No. 94-FZ requires that a competitive tender be held for any public service for which money is paid to a private supplier. Hence wherever there is a direct payment to the private sector operator (which is very rare), or where the contract involves an obligation on private suppliers to carry reduced fare passengers for which they receive compensation, a competitive tender is mandatory. The details of the tender competition, and the criteria for the choice of the winning bidder, are usually set by the municipal authority under the terms of a local law or resolution. Common contracting procedures permit very small operators to bid, either for individual slots on routes (in some cities) or at least to act as sub-contractors to a principal who has bid for a route contract. They are usually subject to monitoring by the municipality using GPS. While the vehicle quality may be variable, vehicles are on average newer than the municipal operators. From the municipalities’ point of view the main problems of the private operators are that they do not usually carry concessionary fare passengers, and the company size is considered to be too small.

In most cases only potentially profitable services are competitively tendered. The effect of this is the creation of a two-tier public transport system with a higher frequency of service available to those who pay the full fare than to those with concessions (mainly students and pensioners). Apart from any perceived inequity of this discrimination, it has other undesirable side effects. It results in a less efficient use of the total amount of capacity supplied on a route, as some passengers are unable to board vehicles on which there is space. It can also result in unnecessary overcrowding of municipally owned buses and trams providing the social services.

Even where competitive tendering is applied, the practice is often very narrowly conceived. For example, such devices as gross-cost tendering, price-based tendering, system-wide concessioning, etc., mobilized in relation to a strategic plan for the development of the transport system of the city, do not appear to have been explored in the Russian context. As a consequence, the municipal enterprises are increasingly concentrated on a diminishing supply of social services with increasing deficits burdening the public budget. Where municipal funds are scarce this tends to have the effect of precluding adequate programs of vehicle replacement so that the quality of service is also declining. In particular, the limitation of the private sector to individual routes or packages, which can be operated profitably, eliminates the possibility of mobilizing the private sector to provide unprofitable services which it could supply at less cost to the city budget than a municipal enterprise.

1.5.5.3. Necessary actions: Developing a strategic approach to competition

Given the heavy dependence on private sector buses in many medium-sized Russian cities it is very important to ensure that they are mobilized to the best advantage of all citizens. The monetization of the social benefits, including transport fare concessions, did not succeed in eliminating the problem of subsidized fares, with non-remunerative concessionary fares continuing to be sanctioned by the oblast and municipal administrations. In many cities only the publicly owned operators are obliged to honor these concessions so the subsidies to municipal operations are increasing while the service provided for social passengers is declining. It is therefore desirable that cities ensure that private sector buses carry all classes of passenger, including pensioners and students, and are able to provide service where they are the most economic provider of the service required.

The two-tier service outcome is not inescapable. As explained above, many European cities reconcile a policy of subsidies but minimize their burden on the budget by putting all services out to competitive tender, with the least cost of providing the service specified as the primary selection criterion. Quality is maintained by close supervision of the outputs (which most Russian cities can achieve through their existing monitoring systems), while cost is reduced through competition between suppliers. In order to take advantage of this potential benefit, it will be necessary to change both the basis on which private sector contracts are tendered and also the selection criteria for bids. Both of

21 Some cities, such as Lipetsk, avoid the obligation to tender by excluding the private operators from the obligation to carry concessionary passengers.
these issues are currently the prerogative of the local rather than the central government. Achieving change will need a combination of legal, advisory and financial actions:

- a program of education is required on the alternative forms of competitive tendering, covering their legal, administrative and financial requirements. This is a function for the National Urban Transport Advisory Facility;
- some legal changes would be required at the regional and municipal level, where many authorities have already promulgated regulations on competitive tendering that would be inconsistent with a reformed arrangement and hence would need revision. The National Urban Transport Advisory Facility could also be of assistance in providing templates for local laws or regulations which might then be adapted to the local situation and adopted by the lower level authorities;
- federal financial support may be provided to support the costs of introducing new systems, as part of the targeted federal assistance program by the Ministry of Transport, contingent on a commitment of the local authority to introduce a compatible reform.

For urban public transport to be economically sustainable it is necessary to reform not only the attitudes and procedures of service procurement, but also to reform the operators. The municipal operators must be truly commercialized: they must take ownership of their assets and be responsible for replacing them from revenues. They must operate under contracts to the municipality which, whether negotiated or won through competitive tendering, involve payment for the provision of unprofitable services as well as adequate compensation for the carriage of concessionary fare passengers. To achieve this they must be put at “arms length” from the procuring authority. They must not receive any deficit finance for losses incurred beyond the money received under the service contracts, and they must be subject to bankruptcy if they fail. To achieve this will probably require a reform of the conditions under which services are procured from public sector companies. But legally it will also require a revision of the status of unitary municipal enterprises in public transport provision (see Paper II).

Consolidation of the very numerous small private sector operators into viable commercial companies must also start with a revision of the service procurement processes. Prohibiting subcontracting would be a good place to start. But it would also be desirable to reform the contracting procedures and the selection criteria to allow private operators to bid for contracts to provide non-remunerative services rather than limiting them to the current commercial services. Moreover the contracts must be for a reasonably long period (5 years minimum) and must impose obligations on the contracting authority, as well as the operator, to prevent arbitrary actions which undermine the conditions under which the contracts were let.

1.5.6. Environmental Management

1.5.6.1. Good practice: Shared responsibility

Air pollution and noise are the two environmental impacts of transport considered most damaging to health in urban areas. For air pollution the World Health Organization sets standards for ambient air quality in respect of the main pollutants, which are adopted by most governments. In most Western European cities, the standards for suspended particulate matter, NOx, SO2, CO, and unburnt hydrocarbons are usually met, and conditions are generally improving. Ozone remains a problem in a few cities.

In most countries protection from air pollution is a function shared by central and local governments. Data is collected on ambient air quality and estimates are made of the causes of pollution by use of sophisticated source attribution techniques. Central government usually sets vehicle and fuel standards often at something close to state-of-the-art levels. Vehicle inspection, though undertaken locally, may be a central government function, but in either case is taken very seriously. Municipal
governments protect air quality in residential areas by use of various devices to prevent through traffic, and protect the central area by traffic demand restraint measures. In addition, many of the larger cities have the power to ban or penalize high polluting vehicles traversing the area, under so-called green zone policies. As residential, commercial and industrial establishments have legitimate needs to be services by freight vehicles, a further set of measures is usually employed to minimize the impact of this service traffic on the urban environment. Land use controls are used to locate factories and warehouses in locations which minimize the generation of damaging truck traffic – often in peripheral areas. And designated truck routes are used to channel traffic on to roads where the impact on the living environment is limited.

**Policy on transport generated noise is less well developed.** In the US, Noise Control Act of 1972 established a national policy and divided responsibility for action between federal, state and municipal governments. Under EPA regulations state government officials responsible for transport infrastructure development must assess noise levels, while FHWA regulations require the state highway agency to supply the results of highway project noise studies to the local planning officials. That data is only advisory, however, and it is left to local planning officials to decide what to do with it. European attention to noise has been even slower to develop. An EC Environmental Noise Directive (2002/49/EC) set out a program of noise mapping and noise action planning, but contained no quantitative goal for noise reduction. These are in the process of being revised. Member countries took various actions consistent with this regulation, but with varying levels of success. For example, in the UK, local plans were required under the Environmental Noise Regulations, 2006; the outcome has not been very good. In its 2008 report, the European Environmental Agency reported that 55 percent of people living in towns of more than 250,000 population endured daily noise levels above the lower WHO benchmark of 55 dBA for excess exposure to traffic noise; 3.6 million urban dwellers endured levels of 70 dBA or higher. In Western Europe, trucks represent only 3% of total vehicles, but account for half of vehicle noise emissions.

Noise mitigation policies have focused on (i) reducing the source noise from vehicles, (ii) abatement measures (such as walls or screens) along highways, and, (iii) controls of land-use near highways. The first is usually a matter for national government regulation while the latter two are implemented at the local level through building codes and planning permissions. In addition, some local traffic management powers are used to designate heavy vehicle routes and ban access to some locations. Unfortunately daylight hour bans to reduce congestion and air pollution may have very adverse effects on local noise conditions at night. While all three types of power should be used, a view is emerging that it is far cheaper to add readily available noise reducing technology to vehicles than to retrofit noise barriers on roads, which is in any case often infeasible in urban areas.

1.5.6.2. Challenges: Lack of policy emphasis and instruments

**Air pollution is still a major problem in Russian cities.** A recent report from the St Petersburg State University suggests that air pollution is still a problem in two thirds of Russian cities. This report is less definitive about the source of the problems, arguing that source allocation analysis is not yet sufficiently secure to justify strong conclusions.

At the national level action on vehicle emission standards and federal-level fuel quality have been progressively tightened in recent years. Adoption of Special Technical Regulations on Requirements to Harmful Pollutant Emissions from Vehicles Operating in Russia encouraged the use of higher quality vehicle fuel. Government Resolution # 1076, dated December 30, 2008, amended Fuel Regulations on Requirements to Automotive and Aviation Gasoline, Diesel and Marine Fuel, Jet Fuel and Fuel Oil,pursuant to which EURO 2 automotive gasoline (sulfur weight content up to 500 mg/kg) could only be produced until December 31, 2010 while diesel fuel with a similar sulfur content could only be produced until December 31, 2011. Production of EURO 3 automotive gasoline (sulfur weight

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content up to 150 mg/kg) and diesel fuel with sulfur weight content up to 350 mg/kg was permitted until December 31, 2011, and that of EURO 4 gasoline (sulfur weight content up to 50 mg/kg) until December 31, 2014. These actions, together with actions on industrial pollution appear to have stabilized the situation in Moscow (see table 1.4).

Table 1.4. Mean Concentrations of Major Pollutants (mg/m³) in Different Parts of Moscow, 2007–2009

<table>
<thead>
<tr>
<th>Parameter</th>
<th>For the city as a whole</th>
<th>Near city thoroughfares</th>
<th>Central area</th>
<th>Residential areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>0.7</td>
<td>0.57</td>
<td>0.60</td>
<td>1.0</td>
</tr>
<tr>
<td>NO₂</td>
<td>0.042</td>
<td>0.036</td>
<td>0.035</td>
<td>0.051</td>
</tr>
<tr>
<td>NO</td>
<td>0.046</td>
<td>0.038</td>
<td>0.038</td>
<td>0.057</td>
</tr>
<tr>
<td>SO₂</td>
<td>0.006</td>
<td>0.003</td>
<td>0.004</td>
<td>0.007</td>
</tr>
<tr>
<td>PM¹</td>
<td>0.035</td>
<td>0.037</td>
<td>0.033</td>
<td>0.048</td>
</tr>
<tr>
<td>O₃</td>
<td>0.032</td>
<td>0.032</td>
<td>0.03</td>
<td>0.039</td>
</tr>
<tr>
<td>AQI</td>
<td>6.3</td>
<td>6.2</td>
<td>5.8</td>
<td>7.1</td>
</tr>
</tbody>
</table>

Note: * – suspended particulate matter = PM10 (particle size ≤ 10 μm).
Source: NIIAT.

But Russian standards still lag behind European best practice. The lag in introduction of the EU vehicle emission standards in Russia has diminished from about 15 years for the introduction of EURO 1 and EURO 2, to six years for the planned introduction of EURO 5. Controls and taxes on the import of second-hand vehicles are also being used to support the improvement of the average standard of the fleet.

At the regional and municipal levels action has been less apparent. Regional authorities have the power to establish quality requirements for fuel sold in their territories, as was done in Moscow but few have taken such action. At the municipal level most of the medium and large cities undertake regular measurement of the total amount of pollutants emitted into the air, and also estimate the proportion that is coming from mobile sources (usually between 60 and 80 percent), though it is not clear how accurate is the source attribution procedure. Two main challenges exist.

First there is a problem with the current system of ensuring the quality of locally sold fuel and the lack of desire on the part of the authorities to address this complex issue. The failure of fuel quality to keep pace with the proposed tightening of emission standards has led to the postponement of the enforcement of Euro 4 standards. In those circumstances the emphasis of many cities is on encouraging a shift from diesel to gas (CNG or LPG) powered vehicles. Some (like Tomsk) may commit themselves to electrically powered public transport—particularly the maintenance of their tram and trolleybus enterprises—without adequate regard to the costs of that commitment or to the possibility that there might be more cost-effective policies available through the restraint of private car traffic. There does not appear to be any regular and systematic analysis of the cost efficiency of different measures in air pollution reduction.

Second, at the local level, improved traffic management is fundamental. While cities may wish to take actions to minimize the impact of urban transport on the local air quality, they feel that they have relatively few instruments at their disposal. Vehicle and fuel standards are determined federally. They cannot restrain private vehicle traffic; they cannot institute green zones, banning entry to commercial vehicles. The responsibilities for development of strategies to reduce noise pollution are similarly widely distributed but with most of the more effective powers (i.e., vehicle standards, infrastructure

²³ This data comes from NIIAT.
investments, etc) being either feral or regional responsibilities. For the municipalities what remains is predominantly in the field of traffic management, which, as described earlier, tends to be very weak in many cities.

In addition to air pollution and noise issues, destruction of natural habitats and cultural heritage sites is caused by unplanned and uncontrolled development at a rapid pace, posing serious threats to the urban environment. Such development patterns have long-term lock-in effects and are very difficult to reverse. Many cities around the world that recently underwent rapid development have passed through different phases: during the early stage of development they tended to be focused more on accommodating density demand for residents and businesses at the expense of adverse impact on environment, and gradually shift toward the livability of citizens and preservation of natural and cultural endowments. But undoing the effects of the development is very costly if not prohibitive or impossible.

1.5.6.3. Necessary actions

The federal government needs to accelerate its own current initiatives, and at the same time, exert some leverage on the regions that have hitherto shown little interest in ensuring the quality of fuels which are sold locally. It should certainly continue to tighten vehicle emission standards for domestically manufactured and imported vehicles, while simultaneously supporting the production of cleaner fuels. Enforcement of standards at regional and municipal level might be addressed through the use of stronger conditionality for inter-governmental transfers targeting the transport sector. However, this would probably require some amendment of the existing budget code. It is recommended that this issue should be explored as a matter of urgency.

One instrument for achieving this might be the requirement that regions and municipalities have developed local noise plans and local air quality plans, as being increasingly introduced in the EU. Through the National Urban Transport Advisory Facility, it could give advice on the preparation and content of such plans, as well as disseminating research findings on the economics of alternative instruments for noise and air pollution reduction. Using data from sample cities it could commission research on the cost-effectiveness of alternative policy measures, including shifts to electric transport. In the short-term it could provide targeted finance for investments in clean and quiet technologies, as well as for the development of improved emission testing facilities at the municipal level. Once again, however, many of these actions are dependent on the development of powers and financial capacity at the municipal level.

Integrated land-use and transport development plans should also take into consideration of adverse, and in particular irreversible, environmental impact of development. This can be done by requiring environmental impact assessment for investments of certain size, and in the case of substantial adverse impacts, mandating preparation and implementation of mitigation plans. Such legislative changes should be supported by institutional and technical capacity of regional governments and municipalities for effective monitoring and enforcement.

1.6. PHASED IMPLEMENTATION OF THE PROPOSED REFORMS, POLICY INTERVENTIONS AND CAPACITY BUILDING PLANS

1.6.1. The Priority Actions

Consideration of how European best practice might be adapted to improve urban transport in Russia has yielded a rich agenda of potential actions by the federal government in legal and regulatory reform, policy advice and facilitation and fiscal and financial assistance.

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24 This is very well illustrated in the urban renewal project of Seoul: Cheonggyecheon, an 8.4-km long stream in downtown Seoul, which was covered for construction of roads and flyovers, was re-opened and developed as a modern public recreation space. The $900 million was spent for demolition of the roads and other built structure, improvement of public transport along alternative routes detouring the stream, and clean-up and revival of the river stream.
The main priorities for legal and regulatory reform are:
- Clarification and consolidation of the legal responsibilities, powers and financial provisions for municipalities and metropolitan areas in urban transport;
- Revision of the legal basis for traffic management and parking control;
- Reform of public transport regulatory and procurement arrangements, including reform of the unitary municipal transport enterprises.

The main priorities for policy and technical advice are:
- Creation of strategic urban passenger transport planning functions and processes, including the development of demand forecasting procedures;
- Creation of traffic and demand management institutions and policies;
- Improved road maintenance and management arrangements;
- Improved public transport procurement mechanisms.

The main priorities for fiscal and financial support are:
- Establishment of traffic management and parking arrangements, including modern traffic signaling and parking charging equipment and other Intelligent Transport System applications;
- Modernization of mass transit, including pilot investments in tram upgrading to light rail transit and bus rapid transit systems;
- Improved integrated public transport management including investments in new ticketing and monitoring technologies.

A fuller list of the required actions is summarized Table 1.5. The detail of the respective categories of federal government interventions are discussed in Paper II (legal and regulatory reforms), Paper III (advisory and facilitating functions) and Paper IV (fiscal and financial support).

Table 1.5. List of Recommended Actions for Implementation of the Strategy

<table>
<thead>
<tr>
<th>Areas</th>
<th>Recommended Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legal and regulatory changes – Federation level</td>
<td>• Clarification and consolidation of the responsibilities of municipalities in the transport field, with transfer of ownership of all urban roads to the cities;</td>
</tr>
<tr>
<td></td>
<td>• Establishment of laws on parking to permit effective introduction of charges for on-street and off street parking, backed by efficient implementation by a civilian parking administration and supported by a clear provision for the enforcement of penalties for non-compliance;</td>
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<tr>
<td></td>
<td>• Assignment of revenues from parking or road pricing charges to the municipalities as a municipal trading revenue, allowing earmarking for transport sector application of revenues;</td>
</tr>
<tr>
<td></td>
<td>• Providing for voluntary associations of authorities to qualify for receipt of inter-governmental transfer of funds;</td>
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<tr>
<td></td>
<td>• Reforming the law on unitary municipal enterprises in the transport sector;</td>
</tr>
<tr>
<td></td>
<td>• Reviewing national fuel standards, particularly sulfur in diesel; and</td>
</tr>
<tr>
<td></td>
<td>• Assigning responsibility for control of vehicle access and movement in urban areas for environmental reasons to municipalities.</td>
</tr>
<tr>
<td>Legal and regulatory changes – regional and municipal level</td>
<td>• Requirement for arrangements for transfers to the municipalities to be put on a non-discretionary basis either by formula or by agreement on counterpart funding of an approved medium term development plan;</td>
</tr>
<tr>
<td></td>
<td>• Requiring that all cross boundary services have permits from both regional and municipal authorities;</td>
</tr>
<tr>
<td></td>
<td>• Revision of the basis of transfers from regions to municipalities from a discretionary to a formula or long term contract based arrangement;</td>
</tr>
<tr>
<td></td>
<td>• Revision of the criteria for competitive tendering of bus services; and</td>
</tr>
<tr>
<td></td>
<td>• Reforming public transport service permits to disallow sub-contracting.</td>
</tr>
</tbody>
</table>
**Technical and institutional changes at municipal level**
- Creation of a strategic planning function within the cities, including the development of a city transport strategy, stimulated by conditionality attached to federal targeted support programs as well as regional revenue distribution procedures;
- Creation of strong traffic management units with an appropriately wide range of responsibilities and capabilities.

**Technical and advisory support to be provided by a National Advisory Facility**
- Structure and preparation of urban transport strategy and associated medium term expenditure plans;
- Advice on alternative methods of securing voluntary collaboration in transport management at the metropolitan level;
- Advice on cost effective provision of access for the disabled
- Advice on the structure, staffing and operation of a modern traffic management unit;
- Developing a generally applicable and available transport demand model;
- Advice on alternative structures for competitive tendering of services;
- Advice on instituting better road management practices including computerized road management tools and better road construction contracting practices;
- Advice on establishing appropriate functional road classifications and urban road design guidelines; and
- Advice on alternative structures for competitive tendering of services.

**Financial and fiscal changes**
- Setting up costs of strategic planning capability and organization in the municipalities;
- Investments in physically segregated high-speed public transport systems;
- Traffic management systems including traffic signal controllers, traffic surveillance systems, and traveler information systems;
- Multi-modal transport ticketing systems;
- Supporting establishing of new competitive tendering systems; and
- Modernization of segregated electric transport systems.

### 1.6.2. Phasing and sequencing

**The package of reforms suggested in this paper so far has a logical integrity.** Spatially it is optimum to organize at the metropolitan level if possible. Organizationally it is desirable to have a core planning unit charged with the integration of functions. Functionally, traffic management, parking management and public transport management all require adequate human and financial resources. Ideally these institutional requirements should be met first as the basis for efficient policy implementation.

**In practice a more pragmatic, piecemeal, approach may be necessary for political reasons.** Fortunately, some of the recommended elements of reform have values in their own right as freestanding elements. New legislation on parking also makes good sense so long as it is based on a strategic view of parking as an essential element in a sustainable urban transport policy and not just as a matter of providing enough parking to accommodate unrestrained demand for private vehicle movement. Investment in mass transit is also generally consistent with a sustainability agenda so long as it does not expend resources wastefully on heavy rail development where demand is not sufficient to justify it. Similarly, actions to integrate urban public transport physically (through investment in interchange facilities) or commercially (through investment in electronic ticketing systems) may well make sense even without reforms in service procurement. All of these reforms are of high priority and can be introduced even before the introduction of the desired institutional reforms.

**The sequencing of policy for public road passenger transport reforms poses more difficult problems.** Mobilizing the private sector to supply social as well as commercial services – desirable to counter the observed decline in the availability of service to concessionary fare passengers in many
cities – would require all service contracts to be put to competitive tender. But competitive tendering of all services would not be effective unless the public sector suppliers – the unitary municipal enterprises – were reformed to operate on the same basis – including financing their own vehicle replacements from revenues – as the private sector. In this area it will be necessary to proceed simultaneously with a mutually consistent set of reforms.

The relationship between the problem issues and the recommended short-term priority actions is shown below in Table 1.6.

Table 1.6. Priority Actions in the Short-term

<table>
<thead>
<tr>
<th>Areas</th>
<th>International best practice</th>
<th>Challenges in Russian cities</th>
<th>Necessary Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institutional</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy planning and development</td>
<td>Availability of strategic plans for development of transport systems</td>
<td>No strategic plans for development of transport systems in practically all Russian cities, except the major ones</td>
<td>Designing of a strategy for transport system development – for all cities; Strategic planning of transport system development should cover the entire territory of metropolitan agglomeration; Provision of advisory support in the process of preparation of strategies for the development of urban transport systems; Provision of advice on alternative approaches to provision of transport services at the level of metropolitan agglomerations; Provision of advice on functions and possible institutional arrangements at the level of municipalities; Introduction of amendments into the legal framework governing matters related to territorial planning in order to ensure its consistency with the strategy for development of urban transport systems.</td>
</tr>
<tr>
<td>of transport systems</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institutional and organizational</td>
<td>Structured policy coordination</td>
<td>Excessive division of policy and institutional responsibilities</td>
<td>Streamlining legal and administrative basis.</td>
</tr>
<tr>
<td>arrangements</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fiscal and Financial Competencies</td>
<td>Predictable financial capability</td>
<td>Discretionary allocation, lack of predictability</td>
<td>Improving long-term fiscal sustainability; Adoption of a system for planning the use of allocated financial resources; Financing of initial costs associated with the establishment of modern traffic management centers; Support in financing of capital costs associated with the development of the transport sector and a new transport services procurement system; Targeted support in the development of electronic ticketing systems; Support in financing of initial costs associated with the establishment of the proposed federal information and analytical center for development of transport systems.</td>
</tr>
<tr>
<td>Areas</td>
<td>International best practice</td>
<td>Challenges in Russian cities</td>
<td>Necessary Actions</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Urban Transport Functions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mass Transit Development</strong></td>
<td>High service quality and comfort, meeting the existing demand for transport services in order to provide a viable alternative to the use of private cars</td>
<td>Low service quality which could potentially be financially viable; Mass transit development and system integration</td>
<td></td>
</tr>
<tr>
<td><strong>Public Passenger Transport</strong></td>
<td>The practice of holding strategic competitive biddings and ensuring commercial accountability of operators.</td>
<td>Low quality of services provided by traditional modes of transport (for example, municipal buses and trams). Lack of competition and wrong incentives. Inadequate legal framework.</td>
<td>Targeted pilot programs for development of express bus or tram systems; Commercialization of municipal transport companies and consolidation of private operators in the conditions of growing competition; Provision of advice on the fare structure; Provision of advice on route network planning procedures; Provision of advice on organization of alternative competitive bidding systems; Introduction of amendments into the laws on competitive bidding (at the regional level); Preparation of initial drafts of contract documentation; Changing the legal status of municipal unitary companies involved in the provision of road-based public transport services.</td>
</tr>
<tr>
<td><strong>Road Network</strong></td>
<td>The road network is adequate to fully meet the existing demand; Clear priorities for investments into the development of the road network are established; Modern methods of road maintenance are applied.</td>
<td>Lack of resources for financing all needed or economically justified investments into the development of road infrastructure.</td>
<td>Substantial increase in the volume of road and bridge construction; Rapid introduction of automated traffic management systems in pilot cities; Review of the condition of roads and traffic management systems; Road design guidelines; Identification of priority expenditures and effective utilization of available resources; Introduction of amendments into the territorial planning regulations.</td>
</tr>
<tr>
<td><strong>Traffic Management</strong></td>
<td>As a core of municipal responsibility</td>
<td>Functional gaps and division of responsibility. Important functional gaps in the current legislation</td>
<td>Integration and improving interaction among government agencies; Introduction of advanced traffic management methods; Dissemination of best practices in the area of traffic management; Adoption of the Federal Law “On Traffic Management” providing greater authority and clarifying the division of responsibilities.</td>
</tr>
</tbody>
</table>
### Areas

<table>
<thead>
<tr>
<th>Areas</th>
<th>International best practice</th>
<th>Challenges in Russian cities</th>
<th>Necessary Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parking</strong></td>
<td>Adoption of measures designed to restrain, when appropriate, the use of motor transport</td>
<td>Excessive fragmentation of strategic functions and lack of coordination</td>
<td>Phased approach to the achievement of long-term objectives; Dissemination of best practices in the area of development of comprehensive parking strategies; Improvement of the legislation at the federal and regional levels; Clarification and increasing the powers of municipalities in the area of parking policy implementation.</td>
</tr>
<tr>
<td><strong>Road Traffic Safety</strong></td>
<td>Integration in traffic management policy)</td>
<td>Inadequate traffic management and road safety assurance systems</td>
<td>Technological upgrading of the road network; Improving the system of development of pre-project and project documentation in all constituent territories of the country; Improving the quality of design of traffic management systems.</td>
</tr>
<tr>
<td><strong>Air Quality Management</strong></td>
<td>Improved coordination with division of functions and responsibilities among federal, regional and municipal authorities in the area of regulation, monitoring and enforcement of environmental standards and mitigation of adverse environmental impacts.</td>
<td>High air pollution levels in cities; Lack of clear priorities and environmental policy tools.</td>
<td>Ensuring the right balance between norms and incentives; Increasing accountability for failure to meet the existing environmental standards; Development of methodology for assessing environmental damage.</td>
</tr>
</tbody>
</table>
PAPER II

LEGAL AND REGULATORY CHANGES TO IMPROVE SUSTAINABILITY OF URBAN TRANSPORT SYSTEMS
INTRODUCTION

Paper I lays out the concept of sustainability of urban transport and identifies what appeared to be good practice, particularly in Western European cities, in addressing the problems of sustainability. It then identifies the impediments to emulating that good practice in Russia, with the inadequacy of the current legal and regulatory arrangements being one of the three main causes.

Section 2.2. of this paper starts with a brief discussion of the legislative structure of the Russian Federation, specifies the laws identified as pertaining to urban transport, and recapitulates the basic analysis of reform needs set out in Paper I. Sections 2.3. through 2.7. identify the suggested legal and regulatory changes on a topic by topic basis. Finally Section 2.8. discusses how the proposed reforms might be assembled or phased in order to achieve a more consistent and sustainable basis for the development of urban transport in the Russian Federation.

This paper does not generally attempt to suggest precise wording for new legislation, recognizing that this is a specialized task for a skilled legal draughtsman who is familiar with the legislation of the Russian Federation. Moreover, we recognize that our knowledge of Russian laws is imperfect and that some of our observations and recommendations, based largely on international practices, may or may not be appropriate.

However, we hope that our recommendations will be helpful in understanding the importance of development and improvement of the legal framework for addressing the existing transport problems in Russian cities.

2.1. PURPOSE OF THIS PAPER

The purpose of this paper is to identify the legal and regulatory impediments to the effective development of transport systems in Russian cities or legislative actions that would be necessary to overcome them.

2.2. THE STRUCTURE OF LEGAL AND REGULATORY REFORM

2.2.1. The Russian legal framework

The Russian Constitution, which is the highest law of the land, does not contain any direct reference to urban transport. By the omission of urban transport from the list of subjects reserved for the Federal Government (Article 71), or shared between the federal and subject governments (Article 72), it is implicitly allocated solely as the prerogative of the regional governments. This can be further delegated. Article 76 of the constitution asserts the rights of the subjects to make laws in the area of their responsibility, which could include assigning responsibility to lower jurisdictions. Article 12 of the constitution provides for local self government and Article 132 spells out the potential areas involved—including the management of municipal property—subject to the specific laws of the regions which allocated such powers.

The general principles of law are set out in a set of legal codes. The Civil Code, which is the constitution for the market economy, sets out the legal principles covering contracts, procurement of services as well as expounding the legal position of the Unitary municipal enterprise. The Budget and Tax codes spell out the responsibilities of the tiers of government for various public services (including the third tier – municipal – responsibility for management of local public transport) and the respective taxing powers of the authorities, as well as the basis for inter-governmental financial transfers. The Urban Planning Code sets out the general powers and responsibilities of authorities on planning and development control, covering road and main public transport network structures. Further details of these basics of the Russian legal system are contained in Annex 1.
2.2.2. The main laws relating to urban transport

The specific legal provisions relating to urban transport are contained partly in the legal codes, but mostly in specific federal laws, as shown in Table 2.1.

Table 2.1. Main Federal Laws Relating to Urban Transport

<table>
<thead>
<tr>
<th>Topic</th>
<th>Laws</th>
<th>Key Provisions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Federal Law No.184-FZ “On the general principles of legislative (representative) and executive bodies of subjects of the Russian Federation”, dated October 6, 1999</td>
<td>Responsibilities and competencies of regional (oblast) governments</td>
</tr>
<tr>
<td><strong>Public transport</strong></td>
<td>Federal Law No.94-FZ “On placing orders for goods, works and services for state and municipal needs”, dated July 21, 2005</td>
<td>Public procurement law for goods and services, including competitive tendering</td>
</tr>
<tr>
<td></td>
<td>Federal Law No.259-FZ “Charter of road transport and urban land-electric vehicles”, dated November 8, 2007</td>
<td>Rules for transportation of passengers, luggage and cargoes, and provision of road and urban land electric transport services</td>
</tr>
<tr>
<td><strong>Road development and traffic management</strong></td>
<td>Federal Act No.196-FZ “On the Road Safety”, dated December 10, 1995</td>
<td>Road safety</td>
</tr>
<tr>
<td></td>
<td>Code of the Russian Federation on Administrative Violations No.195-FZ, dated December 30, 2001</td>
<td>Powers to fine</td>
</tr>
<tr>
<td><strong>Environmental management</strong></td>
<td>Federal Law No.7-FZ “On Environmental Protection”, dated January 10, 2002</td>
<td>Environmental Impacts</td>
</tr>
</tbody>
</table>
2.2.3. The rationale of the proposed changes

Paper I set out what are considered to be the necessary characteristics of a legal and regulatory framework for the efficient administration of urban public transport. The central thrust of the analysis is the need for urban transport to be viewed as an integral whole, requiring planning, management and administration by an adequately skilled and empowered staff at the municipal or metropolitan level. The description of the present Russian arrangements set out in the previous section of this paper and in Annex 1 highlights two critical impediments to achieving that:

- First, there are no clear definitions of urban transport, traffic management or public transport in laws or legal codes. We recommend that the following definitions be systematically incorporated in legislation:
  - **Urban transport** refers to all matters affecting the ability to move people and goods within urban areas, including road provision and maintenance, traffic management, public transport, and the relevant aspects of land-use planning and development control. Each of these areas are defined as below.
  - **Traffic management** refers to activities, measures, and investments to ensure safe and efficient conditions for the movement of motor vehicles, non-motorized vehicles, and pedestrians on the roads and streets.
  - **Public transport** refers to all forms of publicly available carriage of passengers within urban areas including taxis and suburban railways as well as bus, minibus, tram, trolleybus and metros.

- Second, urban transport has never been treated as an integrated whole. Instead, the various aspects of urban transport systems, which in practice interact, are dealt with in separate and disconnected items of technical legislation or regulation;

- Third, the subject definition problem is closely linked to problems in the allocation of responsibilities among jurisdictions. The municipality is located at best as a second, and sometimes a third tier sub-national authority with limited legal freedom and very limited financial resources.

At first sight these problems appear insurmountable, as they are deeply embedded in the existing allocation of powers between jurisdictions. In several places Paper I suggests an increased role for city governments, with a consequent reduction of the powers of some of the existing regions. This is based on international experience, which shows that performance of transport systems in large cities depends on the coherence and coordination of a range of technical functions, at the city or metropolitan level. Some of the specific problems identified in Paper I (such as those concerned with the mechanics of the public transport tendering process) can be addressed by amending existing specific laws; however, this piecemeal approach would not fix the fundamental problem of a lack of coherence in the way urban transport issues are handled.

Fortunately, there does appear to be some flexibility to make progress both by laws and through the use of government or presidential decrees so long as the changes are not inconsistent with the Constitution. Moreover it appears to be the case that Russian practice has been for the various codes of law to be interpreted flexibly in light of their fundamental intent. Five distinct types of legislative or regulatory actions could be involved in that process:

- **Clarificatory legislation** to deal with apparent inconsistencies or incompatibilities in the present legal provisions. This arises particularly in respect of the contents of the two most fundamental bodies of law—the Constitution and the Civil Code (Annex 1), as well as those of the urban planning code and the code on administrative violations;

25 Traffic management measures can include (a) provision and utilization of traffic control devices that control traffic movement (such as traffic signals), (b) provision of regulatory signs such as speed limits, (c) provision of physical road geometric measures that guide the flow of traffic, (d) measures that allocate space on roadways such as bus lanes, trams/light rail transit, and high occupancy vehicle lanes, (e) measures that route the direction of traffic such as one-way streets, (f) measures that regulate the use of selected roads such as designated truck routes and streets where certain vehicles are not permitted, (g) measures and devices that charge for the use of roads such as toll roads and high occupancy toll lanes, (i) that improve pedestrian safety in crossing streets such as marked pedestrian crossings and under/overpasses, (j) on-street parking measures including areas where parking is restricted, where parking is allowed but with time limitations, and places where parking is charged.
• **Consolidation of laws** to deal with the fragmentation of provisions on closely interacting subjects within the field of urban transport, particularly in applications which are specific to urban transport rather than of wider application;

• **Repeal or amendment of existing laws** to remove impediments to actions which conform to good practice as identified in other countries;

• **Enactment of new substantive legislation** to deal with issues which have not previously arisen. This applies particularly in respect of urban transport as a whole, traffic management, or public transport service procurement and regulation;

• **Enactment of enabling legislation** to allow those municipalities which feel the need to exercise a specific power to do so, without forcing those who do not need the powers to exercise them.

A comprehensive reform strategy suggested by this paper should have two main areas of application:

• **Recognizing urban transport** as a new subject, not explicitly dealt with in the Constitution, and hence capable of being addressed through a comprehensive body of urban transport law;

• **Exploring the scope for institutional innovation** to make it possible to undertake integrated urban transport planning and management at the municipal or metropolitan levels. This might be achieved through a combination of the freedom for authorities to act jointly and the incentives which might be implemented through the conditioning of intergovernmental transfers and other direct ministerial or presidential programs.

### 2.3. ASSESSMENT OF LEGAL AND REGULATORY IMPEDIMENTS #1: INSTITUTIONAL RESPONSIBILITIES AND ARRANGEMENTS

#### 2.3.1. Functional Responsibility – Definition of Urban Transportation

**The Issues:** In the system of the Russian laws, urban transportation is not defined as an integrated and comprehensive strategy area, of which concept was discussed in Paper I. Instead, different laws define some modes and fragmented elements of urban transport in terms that are often technically inadequate. Government Decree 1090 of October 23, 1993 “On the Rules of the Road” defines the basic rights and responsibilities of drivers, passengers and pedestrians. Federal Law No.257-FZ (November 8, 2007) “On the Roads and Road Traffic in the Russian Federation and on Introducing Amendments to Certain Legislative Acts of the Russian Federation” defines road transport and city ground electrical transport (trams and trolleybuses but not metro); Federal Law No.196-FZ dated December 10, 1995, “On Traffic Safety”, loosely defines traffic management in relation with road safety but the definition does not adequately capture the modern sophistication of traffic management instruments, algorithms and technologies. Logically, responsibilities for things that are not legally and technically well defined cannot be granted to a legal entity. Having a clear legal definition of urban transport is thus critical.

**The Proposed Reform:** It is desirable that there should be a clarification of what comprises urban transport, and where are the boundaries between the responsibilities of the Ministry of Transport and that of other ministries, given that at federal level the responsibility for development of government policies and regulation in the area of transport, including urban transport, now rests with the Ministry of Transport. These include, for instance, Ministry of Interior on safety, Ministry of Natural Resources and Environment on air pollution, etc. The appropriate response to these anomalies would be to enact a clarificatory law, defining urban transport as an integrated strategy area that covers infrastructure and operation of all modes of transport in cities; management of traffic flows and all other elements relevant to transport services. Note that this is a wider concept than that of traffic management, seeking the means for integration at the municipal level of instruments affecting both private and public transport, not only on roads but including other modes such as metro, suburban rail and urban ferry transport. This could be a separate law, or could be included in a new law on urban transport.
2.3.2. Jurisdictional Responsibility

The Issues: In the absence of a formal definition of urban transport, there is also some lack of clarity with regard to (i) the jurisdictional allocation of responsibilities and (ii) the mismatch between the defined roles of a sub-national government and resources allowed for them to carry out their roles. Specific component technical functions are assigned separately by statutes such as Federal Law No. 131-FZ of October 6, 2003 “On General Principles of Local Government in the Russian Federation”, and Federal Law No. 196-FZ “On the Road Safety” (December 10, 1995). Some urban transport functions are at oblast and some at municipal level. For example, traffic management appears currently to be a function shared between federal and regional governments, road provision and maintenance is shared between regional and rayon administrations, while public transport provision is delegated to the lower level of the settlements. Furthermore, the federal responsibility for protection of the environment might be interpreted to give the federation powers where urban transport could be deemed to have any adverse environmental impacts. This contradicts with the implicit allocation of urban transport as a regional function envisioned in Articles 71-73 of the Constitution of the Russian Federation, and also with the provisions for local self government. This current confusion in the assignment of responsibilities makes it difficult for municipalities to develop a comprehensive strategy. Based on the review of international experience, Paper I concludes that further concentration of both powers and resources at the municipal level is desirable, though such a reassignment of primary responsibility should not exclude the possibility of implementation of a function, such as traffic signal maintenance, being contracted out or delegated to a regional authority. At the moment they appear to have responsibility for organizing public transport supply, but not for any strategic matters covering urban transport provision or road traffic management.

The Proposed Reform: It is proposed that reforms to address this issue should include changes in the basis for inter-governmental transfers, encouragement to strengthen municipal authorities and appropriate changes in the tax code. Ideally all cities of oblast subordination, which already perform the functions of second and third level local government units with respect to transport, would need to have the responsibility for all strategic matters relating to urban transport assigned to them. It is recognized, however, that a constitutional reform formally transferring powers to a third level jurisdiction is unlikely to be undertaken as a result of concerns arising in a single sector. It is therefore proposed that a number of less revolutionary, but still quite radical, alternatives be considered. These include the following:

- Moving to a more predictable formula-based procedure for transferring funds down from the federal government to the regions and from the regions to the cities. This should cover all but major infrastructure expenditures, which should continue to be justified on a case by case basis. But even for these it might be sensible to set out in advance the criteria on which decisions would be made;
- The encouragement to strengthen municipal authorities or to create metropolitan authorities where appropriate—already permitted by the Constitution—by federal grants, to be automatically passed through to the municipalities by the recipient region to municipalities or metropolitan areas which have developed and approved long-term transport strategies and plans.

It is not possible to increase the taxing powers of municipalities merely by amending the Budget Code of the Russian Federation, as the powers are regulated by a number of other normative acts. Such acts include:

- Tax Code of the Russian Federation;
- Federal Law No. 184-FZ “On general principles of organization of legislative (representative) and executive branches of the constitutional entities of the Russian Federation” dated October 06, 1999;

26 Smaller urban settlements which would probably lack the technical or financial capacity to perform that comprehensive role should remain as at present.
If those acts are amended, respective amendments will also need to be introduced into regional and local acts regulating taxing powers of municipalities.

In addition to taxes, other types of compulsory payments are collected (e.g. fees for parking on roads). In order to change the powers with respect to such payments, it will be necessary to introduce amendments into the normative acts that establish such payments (e.g. with respect to fees for parking on roads – into Federal Law No.257-FZ “On Roads and Road activities and Introduction of Amendments into Some Legislative Acts of the Russian Federation” dated November 8, 2007).

2.3.3. Metropolitan Agglomerations

The Issues: Transportation operations and investments (especially for passenger public transport) are increasingly transcending municipal boundaries, but only in the case of Moscow and St Petersburg do conurbations have the full functions of a subject of the Federation. Paper I suggested that Russia should develop a legal framework for the development of strong metropolitan authorities.

At present there appears to be no formal provision in the Constitution or elsewhere in the law for metropolitan authorities with designated operational and financial authority, though there is provision for local self-government by municipalities in matters of predominantly local interest. The nearest thing to a procedure for establishment of a metropolitan authority is contained in Article 131 of the Constitution which declares that changes in borders of the areas in which local self-government is administered shall be made with the consideration of the opinion of the population of the corresponding areas. In the case of city boundaries involving local governments within same region, this procedure is done through public hearing. If this spans beyond a regional boundary, this becomes a constitutional case. This appears to leave open the possibility of creation of metropolitan authorities by agreement between second level sub-national government agencies with the agreement of the region. However, international experience suggests that successful operation of a metropolitan scale authority is critically dependent on the authority having a sound financial base. The possibility of achieving this satisfactorily in Russia currently appears to be seriously impeded by the limited scope of the Article 132 assignment of taxing rights to local self-governing jurisdictions, discussed above.

The Proposed Reform: The two requirements to facilitate effective metropolitan level government are (i) creation of a firmer constitutional basis for the establishment of metropolitan authorities; and (ii) the creation of a secure financial basis for the authorities thus created. This involves both the centralization of implementation powers of existing municipalities in the new conurbation and a partial decentralization of the powers presently vested in the regions.

The first issue has important constitutional implications. Cross regional metropolitan authorities cannot be established under the present Constitution. And even within a region, as the financial power rests clearly with the region, the creation of a metropolitan level authority is only an attractive proposition for second level sub-national governments if it is supported by the region. As mentioned above, only Moscow and St Petersburg have the status of cities of federal importance, and even in those cases there is no provision for handling the extension of the metropolitan boundaries (note that in the case of Moscow this is being approached through the voluntary development of the “Moscow Hub”27). We suggest that a new legal procedure should be developed for the establishment of metropolitan authorities as subjects of the Federation.

Any such reform would have to be supported by secure financial sources. Under the present constitutional arrangements, regional government may stipulate an obligatory procedure on budgetary allocation, requiring certain coordinating procedures to be taken by multiple local governments (for example

27 The “Moscow Hub” is a coordinating body involving the participation and cooperation of the Moscow City Government, the surrounding Moscow Oblast, and the Russian Ministry of Transport with the Minister of Transport as the chairman.
one municipality and its adjacent rayon). This may be effective where the regional authority is positively trying to encourage the development of metropolitan authorities but the constituent parties are reluctant to collaborate. But it will not be effective where a major city is trying to establish an effective metropolitan area but the region is not committed in support of the effort. A new law on metropolitan authorities would need to extend the financial powers presently ascribed to the region to the new metropolitan authorities.

2.3.4. Fiscal and Financial Arrangements

The Issues: The financial position of most municipalities is weak and uncertain. As noted above in the discussion of metropolitan arrangements, the assignment of responsibilities should have important fiscal implications. According to Article 104 of the Constitution, any new draft laws on introduction or abolition of taxes, or granting tax exemptions may be submitted to the State Duma only after approval by the Government of Russian Federation. In accordance with Article 105, federal laws are passed by the State Duma only after approval by the Federation Council of the Federal Assembly of the Russian Federation.

While in accordance with Article 132 the local self government bodies “introduce local taxes and dues” envisioned by the Tax Code of the Russian Federation, the only taxes that may be collected and administered by regional or municipal governments are those stipulated in the tax legislation (Tax Code), as local taxes. The right assigned to regional or municipal governments under Article 132 is thus to adopt such taxes only in accordance with the Tax Code or federal laws adopted in accordance with the Tax Code. That limitation effectively constrains the range of freedom of local self-government bodies.

The consequence of the weak taxing powers of the municipalities is that they are dependent on transfers from higher jurisdictions for approximately 70 percent of their revenues. At present, funds are transferred directly by the Government of Russian Federation to the constituent territories of the Russian Federation. Where these are earmarked for specific projects, as in some ministerial or presidential targeted programs, the region passes them through automatically to the relevant subsidiary agency or jurisdiction. But more generally the municipalities obtain their funds on an annual basis, on an annual request and negotiation basis. As mentioned in Paper I, this makes it very difficult for the municipalities to do meaningful long-term strategic planning, or to make sure that their allocation of resources is consistent with a long term strategy.

Current laws are also silent with regard to local contributions to federal programs in support of urban transportation. Matching funds or local government contribution is not required by general laws; though each individual program can be designed in such a way to require that. In order to assist municipalities in undertaking long-term investment planning federal law (or guidelines) should specify not only the general rules of eligibility of municipalities for federal funding but also the required municipal counterpart contributions with respect to federal grants for capital investments.

The Proposed Reform: The arrangement for inter-governmental transfers needs to become much more predictable for the municipalities, preferably with transparent formula-based transfers, or with longer term contractual commitments between the municipalities, regions and federal governments. It is possible that these issues could be dealt with by an appropriate amendment of the Budget Code, and this should be explored first. If that avenue proves intractable, new legislation will be needed to cover inter-governmental transfers related to urban transport. It would also be sensible to explore the extent to which conditionality attached to municipal taxing powers or to inter-governmental transfers might be used as incentives to create sensible metropolitan arrangements. This should be explored as a matter of urgency.
2.4. ASSESSMENT OF LEGAL AND REGULATORY IMPEDIMENTS #2: STRATEGIC TRANSPORT PLANNING

2.4.1. Development of an Urban Transport Strategy

The Issues: At the moment urban transport planning is unduly limited in scope. The comprehensive urban development plans are primarily concerned with physical structure, no more. For instance, as far as urban transport is concerned, these plans often stop at identifying major infrastructure investment requirements, but do not deal with crucial issues of system management. Even in respect of physical investments, the general plan often does not fully reflect the current objectives of city officials and citizens, and is typically not suitably constrained with respect to likely available financial resources. The fact that municipalities do not control all aspects of urban transport (see Section 2.3.2 on the likely need to amend Federal Law No.131-FZ and Federal Law No.184-FZ) makes it even more difficult for the cities to prepare and implement long-term strategies. Clearer specifications of municipal and oblast responsibilities are thus a pre-requisite for the establishment of improved practical implementation of strategic urban transport plans. To overcome these defects municipalities need to develop more comprehensive urban transport strategies that take into account city objectives and which are financially realistic.

The Proposed Reform: This issue requires two types of reform; (i) reform of city planning processes; and (ii) reform of city budgetary arrangements. First with regard to the planning processes, municipalities should be required to prepare comprehensive urban transport strategies as a condition for having the power and financial resources to implement their plans. At present there is no legal foundation for the development of such plans. It would therefore also require a clear legal basis, which might be provided for in a new urban transport law. Furthermore, given the novelty of this approach for many cities, guidelines would need to be prepared to assist cities in developing more comprehensive urban transport strategies that reflect the views of citizens and are realistically achievable. (This could be within the scope of responsibility of the National Urban Transport Advisory Facility proposed in Paper III).

Second with regard to the budget processes, the approach adopted in many countries is to finance long-term strategies and medium-term expenditure plans, prepared by municipalities and approved by appropriate upper-level government, rather than individual programs or projects. In such a case, the transfers would be made for a clearly defined proportion of the approved expenditure plans, stipulated by appropriate laws, allowing the municipalities to have considerable freedom concerning the specific policies and instruments which they finance. However, such general performance-based transfers to municipalities do not appear to be possible in the context of the legislation of the Russian Federation. Budget allocation in Russia is tied to specific actual programs (i.e., a municipal government gets budget allocation for the specific services or infrastructure that it provides), not fulfillment of other activities, for which the money is not used. While in practice every program that is on the budget should be justifiable on the basis of its benefits to the local population, the interpretation of this to require all transfers to be strictly earmarked inevitably has the effect of limiting the freedom of initiative of the municipal government, particularly in the adoption of more novel policies with financial implications (such as charging for on-street parking).

One possibility would be to approach this through an amendment of the Budget Code to provide for direct transfers of block grant money (as opposed to specific project support as at present) to the municipalities. This could be linked to conditions for the direct transfers, which give the municipalities a financial incentive to undertake more comprehensive long-term transport planning.

An alternative approach might be to introduce a new law on urban transport to express some of the activities, which the municipalities have the power to undertake in respect of transport as “obligations”, rather than “rights”, and to put on the regions a parallel obligation to ensure adequate funding for their
municipalities to be able to fulfill their obligations. This might apply to the main municipalities in all
rayons, subject to them having some minimum population size. It might be that a new law—specific
to urban transport—would be easier to introduce than a change in the budget code which would have
implications far broader than those in the transport sector.

2.4.2. The Urban Development Code

The Issues: The urban development code is not well-related to the development of a compre-
hensive transport strategy. In constructing capital objects and territory planning a number of federal
legal codes must be observed, including the Urban Development Code, the Civil Code, the Land Code,
and the Water Code. Some specific federal laws apply such as Law – Federal Law No.184
of the Environment”of January 10, 2002. In addition relevant regulations, such as the Resolution of the
State Committee of the Russian Federation on Architectural and Construction (Gosstroy) N 18-41 “on
the order of the state examination planning documentation and building construction projects in the
Russian Federation” dated October 29, 1993, and order N 372 of the State Committee of the Russian
Federation for Environmental Protection (Goskomekologiya) “on Approval of Regulations on environ-
mental impact assessment of planned economic and other activities on the environment in the Russian
Federation” dated May 16, 2000, must be observed. Depending on the status of the territory, munici-
pal, regional or state standards for urban management could also be applied. Project documentation
and engineering surveys are subject to expert assessment of their compliance with all relevant regula-
of organization and conducting of state expertise of project documentation and results of the engineer-
ing surveys”.

Most of these standards and regulations apply to the physical nature of the construction and its im-
mediate impacts, but not to the underlying planning structure, which at the municipal level is properly
the function of the City Architect or City Planning Department. Three important problems have been
observed in this context.

First, transport professionals in several cities have expressed concerns that inadequate attention is
paid to transport implications in development control. Adequate and timely transportation investments
are not always provided in response to land use developments with the consequence that congestion
occurs on access roads to new developments.

Second, even where the traffic impacts of new developments are understood, there is presently no ade-
quate legal basis for ensuring that those who benefit from the permission to make new developments
meet the costs imposed either on the municipal budget (in the case that the municipality makes the
necessary supporting access road investments) or on current road users (in the event that the support-
ing investments are not made and congestion ensues).

Third, those standards used in development control that have implications for transport strategy are
not subject to any obligatory consultation with the transport sector. This applies critically to norms for
parking provision for new developments (whether commercial or residential), and to controls on density
of development in different locations—normally addressed through Floor Area Ratio (FAR) standards.

The Proposed Reform: The development control process should be amended in three ways
to ensure that transport policy issues are in conformity with a municipal transport strategy.
First, the urban development code should be amended to require traffic impact assessments to be
undertaken for all new developments above some threshold size (to be decided after consultation with
urban transport planners in some major cities). Provisions to this effect are proposed in the Concept of
the Draft Law on Traffic Management dated February 2, 2012 (hereafter, “the Draft Law”). Guidelines should therefore be developed for conducting traffic impact assessments (a possible function for the National Advisory Facility, see Paper III), and cities required to undertake traffic impact assessments for developments above the minimum threshold.

Second, the code should permit cities to require developers to either provide needed transport infrastructure, or to pay fees in kind for provision of required infrastructure. Again, it should be a function of the National Urban Transport Advisory Facility to develop guidelines on how developer contributions should be best specified.

Third, the city transport administration should be required to “sign off” on a specified list of norms and permissions with significance for transport policy—including FARs and parking norms—so long as these have been included in an approved long term transport strategy statement for the city. While it would be helpful if the National Urban Transport Advisory Facility gave advice on the principles to be followed in determining the norms, it is important that these should not be national norms applying to all situations, but location specific municipal norms developed on a case by case basis.

2.4.3. Implementation Capability and Skills Development

The Issues: Part of the problem in developing the sustainability of urban transport in Russia is the lack of some professional skills in medium-sized cities, particularly in urban transport planning and traffic management. There are two aspects to this. First, while the technical aspects of urban transport appear to be well provided for in the state educational standards for university curricula, the management and market regulation aspects do not seem to be so well covered. Federal state education standards are adopted separately for each professional training area as listed by Order No.201 of the Ministry of Education and Science of the Russian Federation dated February 17, 2011. The standards were last amended in May 2011. Training related management appears in professional training area 190000 “Land transport and logistics complexes,” which includes specialty 190100 “Land transport systems”; professional training area 190600 “Operation of transportation technological vehicles and complexes”; professional training area 190700 “Technology of transportation processes,” which includes specialty 190702 “Organization of traffic and traffic safety”. Traffic management is not recognized in these standards as an important area in its own right and public transport service procurement does not appear to be included at all.

Second, existing skills do not appear to be very mobile. One contributing factor to this is the lack of any system of post experience professional certification of urban transportation professionals. Many of the European countries with well developed urban transport planning capabilities have strong systems of certification in the areas of traffic engineering, urban transport planning, and public transport regulation and procurement. These systems often combine initial training in the academic institutions, certified through a nationally recognized university degree system, and further practical training, organized and accredited by national professional organizations. While Russia has some strong traditional academic training it could benefit from an equivalent recognition of the desirability of a national system of post-experience professional accreditation.

The Proposed Reform: It is proposed that a thorough review be undertaken of the laws relating to both basic professional training and post-experience training in urban transportation planning and management. With respect to basic professional training, there is a well established procedure for adoption and amendment of standards by the Ministry of Education established by Resolution

28 The development code does not currently distinguish between minimum standards of parking provision necessary to ensure that vehicles are parked off-street and do not impede the flow of traffic—from maximum standards—which might be considered necessary to discourage private car trips to particularly congested locations. The current version of the Draft Law on traffic management also omits any reference to this distinction.
No. 142 of the Government of the Russian Federation dated February 24, 2009. While federal educational standards are routinely reviewed at least once every 10 years, in practice they are amended on a regular basis at the initiative of interested parties. It is recommended that such a review be initiated in association with the enactment of the new law on traffic management.

With respect to post experience training there exist special mandatory qualification procedures for certain specialists (attorneys, notaries, judges, bankruptcy managers, appraisers, etc.). The requirements for mandatory qualification of such specialists are established by the relevant laws regulating their professional activities and, depending on the profession, may include:

- passing a special qualification exam held by a qualification board;
- receiving a special license from a licensing authority;
- becoming a member of a self-regulating organization and meeting membership requirements established by such organization.

Those principles could be used in the fields of transport planning and management, and it is recommended that the proposed National Urban Transport Advisory Facility be given the task of investigating alternative means of establishing such a system.

2.5. ASSESSMENT OF LEGAL AND REGULATORY IMPEDIMENTS #3: TRAFFIC MANAGEMENT

2.5.1. The Legal Foundation

The Issues: under the current Russian law, traffic management is not recognized as a key technical area for urban transport, which the draft traffic management law intends to achieve. On the basis of international experience Paper I argues that traffic management is a very important element within a comprehensive urban transport strategy, which should be implemented by appropriately located and staffed institutions using a wide range of instruments. The existence of a strong and coherent legal framework is the necessary basis for this. Within existing law, there appears to be no adequately broad legal definition of traffic management, with the provisions relating to traffic management scattered between a range of measures including Resolution 1090 of October 23, 1993, “On Traffic Regulations”, Federal Law No.196-FZ of December 10, 1995, “On Road Traffic Safety”, Federal Law No.257-FZ of November 8, 2007, “On Motor Roads and Road traffic Operations in the Russian Federation”, and Federal Law No.3-FZ of February 7, 2011, “On Police”. The emphasis of these acts is primarily on road safety rather than the broader objective of efficient performance of the road traffic system.

These issues are all recognized in the Draft Law, which provides for a new act consolidating and clarifying existing powers and amending previous legislation to achieve a broader approach to the subject.

The Proposed Reform: This paper strongly supports the initiative to enact a single comprehensive law on traffic organization and management. This is necessary both to remove various uncertainties about the allocation of powers and responsibilities and to ensure that the subject is given the prominence that it requires. The following sub-sections suggest some further elements which are recommended for inclusion in the proposed law, but should not detract from the strong support which they give to the concept.

2.5.2. Strategic context

The Issues: Traffic management needs to be placed more firmly in a strategic context. The preamble to the Draft Law on Traffic Management points out that present urban planning practices do not adequately take account of transport factors in territorial planning or urban planning decision making, and proposes various amendments to the present urban planning arrangements to rectify this. It
also argues that local governments should be given powers enabling them to do strategic planning and implement key measures to organize road traffic at the municipal level. In support of this, it suggests a clear distribution of competencies in road traffic organization between jurisdictions. However, the role assigned to the municipalities in this division of function appears to be essentially technical, and the development of traffic management is not placed within the broader context of a strategic municipal transport plan. While referring to the possibility that long-term planning documents for design of road traffic arrangements might be envisaged for larger cities, it does not require such plans or indicate how this might be handled institutionally.

The Proposed Reform: **A stronger institutional basis for traffic management should be embodied in the new law.** The general thrust to get better integration of land use planning and traffic facility provision and management in a strategic context is correct. It is suggested, however, that this might be given a stronger institutional dimension by the following steps:

- Encouraging large cities to develop comprehensive urban transport strategies within which a traffic management plan can be developed;
- Encouraging all large cities to establish a transport department to which the transport aspects of land use plans, and other strategic matters be referred; and
- Empowering authorities that have developed such a comprehensive strategy framework to require that the transport aspects of the territorial development plan shall only be adopted by the municipality if approved by the transport authority.

### 2.5.3. Objectives of Traffic Management

**The Issues:** The objectives of traffic management are not sufficiently clearly stated. The Draft Law points out the traditionally narrow concern of all legislation relating to traffic management with safety. Without detracting from the importance of safety it argues that broader objectives, including efficiency of the performance of the road system should be adopted in designing and implementing traffic management strategies. Reference is made particularly to the need to provide for the efficient flow (“uninterrupted”) flow. The remaining concern, however, is the concept of uninterrupted flow might possible be interpreted in three different ways:

- That where there is a conflict between safety and efficiency of traffic flow, the latter should prevail. This is not consistent with recent developments in road safety policy that emphasize a “safe system” approach in which safe design may involve intentional restrictions on free flow;
- That traffic should be kept moving, even at the expense of long diversions (for example, to avoid left turns). While this may be efficient in some circumstances it is not always so; and
- That provision should be made for accommodation of unrestrained demand. This does not appear consistent with other provisions that allow for the introduction of restraints of unfettered motor access.

**The Proposed Reform:** The statement of objectives of the Draft Law should specify that the “uninterrupted” movement of traffic should be consistent with “safe” movement of traffic, and should not undermine other policy objectives such as safety, comfort, and convenience of pedestrians and non-motorized transport. In support of this, this paper recommends that the proposed National Advisory Facility should be given the task of providing guidelines on how traffic management schemes be designed consistent with these objectives.

### 2.5.4. Jurisdictional responsibility and ownership of roads

**The Issues:** Formal responsibility for traffic management is currently divided between overlapping jurisdictions. The existing legislation of the Russian Federation, including the recent amend-
ments to Federal Law No.257-FZ (introduced by Federal Law No.69-FZ, April 21, 2011), allocates responsibility for traffic management, including that of paid on-street parking on different categories of road, to the specific level of jurisdiction within which ownership a particular road falls. Part 3 Paragraph 6 of the Draft Law embodies that same philosophy. The implications of this differ from city to city. In some cities, (for example, Volgograd) all roads within the city boundary are the property of the city. More generally, however, the roads defined as of federal importance belong to the Federal government, those of regional importance belong to the regional government and those of purely local importance belong to the municipality. This implies that there can be three different traffic management authorities with jurisdiction within an urban area. This is likely to undermine sensibly coordinated policy implementation of road maintenance and parking policy arrangements as well as traffic management.

The Proposed Reform: It is recommended that the law should make clear that the whole of traffic management policy and its implementation should fall to one responsible agency—normally the municipality. There are two possible solutions, of which this paper recommends the latter:

- Where the ownership of roads is vested in a jurisdiction higher than that of the municipality (federal or regional), the obligation should fall on the higher level jurisdiction to coordinate with the municipal traffic management authority in respect of any construction, maintenance or management activity that they propose to carry out on the roads that they own; and
- Recommended approach: For integrated traffic management, the ownership of all roads within the municipal areas should be transferred to the municipalities, with the provision that the higher-level jurisdiction provides adequate funding for improvements or maintenance of such roads in agreement with the municipalities.

In respect of parking (dealt with further in Section 6 of this paper), it is recommended that municipalities should have power over (a) the planning norms for parking in different locations, with clear powers to specify maximum standards where appropriate to reduce the number of vehicles entering an area, (b) the level of parking charges, both for on-street and off street parking, and (c) the level of fines to be imposed for parking infringements.

2.5.5. Functional responsibility

The Issues: The current legal basis for the allocation of function between the municipal authorities and the police is complex and confusing. The functions of the authorized federal, regional and local bodies (the municipal authorities) include planning of road activities (including planning of new road construction) under Article 14 of Federal Law No.257-FZ “On roads and road activities in the Russian Federation” dated November 8, 2007, and activities related to organization of traffic management under Article 21 of Federal Law No.196-FZ “On traffic safety” dated December 10, 1995. The functions of the traffic police are established in Article 12 of Federal Law No.3-FZ “On police” dated February 7, 2011 and Clause 11 of the Regulations on State Traffic Safety Inspection”) approved by Decree No.711 of the President of the Russian Federation “On additional measures for providing traffic safety” dated June 15, 1998 are related to enforcement of traffic law, in particular:

- control over execution of existing requirements related to traffic safety;
- regulation of road traffic, among all by using technical means and automated systems;
- vehicles registration;
- documentation of traffic accidents;
- functions related to transportation of heavyweight goods, etc. (Sub-Clause 19 Clause 1 Article 12 of the Law on Police, Clause 11 of the Regulations).

The confusion appears to arise because of the emphasis in the legislation on the comprehensive responsibility of the police for all matters relating to road safety which may be interpreted to go beyond the enforcement of traffic law. Most European countries more explicitly assign all policy, planning and
design functions relating to traffic management to the municipal authorities, reserving the law enforce-
ment function alone for the police. The draft law on traffic management of Feb 12, 2012 now points
more clearly in this direction. But it still needs a clearer delineation of the respective roles and powers.
Paper I makes the clear distinction between the responsibility for traffic analysis (including analysis of
accident statistics), system management (including design and setting of signal systems), and traffic
engineering design, all of which should be a municipal responsibility30, and the responsibility for en-
forcement of traffic law, which should be a police function. Most European countries employ such an
allocation as well as empowering municipal authorities to enforce parking regulations, both on and off-
street, while retaining for the police the important role of enforcing the law on moving traffic as well as a
residual power to act against any parking infringement deemed to be a safety hazard.

The Proposed Reform: Clarification of the allocation of responsibilities along the more com-
mon European lines should be contained in a new Law on Traffic Management. The new law
should recognize that the functions of traffic management include not only improving road safety but
other objectives for instance giving priorities for public transport and non-motorized transport (see
definition of traffic management in Section 2.2.3). Municipal authorities, not the police, should have
complete authority on the design, implementation, operation and ownership of all traffic management
schemes (both physical and operational). The police may be consulted but they should have no role in
approving such schemes. This proposed reform would require careful amendments or repeal of exist-
ing legislation on police powers, including the Federal Law No.3-FZ of 2011“On Police” and the Presi-
dential Decree of Russian Federation N 711 from June 15, 1998, which assigned duties on matters
relating to road traffic of the State Inspection of Road Safety (traffic police).

2.5.6. Functional Roads Classification

The Issues: Current guidelines for the classification of roads are stated in terms of their physi-
cal characteristics and/or traffic levels but do not adequately reflect the function of urban
streets and roads. The most recent SNIP relating to urban road classification and design was drafted
in 1989 within the framework of document on planning and development of urban and rural settle-
ments. While the SNIP does provide guidance both with respect to functionally classifying roads and
providing basic road design guidelines, it was prepared at a time when motor vehicle ownership and use
was a fraction of current levels in Russia, and does not fully reflect current best practices as established
in many countries. This can lead to confusion with respect to road design, proposed road investments,
and in maintenance planning. An improved urban functional classification of roads is needed to better
reflect the desired road function and the type of improvements which might be needed to best achieve
this function.

The Proposed Reform: In order to clarify the situation, new criteria need to be established for
the functional classification of roads at the national level. Inter-governmental transfer of funds
related to road investment or maintenance could then be made conditional on the municipality hav-
ing introduced a compatible classification as the basis of its investment and maintenance requirement
estimates. This should be referred to in the Traffic Management Law. The financial implications of this
would also need to be provided for through an appropriate amendment of the Budget Code.

2.6. ASSESSMENT OF LEGAL AND REGULATORY IMPEDIMENTS #4: PARKING
PLANNING AND MANAGEMENT

Paper I pointed out the great importance of parking policy to an integrated urban transport strategy.
In particular, the control of on-street parking, including the right to charge for it, is important for three
reasons. First, for any given level of traffic, flow can be improved by ensuring that scarce road space is
used for moving traffic rather than for storing immobile vehicles. This is a situation that is likely to ap-
ply to all small- and medium-sized cities. Second, for the larger cities where there is insufficient road

30 In this and the following sections the term “municipal authorities” is used to refer to civilian agencies other than the police.
capacity on the major access roads to handle unconstrained private automobile access, parking policy may be the most easily manageable form of traffic restraint. Third, by exercising control over parking availability and pricing, municipalities can reduce the amount of excess movement of vehicles hunting for parking space, and hence reduce congestion. At the present time, there are a number of significant impediments to the introduction of a strategically oriented parking policy.

2.6.1. The Legal Status of Parking Policies

The Issues: The current legal provisions for parking control are technical and non-strategic. Sub-clause 21 Article 1 of the Urban Development Code defines “parking” (parking space) as a specifically designated, developed, and equipped part of a road intended for organized parking of vehicles on a paid or unpaid basis. Federal Law No.257-FZ dated August 8, 2007 “On Automobile Roads and Road Activity” as amended by Federal Law No.69-FZ “On Amendments to Certain Legislative Acts of the Russian Federation”, dated April 21, 2011, empowers regions to issue resolutions on formation and use of such parking spaces on a paid or unpaid basis on regional and inter-municipal roads and municipal authorities to decide issues on formation and provision of functioning of parking spaces on municipal roads. This power is limited by the Traffic Rules approved by the Government Resolution No.1090, October, 1993, which specify a list of places where stops for vehicles are prohibited. This body of law and its enforcement is primarily concerned with safety and efficiency of movement. However, none of them—the Law, the Traffic Rules, or Article 8 of the Development Code—is concerned with limits on the total amount of available parking spaces or the allowable duration of parking as part of a comprehensive municipal transport strategy. Any more sophisticated parking strategy, which is the lynchpin of urban traffic management policy in many European cities, is not currently provided for in Russian law.

The Proposed Reform: The most appropriate reform would be to provide for the inclusion of all aspects of parking control—both on-street and off-street—within the powers assigned to the cities in the New Traffic Management Law. This would address the central problem that parking policy is not recognized as a crucial element in urban traffic management strategy. The new law should include explicit provisions to allow municipal authorities to perform the full range of parking-related activities, including specifying the maximum time limit and charges. This could be accompanied by advice from the National Urban Transport Advisory Facility (Paper III) on the aspects of municipal parking policy. Some more specific issues relating to the strategic use of such regulations are addressed separately for off-street and on-street parking in the sections which follow.

2.6.2. Off-Street Parking Regulations in Development Control

The Issues: The treatment of parking in development control in Russia is now well attuned to current best practice. In more successful cities, off-street parking standards for new developments play an important role in managing demand for car trips and mitigating congestion. In residential areas, and for commercial developments in areas where there is not excessive congestion, it is common to set minimum standards for mandatory parking spaces to be provided by developers. This would keep parked vehicles off the road so they would not interfere with traffic flow. In contrast, in congested areas such as city centers, where the city strategy is to encourage the use of public transport and discourage access by private cars, maximum standards are set, often limited to meeting the direct operational requirements of the business. In Russia, there are currently two problems in this area. First, the minimum off-street parking guidelines are out of date and do not match the current levels of motorization (except standards, which are in force in Moscow). Second, regardless of the level of congestion, the minimal standards are always applied, without recognizing the possible demand management function of establishing maximum parking standards in congested city areas.

The Proposed Reform: Parking should be addressed strategically within the New Traffic Management Law, which would supersede any standards set within the Urban Development Code.
On parking standards, cities should be empowered to set out a comprehensive parking strategy in line with their city transport strategy. A parking strategy should specify the minimum level of parking that should be provided in residential and other developments that are not major trip attractors, and the maximum levels for commercial developments in areas where the development will exacerbate traffic congestion. While higher levels of government may offer guidelines they should not mandate standards, which should be determined at the individual city level.

2.6.3. Regulation and Charging for On-Street Parking

The Issues: The strategic role of parking charges is not currently well provided for. To be able to design and enforce an effective traffic regulation policy municipalities need authority to effectively regulate the duration of all on-street parking, both for paid and non-paid parking spaces. Use of revenues from user charges for the purpose of improvement of urban transport systems would help winning public and political acceptability of the charging schemes. The inability of city governments to set parking fees and conditions appropriate for their local circumstances and strategies has been a problem in many cities in Eastern Europe. For example, the maximum prices set by the national government in Poland, while reasonable in many of the smaller and medium sized cities, are not adequate to have the effect of discouraging commuting trips by car in Warsaw, the largest metropolitan area of the country. Under Federal Laws No.131-FZ and 257-FZ as amended by Federal Law No.69-FZ, any state or municipal government in Russia is now empowered to enact its own local legislation or regulation on paid on-street parking, including designating areas where on-street parking is banned, setting different time limits of parking, and setting parking charges for paid on-street parking. But this refers only to parking on streets owned by any particular jurisdiction and does not provide the basis for establishing a comprehensive municipal parking strategy (e.g., a municipal parking law concerns only municipally-owned roads).

The Proposed Reform: The New Traffic Management Law should give municipalities all necessary powers to implement a strategic parking pricing regime. It should permit municipalities to set any range of time limits for parking either for paid or non-paid parking spaces, and to determine the fees that shall be charged at different times and in different locations within the city, on all roads within the city limits. The municipalities should be able to keep all such the revenues regardless or not some of the parking is along federal or oblast designated routes within municipal boundaries.

2.6.4. Enforcement of Parking Policy

The Issues: Under existing law, only the traffic police have any effective powers of enforcement. Control of infractions of stopping rules is part of the activities of the traffic police defined in Presidential Decree No. 711 of June 15, 1998, with powers of enforcement specified in the Order of the Ministry of Home Affairs No. 185 of 2nd March, 2009. Some of the municipal and regional regulations on on-street parking developed since the passing of Federal Law No.69-FZ provide for penal rates to be charged for vehicles that overstay the period for which they have paid. They nevertheless eventually rely on the police to initiate prosecutions or to immobilize or remove vehicles at the request of the designated municipal parking authority. The problem is that the traffic police often have inadequate resources (and hence diminished inclination) to effectively enforce parking regulations. Hence it would be advisable to allow municipal authorities to issue parking tickets as in many other European countries (though the ultimate prerogative over enforcement would still rest with the courts). Another issue is

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31 This may be limited to municipalities that are above some minimal threshold size (e.g., a population of 250,000) and have developed a comprehensive parking strategy.

32 This is consistent with the recommendation that all streets within municipalities should be owned by the city whether or not they are designated as federal or regional level routes.
that, under Sub-Clause 6.2 Clause 1 Article 46 of the Budget Code of the Russian Federation, all fines collected by the Traffic Police go into the budgets of the Regions. It would appear that all parking fines would be covered by this article of the code. Municipalities thus have no control over either the level of fines imposed for parking offences.

The Proposed Reform: The respective roles of the police and the civilian authorities should be clearly distinguished and separated. To do this it would be necessary to make a clear legal distinction, common in many European countries, between infractions of the law by moving traffic, which would remain the prerogative of the traffic police, and infractions of parking regulations, which would be a matter for the municipal authority. To separate enforcement of traffic laws with regard to moving vehicles from enforcement of regional or municipal laws on parking would require a change in Federal Law No.3-FZ, 2011 “On Police”, where the responsibility of traffic police is defined. Ideally municipal governments (or contractors to municipalities) should be able to initiate the process of prosecution for all parking infractions, to determine the scale of fines imposed, and to retain the revenues from fines for municipal purposes without restriction by federal or oblast laws or regulations on the level of fines to be charged.

2.7. ASSESSMENT OF LEGAL AND REGULATORY IMPEDIMENTS #5: PUBLIC TRANSPORT

On the basis of the experience of other successful European cities, Paper I argued that Russian cities should move towards a single-tier transport supply system in which fare concessions would be valid on all services. Services would be operated under competitively tendered contracts with the municipal authority. Contracts would be let on a “gross cost” basis, with the municipal authority collecting the fare revenues, paying operators for the provision of services on the basis of their bids for the costs of the service. In this arrangement all modes and services would come under a common municipal regulatory regime, with no preference shown in competition between corporatized municipal and private operators.

There are however, a number of legal and organizational impediments to achieving this in the short-term arising from existing laws on the power to regulate, processes of procurement—including contracting and competitive tendering, fare regulation, and compensation for social fares—the role of municipal unitary enterprises, and the fragmentation of the private sector suppliers.

2.7.1. The Regulatory Power

The Issues: The fact that urban transport is not included in the list of subjects reserved for the Government of the Russian Federation, or shared between the Russian Federation and its subjects, implies that this is a prerogative of the subjects of the Russian Federation. Also by implication urban public transport might be construed to be the sole responsibility of the regional governments. Further, Federal Law No.184-FZ, “On general principles of the organization of legislative (representative) and executive authorities of subjects of the Russian Federation”, October 6, 1999, specifically assigns the power to establish all public transport tariffs for services to the state executive authorities of subjects of the Russian Federation. Hence the only cities that have this regulatory power are St. Petersburg and Moscow, which have special federal status as subjects of the Russian Federation and municipal formations at the same time. It is notable that St Petersburg has already prepared a comprehensive long-term transport strategy, which includes the use of these powers. Other cities without the status of subjects of the Russian Federation would find it difficult to establish a similar comprehensive strategy without the power of public transport regulation. While it is possible for the subjects of the Russian Federation to pass their own laws delegating these powers to the cities (so long as they do not infringe federal laws or the Constitution), they are not obliged to do so. Moreover, because their subsidiary levels of government—the rayons and the settlements—are so diverse in size and capability, the regions may be justifiably concerned about the way in which a general delegation of their powers to
a lower level of government might be used.

Many of the medium and large cities (with populations greater than 250,000) have catchment areas for the journey to work and other major journey purposes which transcend the municipal boundaries. At present it is believed that municipalities can only operate and regulate passenger transport services within the municipality. Cross boundary services are normally regulated by the oblast. While many cities have perfectly satisfactory arrangement with the oblast, some feel that oblast regulated services undermine city regulated services and that a more effective arrangement would be for the municipal and suburban services to be jointly planned and regulated. While that raises the broader issue of metropolitan organization, discussed earlier, the matter could be addressed by an amendment of Federal Law No.131-FZ to permit cross-boundary services by municipally owned or regulated operators but also to require all cross-boundary services to have permits from both oblast and municipal authorities.

The Proposed Reform: The metropolitan nature of the urban transport problem needs to be recognized in law. The most direct way to address this issue would be to recognize that there are a number of issues—including not only urban public transport, but also possibly water, sanitation and waste management—that are best managed and administered at the conurbation level. That would involve assigning the powers of a region to more city authorities than just Moscow and St Petersburg.

The obvious way to address the issue would be through a new urban transport law applying to all large cities and city regions. It is not too difficult to see which large cities might be treated in this way, but much more difficult to set the lower limit, below which cities would still remain subsidiary to the existing regions. A slightly more devious method might be to use other powers which belong to the Government of the Russian Federation—such as that of levying taxes or making financial transfers to the regions—as the instrument for introducing reform. An example worth considering is the French system whereby the right to levy a particular local payroll tax (the “versement transport”) is made conditional on the voluntary establishment of a conurbation level strategic authority with a strategic plan. Such an arrangement would give sufficient incentive to the regions to encourage the formation of such authorities in order to benefit from inter-governmental financial transfers specifically designed to finance urban transport.

2.7.2. Processes of Service Procurement – Contracting

The Issues: Public and private sector provisions of urban transport services are not well coordinated. The legislation of the Russian Federation presently provides the possibility for municipalities to procure fixed-route passenger transport services through direct contract arrangements with municipal unitary enterprises. Where such direct arrangements are made, budget allocations for reimbursement of expenses or non-received income may be provided for under regional laws (for example, Law No. 19-4 of St. Petersburg “On the land-route passenger public transport in the city of St. Petersburg” on February 8, 2000). Fares are set, and compensation calculated on the basis of cost norms for service provision, on the principle that only a reasonable level of cost should be compensated.

The effect, however, is that municipal enterprises operate unprofitable services for which they effectively receive deficit financing from the municipality. In contrast, services procured under contracts with private sector suppliers do not usually have the obligation to carry concessionary fare passengers, and have no compensation arrangements. A distinction has therefore developed between commercial services operated by the private sector and social services operated by the municipal enterprises (usually municipal unitary enterprises; see below). This is a common arrangement across many of the countries of the former Soviet Union.

The nature of these service contracts is critical to any attempt to move to a single-tier public transport service arrangement. Article 451 of the Civil Code deals with the contract amendment in cases where essential conditions of a contract have changed. As far as the municipal operators are concerned this is not a matter of great significance as any deficits are financed fairly automatically through the compensation arrangements.
In contrast, under present arrangements for contracting of commercial services from the private sector it raises the issue of whether a decision by an authority to issue more franchises or to adjust fares alters the conditions of existing contract holders, and hence requires renegotiation. For example, suppliers who might currently be willing to serve a particular route – subject to fare control by the municipality – might not be willing to continue if a new competing parallel route were established. In a situation where all services, including unprofitable services, were competitively tendered to the bidder offering the best price, it would be necessary to renegotiate any contract subject to the adverse impact of a subsequent change in the service structures and or fares. That issue will need to be addressed in any case.

This problem of contract revision would not apply to the same extent in the case of the gross-cost contracts described earlier, as the revenues collected on a particular route are then of concern to the municipality rather than to the operator. This is a strong argument for moving to gross-cost contracting.

**The Proposed Reform: The legal provisions should be changed to create a reliable basis for integrating private sector services into a single-tier system.** To achieve this, the following changes would need to be made in the contractual arrangements:

- All services to be provided under the same type of route based contracts; and
- The same contract adjustment and compensation arrangements should apply to all suppliers.

These changes could be included in a new public transport law, or as part of the conditions for financial transfers to conurbation authorities if the less direct procedure for securing metropolitan level policy integration, considered above, were adopted.

### 2.7.3. Processes of Service Procurement – Competitive Tendering

**The Issues: Competitive tendering of urban transport services is presently used in a partial and excessively mechanical way in Russia.** Paper I argues the merits of moving all contracts on to a competitively tendered basis. The present situation with respect to public transport is that Federal Law No.94-FZ of July 21, 2005 “On Placement of Orders to Supply Goods, Carry out Works and Render Services for Meeting State and Municipal Needs” requires all services involving payment by public authorities to be put to competitive tender, but where there is no such payment, competitive tendering is not obligatory. Federal Law No.94-FZ, 2005 sets out the conditions under which contracts of government institutions must be procured. The result is that some cities, which issue contracts for services to be provided by private operators without any obligation to carry concessionary fare passengers and without any deficit payment by the municipality, do not use competitive tendering. A similar exemption from the obligation to tender appears to apply to services provided by unitary municipal enterprises.

Under present arrangements this would raise a serious problem of fair competition. Article 124 of the Civil Code states the principle of dealing on equal terms between all parties, including the municipalities and the private legal entities. At present the private enterprises have to provide, maintain and replace their vehicles and other assets out of their own resources, while the municipal unitary enterprises have their assets provided and replaced, off their budgets, by the municipal owners. That position would have to be changed if effective competition was to be assured. This is not just a matter of equity but also one of efficiency. Private suppliers would be unlikely to wish to compete with a municipal enterprise receiving direct subsidy of its vehicles, with the consequence that services would probably not be provided by the most efficient supplier available.

A further issue concerns the criteria for choice of supplier. Federal Law No.94-FZ does not specify the form of contract or the criteria for choice, which is left to the discretion of the municipality. In most cases cities have chosen to specify fares and frequency of service for services to be run commercially (with no

33 In accordance with Article 4 of the Federal Law No.94-FZ “Acting as procurement agents on behalf of federal and municipal government authorities are government bodies, bodies of management of state off-budgetary funds, bodies of local self-government and other recipients of funds from the federal budget, the budgets of the constituent territories of the Russian Federation or local budgets in the process of placement of orders for the supply of goods, performance of works and provision of services to be financed from budgetary and off-budgetary sources”.
subsidy or premium payment for the franchise). Typically a multi-criterion selection procedure is used, but without any financial element involved. The determining factor is often the age or type of vehicle offered. Given the possibility of subsequent additional franchises being granted, and in the absence of any clear procedure for compensating existing operators for changes which damage the commercial viability of the franchises which they hold, this typically discourages the interest of serious long-term investors and limits the benefit that can be obtained from competitive tendering.

The Proposed Reform: Legal reform is required for competitive tendering of bus services in Russia to yield the kind of benefits that have been obtained in European countries. For main legal changes are necessary as follows:

- Competitive tendering should apply to all services, irrespective of whether the franchisee will receive payment from the municipality or not;
- The selection criteria should include a financial element—either positive or negative—which would allow traditional social services to be put to competitive tender as well as potentially profitable routes;
- The law should provide for contracting by the authority on a gross-cost basis—34—with the franchise awarded to the supplier offering the desired quality of service on the terms most favorable to the municipality;
- A condition for entering the competition should be that the bidder, whether publicly or privately owned, should not be in receipt of any form of direct or indirect subsidy which gave him an unfair advantage in the competition (this would involve reforming the municipal unitary enterprises in Section 2.7.6).

As these conditions differ from those presently included in Law 94, there would need to be either an amendment of that law (which might by complex as it applies to many other services than urban public transport) or a new specific law on urban bus competition. There are several examples of similar laws in Europe, including the United Kingdom, Sweden, Denmark, Finland, etc.

2.7.4. Fare Determination

The Issues: Urban public transport fare setting is not fully under municipal control. Under Federal Government Resolution No. 239, dated March 7, 1995, "On Measures for Streamlining the Procedure for State Regulation of Prices (Tariffs)", executive authorities of the subjects of the Russian Federation are empowered to regulate the tariffs for passenger public transportation. The regulation is effective for all enterprises that carry out obligations of public carriers, including taxi transportation organizations. This regulation may take the form of specific flat fares or trip distance related fare schedules, limit prices, premiums and coefficients for price adjustments (Clause 7 of the Resolution). Any tariffs set at levels not conforming to the fixed tariffs, or exceeding the limit tariffs, render the individuals or legal entities charging them liable to prosecution in accordance with Article 14.6 of the Code on Administrative Violations of the Russian Federation. In the absence of any such tariffs set by the regulatory authority, court practice has been to allow providers of public transport to apply their own tariffs, without applying for authority to do so. In practice, however, the fares are usually set by the regions on the basis of some cost norms and assumed ridership levels and adjusted according to changes in the cost of inputs. For example, in St Petersburg tariffs are indexed to the rate of inflation by Order No. 34-p of Economic Development, Industrial Policy and Trade Committee 2005. The effect of this arrangement is that municipalities have only limited freedom to vary tariffs in response to local considerations and hence lose control of an essential element of a comprehensive urban transport strategy.

The Proposed Reform: To address this, municipalities should be given the power to set fares for services wholly within their jurisdiction, and in agreement with neighboring jurisdictions for cross-boundary services. This could be achieved either through a new public transport law or through a federal government resolution superceding Resolution 239, 1995.

34 Net-cost basis approach may also be permitted.
2.7.5. Concessionary Fares

The Issues: The power to grant concessionary fares is not adequately supported by a system of compensation to operators. Concessionary fares are mandated under several different pieces of legislation, with compensation responsibility and channels varying according to the source of the grant of the concession. Those that are mandated nationally are, in principle, compensated by the federal government which makes transfers to the regions (Resolution of the Government of St. Petersburg Russian Federation No. 1569 dated December 28, 2009, “On Implementation of Some Laws of St. Petersburg Envisioning Measures for Social Protection of Certain Categories of Citizens and Bringing Some Regulatory Acts Issued by Bodies of Executive Power of St. Petersburg in Line with the Applicable National Legislation”). These moneys are then, in principle, transferred on to the operators at the local level under arrangements made by the regional government. Concessions that are mandated regionally are compensated from the regions’ own budgets. For example, under the Resolution No. 833 of the Government of St. Petersburg, dated July 21, 2009, “On the Tariff Concept Policy of St. Petersburg”, subsidies for bus route carriers on town, suburb and inter-town routes that have concluded passenger transportation contracts with the Transport Committee are provided for in the annual budget. In principle this applies to both public and private carriers, though in most cities only the public sector carriers carry concessionary fare passengers and qualify for the compensation. This is not an unusual arrangement, though in most countries it is the pensioner and student concessions which are mandated and compensated nationally whereas in Russia these are regional mandates.

The special issue in Russia arises from the fact that municipalities, which provide or manage the services, are third-level authorities, at one or two levels below the authority with the power to mandate concessions. Many cities appear to believe that they are not adequately compensated for the concessions, but have no option but to observe them. In particular there is concern about the pass-through arrangements for federal subsidy moneys.

The Proposed Reform: Those who provide services, whether public or privately owned, should be properly and transparently compensated by those who mandate the concessions. As with several other issues, the problem is primarily a result of the low level of the municipalities in the hierarchy of levels of government, and also related with the overall arrangement of intergovernmental transfers. Nevertheless, this issue can be addressed separately without major changes in the other laws that concern intergovernmental relationships and transfers, rather through dealing with accounting arrangements. First, for the concessions mandated by the federal government, automatic pass-through of compensations should be established directly from the federal government to municipalities, without requiring intermediary handling of regional governments. In order to establish and implement automatic accounting and transfers of compensations, municipalities would need to capture and provide public transport use and revenues data. This can be done more easily if electronic ticketing systems are widely used. Second, regional governments should be allowed to mandate concessions for the services planned and provided by its subjects, only if they provide direct (and preferably automatic) compensations from the region’s budget. Municipalities may be allowed to establish their own concessionary fares, for the services provided within its jurisdictional boundary, which should be paid for from their own budget.

2.7.6. Municipal Unitary Enterprises

The Issues: The current status of the municipal unitary enterprises is an impediment to the development of a sustainable urban transport system. According to the Civil Code, municipal unitary enterprises (MUEs) do not own their fixed assets and hence cannot act commercially in providing for maintenance and replacement of those assets. Moreover, the owners of the MUEs’ assets can establish, and from time to time change, the financial limits within which the MUEs must act in employing the municipal assets. The MUE is thus not obliged to cover the full costs of operation and is not subject to a strict bankruptcy constraint if its financial losses mount (though the municipality can wind up the
enterprise if it wishes). The formal justification of this loose financial condition is that the MUEs are the instruments of the municipality in pursuing social objectives, particularly with respect to general fare levels and concessionary fares. However, the consequence is that in most cases only the MUEs have the obligation to honor reduced fare concessions, and there is no basis for direct competition between MUEs and private enterprises for the right to supply the social services. Any potential efficiency gains or cost savings which might be achieved through such competition are therefore lost.

The Proposed Reform: The proposed shift to a system of comprehensive competitive tendering (Section 2.7.3) would imply substantial legal changes concerning the MUEs. Two approaches are possible: (i) the nature of the unitary enterprise as defined in the code should be changed to require them to behave commercially and subject to the normal bankruptcy provisions of a legal entity; or (ii) all unitary municipal enterprises be terminated and the municipal assets privatized. Neither of these changes could be introduced overnight. So the proposed reform could start with negotiating contracts with municipal unitary enterprises to transform them into commercial entities. The MUEs might be given a period of grace (a maximum of five years), after which all public operators will be put to competitive tender. This solution worked well in London. This may not necessarily require a change in the Civil Code. It can be stipulated by a concession law that can be enacted by a regional government. For example, the regional PPP law of St Petersburg requires that assets are permanently transferred to a municipal unitary enterprise that enters into a contract with a (municipal) government. This process would be subject to the law on privatization.

2.7.7. Small Unit Scale of the Private Sector Operators

The Issues: In most Russian cities, the private sector bus industry consists of many individual or small company operations, which make it more difficult to develop a responsible supply arrangement. Two main factors contribute to this. First the service permit system allows the permit holder to subcontract operation to smaller associates. Second it has been asserted that bus operators choose to remain fragmented because of the different tax regimes applied to operators of different size.

The Proposed Reform: Changes should be made either to the tax code or to the procedures of competitive tendering of services to encourage the development of larger commercial transport companies. The conditions of the Tax Code that cause the size distortion arise from a policy to encourage small enterprises of all sectors, not just public transport. Hence, it may be too difficult to achieve the objective through amendment of the Tax Code. It is therefore proposed that it should be achieved through amendment of the tender conditions for public transport franchises. This would require legal provision that lots for tendering should be of some reasonably large minimum size, with the requirement that the franchisee must have enough vehicles in his direct control or ownership to operate the service. Subcontracting to individual operators on a systematic basis should not be allowed (though there might be a need for some emergency arrangements). This might be dealt with in an amendment to the Federal Law No. 94-FZ or in a new public transport law.

2.7.8. Taxi Service Regulation

The Issues: Economic regulations of the provision of taxi services are not currently within the powers of the municipality. In most countries taxis were historically regulated for public safety reasons, with regional or national standards being applied to the quality of the vehicle, the safety, and responsibility of drivers. Fare control was exercised to prevent unscrupulous operators exploiting a captive customer. In Russia, under Federal Law No. 69-FZ “On introduction of changes to certain regulatory acts”, dated April 21, 2011, the general qualitative conditions for taxi regulations, such as the obligation to use a meter and to have a minimum level of driving experience are established by federal law. Application of this law to the issue of permissions, however, is a function of the oblast. For example, Moscow, within its own legal powers, has taken actions to avoid what it considers undesirable effects on the total
supply of taxi services. It is considered quite appropriate that the quality control should continue to be defined at the federal level and implemented at a regional level. However, taxis are essentially local in operation and so the economic regulation of the sector should be part of the municipal responsibility.

The Proposed Reform: It is suggested that provision for economic regulation should be transferred to the cities as part of an urban transport law. There is a great deal of international experience and analysis on various forms of economic regulation on taxi market, from which Russian cities can learn lessons. The proposed National Urban Transport Advisory Facility (Paper III) should facilitate the knowledge-sharing and learning and provide support to cities in writing suitable legislation.

2.8. RECOMMENDATIONS FOR SPECIFIC AMENDMENTS OF THE CURRENT LEGAL AND REGULATORY FRAMEWORK

What has been most striking is that the complex interaction between these separate areas is not currently recognized in the legislation of the Russian Federation, with the consequence that there is often lack of consistency and coordination, and sometimes fundamental conflict, between the sub-sector policies.

The resolution of this problem suggested by best international practice is the concentration of powers and responsibility for all aspects of urban transport at the level at which it can be most effectively implemented. This is usually at the municipal or metropolitan, as opposed to regional or federal government level. Consistency of sub-sector policies is achieved through the existence of a high level urban transport strategy, to which all functional policies should conform. Effectiveness of implementation is pursued through the existence of reliable and predictable sources of finance for the implementing agencies. That is what we suggest should be the objective of a legal and regulatory reform program for urban transport in the Russian Federation. The establishment of a manageable blueprint for such a reform program is thus very important. Two main strategies should be considered.

Sections 2.3 through 2.7 identified the needs for legal and regulatory reform on a subject by subject basis under five major reform agenda, key areas of which are listed below (see Table 2.2 for a fuller description of the proposed reforms).

- Provision of a complete and adequate technical definition of an urban transport system and its elements;
- Allocation of strategic responsibility to municipal or metropolitan authorities;
- Establishment of the obligation of the responsible authority to prepare a comprehensive urban transport plan;
- Reform of fiscal arrangement for strategic transport authorities, including taxation powers and procedures for inter-governmental transfers;
- Amendment of the Budget and Tax Codes where necessary;
- Functional allocation of responsibilities, particularly in respect of traffic management and safety;
- Amendment of the urban planning code to provide closer link with transport strategy;
- Creation of clearer and more extensive powers over traffic management;
- Development of new comprehensive powers over parking, both on-street and off-street, including the determination of parking charges;
- Reform of the regulatory system for urban passenger transport to permit and encourage the responsible authority to eliminate the existing separation between the social and commercial public transport services;
- Revision of the laws on competitive tendering as applied to urban transport services to facilitate modally integrated public transport development;
- Revision of the nature and status of the unitary metropolitan enterprises to conform with the reformed procurement arrangements;
- Clarification of the allocation of responsibilities for safety and for environmental protection in respect of urban transport.
Given the extensive reform requirements, implementation should be carefully prioritized and sequenced. The proposed reforms would be a serious undertaking that requires considerable inputs of technical and legal expertise as well as political consensus-building, which could be time-consuming and costly. In order to achieve the best outcome within a reasonable time frame and resources, the reforms should be built upon the ongoing initiatives of the Government, including the Draft Law on Traffic management, and appropriately prioritized and sequenced.

Moreover, a disaggregated approach, involving several topic-specific laws, is likely to be more manageable administratively than attempting to create a single comprehensive law on urban transportation. For example amendments to the urban planning code might appear to be relatively free standing, as might changes in the arrangements for public transport supply. That approach would also allow the changes that were least controversial, or least difficult to design, to be implemented first. The danger, however, is that, such a piecemeal approach would miss the essential need for sub-sector policies to be consistent with an overall urban transport strategy. Ideally the fundamental strategy-related changes should be in place before handling the more technical matters.

2.8.1. Review of the Ongoing Legal Initiatives by Government

The Draft Law on Traffic Management and Federal Law No. 69: Since the commencement of this study, the government has taken important steps to improve the legal framework concerning traffic management and parking. Law 69 has already made some significant changes in respect of on-street parking and taxi regulation. Further, the Concept of a Draft Law on Road Traffic Management prepared by the Ministry of Transport covers a great deal of the ground dealt with in the present paper, particularly on traffic management and parking. As far as traffic management and parking is concerned, the general philosophy expressed in the Draft Law, as set out in the preamble to the paper generally coincides with what is suggested in Paper I. A law along the lines proposed would therefore be an important step in the right direction.

In several areas, however, Law 69 and the Draft Law do not appear clear, are not in consistent with the sustainable urban transport strategy, or require additional content. The main issues are as follows:

• Strategy context. Neither Law 69 nor the Draft Law places the provisions on traffic management and parking within the broader context of a strategic municipal transport plan;
• Objectives of traffic management. The Draft Law states that one of the objectives of road traffic management is “uninterrupted” flow, which may be interpreted wrongly. There is danger that this is viewed to promote high-speed and unstopped vehicular traffic, at the expense of pedestrian access, road traffic safety, and public transport oriented development that restrains the road spaces used for private cars;
• Relationship with land-use planning. As it is currently written, the Draft Law may be interpreted as an exhortation to increase provision for parking in all circumstances. This provision appears to be inconsistent with the strategy proposed in Paper I, which supports development norms that restrict parking provision in congested areas as an important instrument to create a sustainable urban transport system. On the other hand, the proposal to strengthen the relationship with land use planning, and particularly to require that the relevant transport departments in the municipalities should be involved in ensuring developments, is consistent with the proposals of this report. So is the proposal that there should be proper attention to the norms for parking associated with developments;
• Integrated institutional responsibility for traffic management. The Draft Law appears to allocate the responsibility for traffic management on different categories of road to the specific level of
jurisdiction within which a particular road falls. This implies that there may be three different traffic management authorities with jurisdiction within an urban area—federal, regional and municipal—in which case it would be difficult to devise and implement a coherent traffic management plans that cover the entire city and catchment areas;

- Parking law and responsibilities. Law 69 provides new powers for municipalities to restrict traffic on a temporary or permanent basis in order to improve the general traffic situation in the municipality. The law also provides for enforcement of parking policy and treatment of infringements by a civilian agency, provides powers to disable or remove vehicles, and specifies fines for infringements. It is not clear, however, that the municipality has all of the necessary powers to implement and enforce its own parking policy;
- Parking Enforcement. The Draft Law does not appear to give strong enough powers of enforcement to the civilian authorities.

More importantly, these two initiatives omitted some critical strategic transport planning issue, such as the relationship between land use planning and transport planning for road provision, and do not touch on public transport, with an exception of taxi regulation which is dealt with in detail in Law 69.

2.8.2. A Sequenced Approach: Expanding the Scope of the Reforms

This paper proposes a sequenced approach to legal and regulatory reforms that builds upon the ongoing initiatives and gradually expands the scope. The following three steps are proposed: As first priority, the Draft Law needs to be refined and completed, closing the gaps identified above. Specifically:

- **Strategy context.** The introduction of a new comprehensive law on traffic management and parking is an excellent opportunity to give encouragement to both regions and municipalities to develop comprehensive strategies. One possible way of doing this would be to make the grant of new powers to the municipalities conditional on the preparation of an acceptable strategic plan or policy framework statement;
- **Objectives of traffic management.** The concept of “uninterrupted flow” should be more clearly defined, and an emphasis should be given to the flow of people and goods, rather than vehicles;
- **Relationship with land-use planning.** The law should provide for tailoring the parking norms to the requirements of a strategy, rather than mechanically requiring minimum parking spaces. In this case, municipalities would be able to set not only minimum, but also maximum standards for parking in congested areas, if required by a strategy;
- **Integrated institutional responsibility for traffic management.** The Draft Law should make clear that the whole of traffic management policy and its implementation should fall to one responsible agency – normally the municipality (i.e., all roads within the municipal boundaries). Where the ownership of roads means that higher level jurisdictions must be engaged in works on the parts of the road system which they own, the obligation should fall on them to coordinate with the unitary traffic management authority. An alternative way of securing the same objective of integrated traffic management would be to transfer ownership of all roads within the municipal areas to the municipalities, with the provision that funding would still be available from higher level jurisdiction for improvements or maintenance of the higher level roads in agreement with the municipalities;
- **Parking law and responsibilities.** The Draft Law should grant municipalities the power over (a) the planning norms for parking in different locations (b) the level of parking charges, both for on-street and off street parking (c) the level of fines to be imposed for parking infringements;
- **Parking Enforcement.** Civilian officers should be granted the power to enforce on-street parking both in illegal parking areas and in areas where parking is allowed but where there are restrictions on duration of parking and where charges for parking are in effect.
Second, it is necessary to enact a comprehensive law on passenger public transport. This law would codify and consolidate all matters relating to the efficient procurement, regulation and supply of all modes of urban public transport. It would clarify the responsibilities of the municipality in procuring service through comprehensive competitive tendering of franchises and define the rights and duties of the municipality in respect of determining network structure, frequency and fares of all public transport modes, including commuter rail service. It would also provide for restructuring of traditional unitary municipal or state enterprises consistent with the system of competitive tendering. It would specify both the powers of authorities to mandate fare concessions for selected categories of passenger and the associated provisions for compensation for any such mandated concessions. The new law on public transport would also encourage establishment of some intermediate form of metropolitan authorities, similar to coordination committees established in Moscow and St. Petersburg metropolitan areas, but with stronger technical basis and steady funding supports. Integration of public transport operation—route planning, fare systems and scheduling—should be pursued by a metropolitan authority.

Third, in the medium-term, these two laws—the Draft Law on Traffic Management and the proposed law on passenger public transport—may be integrated and extended into a Law on Municipal and Metropolitan Urban Transport. This law would define urban transport in a comprehensive way and assign responsibility for it to municipalities or metropolitan associations, together with establishing the basis for sustainable finance of urban transport. It would oblige the responsible authorities to establish comprehensive urban transport strategies as the basis for financial support from the federal and regional governments. The municipal strategic transport plan would be given precedence in defining the objectives for other aspect of the comprehensive policy development such as traffic management, demand management and urban public transport laws and procedures. In the medium-term, the formation of a metropolitan authority, which would have been a recommended practice under the above passenger public transport law, would now become a mandatory practice or conditionality if cities want to receive federal assistance on technical capacity building and/or financial support.
### Table 2.2. Summary of Proposed Legal and Regulatory Reforms

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<td></td>
<td>B. Jurisdictional responsibility</td>
<td>Decree No. 184 of the Russian Government “On Federal Transport Oversight Service issues” April 7, 2004; Federal Law No.196-FZ “On road safety” dated December 10, 1995</td>
<td>Some urban transport functions are at oblast and some at municipal level Current assignment of responsibilities makes it difficult for municipalities to develop a comprehensive strategy.</td>
<td>Municipalities should have clear responsibility for all transport services and facilities within the municipal boundary.</td>
</tr>
<tr>
<td></td>
<td>C. Metropolitan agglomeration</td>
<td>Article 132 of the Constitution of the Russian Federation</td>
<td>Transportation operations and investments are increasingly transcending municipal boundaries No current legislation explicitly provides for creation of metropolitan transport entities with designated operational and financial authority. Inter-jurisdictional issues within an oblast are being dealt with by the oblast government.</td>
<td>Need legislation that permits legal metropolitan entities with the prescribed operational and financial authority to provide services and facilities within the entire metropolitan areas consistent with Article 131 of the Constitution.</td>
</tr>
<tr>
<td></td>
<td>D. Fiscal and financial arrangements</td>
<td>Tax code, Budget code</td>
<td>Municipalities have small fiscal resources and depend primarily on transfers from the regions made annually on a “request and negotiate” basis. This prevents municipalities from developing and implementing consistent long term transport strategies.</td>
<td>The Budget Code should be amended to provide for transfers from regions to municipalities to be moved progressively on to a formula basis, subject to meeting specific planning performance and implementation conditions.</td>
</tr>
</tbody>
</table>
### 2: Strategic Transport Planning

#### A. Strategy development

There is currently no basis in law for the establishment of Strategic Municipal Transport Plans. Urban transport planning is currently limited in scope with a heavy emphasis on major capital investments, and is typically not suitably constrained with respect to likely available financial resources. Municipalities need to develop more comprehensive urban transport strategies that take into account city objectives and which are financially realistic.

Guidelines should be prepared to assist cities in developing more comprehensive urban transport strategies that reflect the views of citizens and which have realistic expectations of implementation.

#### B. Urban Development Code

Town Planning Code Adequate and timely transportation investments are not always provided in response to land use developments.

Guidelines should be developed for conducting traffic impact assessments. A new law should permit cities to require developers to either provide needed transport infrastructure, or fees in kind for provision of infrastructure required by impact assessments.

#### C. Implementation capability and skills development

Federal Law No.257-FZ "Road transport and city ground electrical transport charter" November 08, 2007

Municipalities do not control all aspects of urban transport and therefore cannot implement all aspects of their transport strategies. Further, there is no professional certification of urban transport professionals.

Clearer specifications of municipal and oblast responsibilities should be established. A review is required of alternative methods of developing professional post-experience training and certification in the areas of traffic engineering, urban transport planning, and public transport regulation and procurement.
### 3: Traffic Management

<table>
<thead>
<tr>
<th>A. Allocation of responsibilities</th>
<th>Federal Law No 3-FZ “on Police” July 2, 2011</th>
<th>Responsibilities of for traffic management not entirely clear with respect to traffic police and municipal authorities which leads to gaps and overlaps in executing traffic management activities and investments. Current concept of traffic management too limited in scope.</th>
<th>Need an appropriate law and regulations to clarify the respective roles of municipal authorities and the traffic police and to broaden the powers of the municipalities in traffic management.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Ownership of assets</td>
<td>Constitution Articles 71 and 72 Federal Law 131-EZ “On the General Principles of Local Self Government in the Russian Federation” October 6, 2003</td>
<td>Ownership of traffic management assets is divided among the traffic police, oblasts, and cities in some locations. This hinders effective management and operation of the assets.</td>
<td>Ownership of traffic management assets needs to be transferred to municipal governments.</td>
</tr>
<tr>
<td>C. Functional roads classification</td>
<td>Town Planning Code Federal Law No. 257-FZ, “On Roads and Road Activities in the Russian Federation and Introduction of Amendments into Some Legislative Acts of the Russian Federation”, dated November 8, 2007, Article 5</td>
<td>Current guidelines for the classification of roads do not adequately reflect the function of urban streets/roads, and need to be improved to better reflect the desired road function and the type of improvements which might be needed to best achieve this function.</td>
<td>Updated guidelines are required for the functional classification of urban roads along with revised standards for the development of these roads.</td>
</tr>
</tbody>
</table>

### 4: Parking planning and management

<table>
<thead>
<tr>
<th>A. Legal status of parking policies</th>
<th>Urban Development Code, Article 1 Government Resolution 1090, “On traffic rules” October 23, 1993</th>
<th>Under the current law, short-term parking is defined as stopping of vehicles on the roadside for shorter than 5 min (thus, in fact stopping). But any other parking activities are not legally defined. Definitions need to be made clear in order to have legal basis of setting time limits of parking and associated fines.</th>
<th>Comprehensive new law required treating parking as a transport strategy instrument</th>
</tr>
</thead>
</table>
### B. Off-street parking regulations in development control

**Town Planning Code**

Off street parking guidelines are out of date with respect to setting reasonable off street parking requirements for both residential and commercial developments. Cities need authority to enforce limitations on minimum or maximum parking space for new developments.

Need new guidelines for residential and commercial parking by type of city district.

### C. Regulations and pricing for on-street parking


It is unclear whether cities may set limits on the duration of legal parking in free on-street parking spaces. Municipalities need authority to effectively regulate the duration of on-street parking, both for paid and non-paid parking spaces.

Further legislation is required giving cities power to set any range of time limits for parking either for paid or non-paid parking spaces.

### D. Enforcement of parking offenses


Municipalities need effective control over the issuing of fines in enforcing parking regulations. Currently cities are not allowed to levy fines for illegal parking and for parking too long in allowed parking spaces (both in paid and non-paid parking areas); in principle, oblasts can enact legislation on fines as long as time limits are defined for parking. Municipalities need to have effective control over the issuing of fines as a practical matter in enforcing parking regulations.

Pass enabling legislation that allows municipalities (or contractors to municipalities) to issue parking tickets

### E. Levying fines for parking offenses

**The Order of the Ministry of Home Affairs No. 185 dated March 2, 2009**

**Code on Administrative Violations**

Municipalities need effective control over the issuing of fines in enforcing parking regulations. Currently cities are not allowed to levy fines for illegal parking and for parking too long in allowed parking spaces (both in paid and non-paid parking areas); in principle, oblasts can enact legislation on fines as long as time limits are defined for parking. Municipalities need to have effective control over the issuing of fines as a practical matter in enforcing parking regulations.

Pass enabling legislation that allows municipalities (or contractors to municipalities) to issue parking tickets

### 5: Public Transport

### A. The regulatory power

**Federal Law No. 131-FZ “On general principles of organization of local self regulation” dated October 6, 2003**

Municipalities can only operate and regulate passenger transport services within the municipality. Oblast regulated services are conflicting / undermining municipally regulated services.

Federal law should permit cross-boundary services by municipal operators but should require all cross-boundary services to have permits from both oblast and municipal authorities.

### B. Contracting

**Civil Code Chapter 27 and Article 464**

Federal Law No. 94-FZ “On placing of orders for supplies of goods, the performance of work and the rendering of services for state and municipal requirements” dated July 21, 2005.

Civil Code Article 451

The law on contract adjustment does not easily apply to competitively tendered franchises as presently granted.

Conditions for adjustment of contracts should be included in a law on public transport.
<table>
<thead>
<tr>
<th>C. Competitive tendering</th>
<th>Federal Law No. 94-FZ “On Placement of Orders for the Supply of Goods, Performance of Works and Provision of Services to Meet the State and Municipal Needs” dated July 21, 2005</th>
<th>The law requires all services involving payment by public authorities to be put to competitive tender, but does not specify the form of contract or the criteria for choice. The existing system encourages an undesirable two-tier system or passenger transport services by excluding private sector operations for carrying subsidized passengers.</th>
<th>All services should be put to competitive tender and should have access to compensation for concessionary provision of services.</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Fare determination</td>
<td>Decree No. 239 of the Russian Government “On measures on adjustment of state regulation of prices(tariffs)” dated March 7, 1995</td>
<td>Maximum fares for private operators are set by the oblast, not by the municipality. This limits the flexibility of city in designing a comprehensive strategy. Concessionary fares are mandated under several different pieces of legislation.</td>
<td>Municipalities should be empowered to make policy on fares of private operators operating under permits. There should be a consolidated law, or regulation on the rights of jurisdictions to mandate concessions and the obligation to compensate for them (including the obligation to compensate in full)).</td>
</tr>
<tr>
<td>E. Concessionary fares</td>
<td>Civil Code Articles 113-115 and 294-300</td>
<td>Current arrangements can give unfair advantage to publicly owned operators. Municipal operators should operate under contracts preferably based on a competitive tender.</td>
<td>The law, regardless of payments, should require all operators, public or private to be established as commercial companies, subject to the same constraints.</td>
</tr>
<tr>
<td>F. Municipal unitary enterprises</td>
<td>Federal Law No.135-FZ “On protection of competition” dated July 26, 2006, Tax code</td>
<td>Some municipalities believe that they must allow bids for permits from individual operators, which results in excessive numbers of small suppliers and makes control more difficult. It has been asserted that bus companies fragment because of the different tax regimes applied to operators of different size.</td>
<td>The law should permit the municipalities to require minimum numbers of vehicles to be specified for all route contracts, but should allow individual owners to form legal entities to bid. There should be a consolidation of the tax law relating to bus enterprises to eliminate this distortion, also covering individual private operators.</td>
</tr>
<tr>
<td>G. Small unit scale of the private sector operators</td>
<td>Article 8 of Federal Law No. 69-FZ “On introduction of changes to certain regulatory acts” dated April 21, 2011</td>
<td>Taxi regulation is a function of the Oblast Taxis are essentially local in operation and should be part of the municipal responsibility.</td>
<td>Federal Law should specify taxi licensing (as opposed to vehicle licensing) as a municipal function.</td>
</tr>
</tbody>
</table>
PAPER III
DEVELOPING A NATIONAL URBAN TRANSPORT ADVISORY FACILITY
INTRODUCTION

Paper I diagnoses that one of the key causes of various urban transport problems facing Russian cities is the lack of technical capacity of municipal and regional entities. This generates the need to create a mechanism which not only facilitates knowledge dissemination and skills transfer but also identifies gaps in the existing knowledge and capacity, generates new knowledge, and benefits all Russian regions and municipalities in a cost-efficient way. Responding to this need, this paper proposes that the federal government should take a leadership role in strengthening technical capacity and facilitating knowledge sharing in urban transport.

3.1. PURPOSE OF THIS PAPER

The purpose of this paper is to develop a rationale and recommendations for creation of the advisory facility, its institutional structure and principles of performance of its advisory role.

In addition, the purpose of this paper is to develop general recommendations for establishment of traffic management centers in Russian cities.

3.2. THE RATIONALE FOR CREATING A NATIONAL-LEVEL URBAN TRANSPORT ADVISORY FACILITY

3.2.1. Economies of scale

With rapid urbanization and growing concerns about urban sustainability around the world, innovative ideas and technologies are being tested and new knowledge is being generated at an unprecedented pace. In this environment, it is neither feasible nor practical for individual cities, particularly those with limited resources and technical expertise, to keep pace with new knowledge and technologies. Russia, as a large country with a high urbanization rate and a large number of cities, is well positioned to reap benefits of economies of scale by establishing a specialized entity at the national level that collates, compiles, and disseminates new knowledge.

Moreover, with city characteristics and urban transport problems varying from country to country (and often from city to city), there is a need for contextual research that goes beyond just compiling international case examples. A single national-level entity, which facilitates high-priority research and provides knowledge services to all cities in the country, would be well placed to minimize duplication of efforts by individual cities, and to maximize benefits of such research.

3.2.2. Diverse and complex needs for advisory services and capacity building

Not only is it necessary to improve the overall technical capacity of all Russian municipalities, but also there is a need to offer a variety of support services to meet the diverse requirements for advisory services. Some cities are better exposed to new knowledge and techniques and/or are able to embrace innovations more easily than others. Without a conscious effort at the national level to coordinate knowledge sharing and dissemination, the inequality among cities would grow larger and the opportunities to boost the learning curve through synergy among cities may be missed. Offering a menu of diverse assistance programs, and particularly targeting some assistance to the lagging regions and cities that need it most, would be in line with the country’s regional development strategy. Also when centrally organized, exchange of knowledge and experience between peers (cities with similar challenges) can be facilitated at low cost.
Capacity building is not only expensive, but also difficult to organize. The cities’ needs for capacity development are thus best dealt with in a coordinated manner instead of each city taking its own capacity building initiatives. At the highest level, top-tier university faculties could contribute to nurturing and certifying well-trained professionals. Independent professional organizations can also design curricula and offer qualifications in collaboration with relevant operational authorities, as it is done in many countries (for example, the Institute of Town Planning in the UK, the Institute of Transport Engineers in the US, and their variants in Canada, France, India and Australia). However, in the shorter term and in the context of Russian Federation a centrally managed advisory program may be the best solution for needs identification and curriculum development.

3.3. PROPOSED OBJECTIVES, TASKS, FUNCTIONS AND RESPONSIBILITIES OF THE NATIONAL URBAN TRANSPORT ADVISORY FACILITY

This section proposes an arrangement to provide centralized advisory support to the Russian regions and municipalities to improve their urban transport systems. The proposed National Advisory Facility (described in Section 3.4), under a contractual relationship with the government, would take a facilitator role, collaborating with other governmental organizations or ministerial units with special legal mandates, state-owned institutes, and other private companies and enterprises. Roles and responsibilities of the National Advisory Facility and other involved entities are described in Section 3.6 of this paper.

The national level advisory functions should be carefully defined taking into consideration of (i) the current legal foundation and fiscal and administrative arrangements among the various tiers of government, and (ii) the most critical gaps in the technical capacity of the Russian regions and municipalities.

If the recommended legal and regulatory reforms in Paper II are adopted, municipal governments will become fully responsible for planning and operation of their urban transport systems. The municipal government would develop its urban transport strategy, allocate its budgetary resources for strategic areas, enter into contracts with service providers (either municipal companies, private companies, or both), and would be ultimately responsible for providing urban transport services of good quality to its citizens. Regional governments would need to enact laws to create an enabling environment for municipalities to develop and implement their urban transport strategies. If it is also assumed that the Federal Targeted Program recommended in Paper IV is adopted, the federal government would provide direct financial assistance to target programs for the Russian regions and cities, aiming to improve the sustainability of urban transport systems.

Within the above framework, the national level advisory functions would have three important objectives: (i) assisting municipalities to find an efficient way to perform their urban transport functions through institutional development and technical capacity building; (ii) advising regions on how to improve their legislative and regulatory frameworks and to assist municipalities in technical capacity building; and (iii) facilitating allocation of federal resources with an aim to fulfill the objectives of the Federal Targeted Program as laid out in Paper IV. The focal areas of the national level advisory functions are derived from the current challenges facing Russian cities, as identified in Paper I. These functions are as follows:

- monitoring of the status of implementation of major federal projects and programs in the area of transport infrastructure development and traffic management;

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36 The Federal Law on General Principles of Municipal Governments (Law 131) says that transport infrastructure and services within a city boundary is the responsibility and competency of a municipal government. However, as discussed in Papers I and II, the federal laws are unclear on the responsibility of urban transport strategic planning, technical definition of traffic management, division of roles between the road police and municipalities in traffic management, and handling of inter-city passenger public transportation, among other things. Moreover, somewhat contradicting to Federal Law No.131-FZ, regional governments, not municipalities, have administrative liabilities and authorities to enact legislation on on-street parking and concession arrangement of public transport services.
• maintenance of a database on the condition of urban streets and roads, traffic and passenger flows (data would be obtained through monitoring of the condition of streets and roads and transport and passenger flows undertaken at the local level);
• development of skills improvement and training programs;
• dissemination of best practices in the area of transport;
• organization of thematic exhibitions in different cities; and
• provision of consulting services in the area of development of transport systems and traffic management.

The objectives and results of works of the National Urban Transport Advisory Facility are as follows:
• Institutional development: developing organizational structure, functions, staffing at municipal governments;
• Strategic transport planning: producing a vision-driven and budget-constrained urban transport strategic plan that governs long-term investment decisions at municipalities;
• Road network development and management: improving roads and bridges asset management systems, road functional classification, road design standards;
• Traffic management and parking: policy, development of infrastructure and technologies;
• Public transport: policy, reforming regulations, procurement of services, strategic investments; and
• Road traffic safety: creation and management of a crash database, design standards, safety audit, traffic calming measures in city centers, pedestrian safety measures.

In order to fulfill the above objectives in the key areas, the following four functions need to be performed: (a) compiling and disseminating data and knowledge, (b) developing and implementing training and capacity-building programs, (c) identifying research needs and administering research projects, and (d) administering Federal Targeted Programs. Each is described below and Section 3.4 proposes how these functions are to be performed and by which entities.

3.3.1. Compiling and disseminating data and knowledge

Creating and maintaining a National Urban Transport Database

A consolidated database on urban transport systems in all Russian cities would benefit policy-makers both at local and federal governments. It would allow for monitoring of urban transport systems in a consistent manner across cities, facilitate benchmarking (see Box 1), offer basis for policy-decisions, and enable before-and-after evaluation of policy interventions and investments. Such a database is managed most efficiently if done at a national-level, either by a national entity through its in-house capacity or by outsourcing it to a suitable institution/firm under a medium-term contract (3-5 years). A national entity (or the engaged institution or firm under the national entity’s supervision if contracted out) would, in con-
sultation with cities, define key performance indicators, develop data collection methodologies, build information management systems (IMS), collate data collected by city administrations in a consistent format, and offer tutorials/guidelines on data collection to cities. The European Community’s Urban Transport Benchmarking program offers a helpful template for this task. Collated data may be used for the following:

- Analysis of performance of urban transport systems in Russian cities in order to determine performance standards;
- Analysis of the cost factors which determine the resources needed for meeting performance standards for urban transport functions;
- Analysis of expenditure and performance data of the implementing municipalities for the administration of inter-governmental transfers; and
- Analysis of effectiveness of urban transport policies.

**Compiling and disseminating guidelines and good practice examples**

A national entity responsible for a consolidated database would also be well placed to perform as a “knowledge clearing house”. By either using in-house capacity or sub-contracting to a suitable institution, it would compile Russian and international good practice examples in various technical areas, and synthesize these examples into guidelines that would help the public authorities and practitioners in cities. Centrally developed and compiled guidelines on key technical areas would reduce potentially redundant efforts made by individual cities and benefit all Russian cities. The areas in which most Russian cities commonly need such assistance include (i) strategic urban transport planning, (ii) institutional arrangement of city administration to adequately address urban transport issues, (iii) development of integrated public transport systems, (iv) ensuring financial sustainability of public transport operation and management, (v) creation of a traffic management unit, (vi) road network development and management, (vii) city-wide parking planning, and (viii) introduction of intelligent transportation systems (ITS).

Arrangements need to be made to disseminate those guidelines widely for easy access and use by all cities. A web-based toolkit on specific technical subject is a commonly used form of knowledge dissemination method\(^\text{37}\). These toolkits often include concept and definition, technical knowledge, how-to-guidance, case studies, reference materials including sample terms of reference and bidding documents, and interactive bulletin boards for virtual discussions. Once created, they need to be updated on a regular basis to reflect new development and innovations in the field. They can be summarized in more succinct forms of publications and hand-outs for quick dissemination. Some examples of such brief guidelines are provided in Annexes 4 and 5, on implementation of gross-cost based contracts for public transport (particularly bus) operations and on creation of traffic management unit.

**Facilitating knowledge sharing**

Overall technical capacity of the entire sector and industry—including public authorities, practitioners, academicians, private sector developers, consultants and contractors—improves when new knowledge is freely shared among them. A single national entity will be a logical place to lead knowledge sharing and development of guidelines for various technical areas. These guidelines would be updated regularly to reflect new knowledge and innovations in the field. The areas in which most Russian cities commonly need such assistance include (i) strategic urban transport planning, (ii) institutional arrangement of city administration to adequately address urban transport issues, (iii) development of integrated public transport systems, (iv) ensuring financial sustainability of public transport operation and management, (v) creation of a traffic management unit, (vi) road network development and management, (vii) city-wide parking planning, and (viii) introduction of intelligent transportation systems (ITS).

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\(^\text{37}\) The World Bank has developed or is developing the following toolkits on Urban Transport related topics: (1) Bus reforms toolkit: This is a “how-to-guide” for carrying out reforms in the public bus transport industry, aimed at separating planning from operations and contracting operations to the private sector; (2) TRACE (Tool for Rapid Assessment of City Energy): This is a diagnostic tool that helps cities understand the best use of their resources against competing claims from the transport, water and other sectors, with an energy efficiency focus; (3) Diagnostic toolkit for urban transport interventions (Under development): This would help cities understand what their key urban transport problems are and what is causing them. This will help them target interventions more effectively; (4) ITS toolkit (Under development): This will be a “how-to-guide” on setting up an ITS system, primarily covering public transport applications. It will be a step by step guide that helps them make choices between alternative options; (5) Strategic Planning toolkit (Under development): This will be a step by step guide on strategic planning for urban transport planning; (6) Fares systems toolkit (Under development): This will be a guide on the principles for determining how public transport fares can be determined and the alternative collection mechanisms/technologies, etc. It will help a city choose between options; (7) Handbook for setting up unified city level institutions for urban transport (Under development): This will be a “how-to-guide” on how city level institutions can be set up for planning, regulating and managing urban transport systems.
efforts. It should play a leading role in planning and organizing various national and international events such as annual conferences, seminars, and workshops, on general urban transport systems and urban development as well as specific technical subjects.

3.3.2. Developing and implementing training and capacity-building programs

Technical capacity of most Russian cities needs improvement, and is uneven across the country. A central government supported effort for continuing training and capacity-building for practitioners (not for traditional students) has been proven cost-efficient in many countries where such programs exist (e.g., the United States Federal Transit Administration, see Annex 3). A national entity would be responsible for developing appropriate training and capacity-building programs, primarily for officials of municipal governments, but also for those of regional governments, in the above focal areas. Programs can be developed both demand-driven, i.e., upon unsolicited requests by cities, as well as supply-driven, i.e., on the basis of assessment of capacity gaps done through surveys.

It would be inefficient if not infeasible for one entity to deliver all the desired training programs with its in-house staff. It is therefore proposed to utilize resources in existing specialized education and training institutes, consulting firms, and other institutions for actual delivery of training courses and capacity-building programs. Most likely this can be done through contracts between the proposed National Advisory Facility and specialized institutions/firms. Also, training and capacity-building programs need to be linked to an accreditation system, which formally certifies, or grants training credits to, qualified specialists in technical areas, such as urban planning, traffic management, public transport management, and transport infrastructure financing. When this accreditation system matures, proficiency in specific skills will become easier to measure and compare, and consequently practitioners that have training credits or certificates would be more competitive in the job market. A certification system is needed also for trainers and educators, in order to ensure quality of the programs. However, creating a market entry barrier through the accreditation system (i.e., only allowing certified practitioners to be hired for certain positions) may not be practical at least during the early stage.

3.3.3. Fulfilling research needs for the benefits of all Russian cities

A national-level organization that collates data from all cities and leads capacity-building and knowledge-sharing programs would be best placed to identify, and respond to, research needs that may arise at federal, regional and municipal levels. This national-level coordination should focus on research areas that would benefit a general constituency rather than specific clients; in other words, on generating public goods. In several countries (such as France and Korea), a centrally organized entity coordinates a national research program, by identifying and prioritizing research needs, developing requests for proposals, and monitoring and controlling the quality of research outputs.

In order to take advantage of economies of scale and specialization, it is advisable that there be a separation between the planning and administration and the implementation of research (i.e., carrying out research). The planning and administration function should be taken up by a single designated national entity. Most of the research projects, once identified by the designated national entity, would be carried out by qualified institutes, universities, consulting firms, or individual experts, which would be selected through competition. The designated national entity would be responsible for supervising the quality of research outputs and disseminating the findings.

3.3.4. Administering the Federal Targeted Program

As diagnosed in Paper I, the lack of both technical capacity and financial resources constrains Russian cities’ ability to improve the sustainability of their urban transport systems. A targeted Federal Targeted Program would help cities allocate resources in the much needed, yet underfunded, areas. As laid out
in detail in Paper IV, the proposed Federal Targeted Program would require centralized administrative functions throughout a project implementation cycle: developing and evaluating formulas for allocating funds, requesting and receiving proposals from cities, evaluating and selecting proposals, reviewing feasibility studies and designs, and monitoring project implementation and results. Federal Ministries (likely the Ministry of Transport and the Ministry of Finance) would make executive decisions on the allocation of funds to cities, regions and individual projects, while a national-level designated agency would assist the federal government in administering the program (see Section 3.4 for the proposed options for different institutional arrangements). Specifically, the designated agency would:

- assist municipalities in carrying out preparatory works necessary to become eligible for federal funding including providing guidelines for project assessment, developing sample terms of reference for feasibility studies, assisting on selection of suitable consultants through creating inventory of qualified consulting firms, and so on;
- review project proposal packages, which may include feasibility studies, financial analysis, and conceptual and/or engineering designs, to determine federal funding eligibility of projects (details of project selection process and requirements are discussed in Paper IV);
- assist municipalities in implementing the grant financed projects (details of such assistance are provided in Paper IV); and
- carry out regular monitoring and grant audits of project implementation.

3.4. PROPOSED ORGANIZATIONAL STRUCTURE OF THE ADVISORY FACILITY

In many countries, the functions described above are not performed by a single entity, but distributed among a variety of agencies. Moreover, the underlying policy of the Russian federal government has been to pursue smaller and more efficient government, with which creation of an additional federally-run fully-fledged research/advisory institute does not align very well. In this context, it appears desirable to separate the high-level policy-decision function (to be retained within the Ministry of Transport), from the facilitator function (to be performed by a designated agency with clear mandates from the Ministry), and from the function of delivering research, advisory services, and technical assistance (to be performed by universities, professional institutions, and the private sector). This concept is illustrated in Figure 3.1.

This conceptual arrangement may, however, take various forms in practice (Figures 3.2 – 3.5), taking into consideration of the current roles and capacities of the institutions currently involved in the Russian Federation. This paper proposes that the institutional arrangement should be based on the following principles:

- The administrative and bureaucratic burden put on the federal government by the new structure should be kept minimal;
- The new structure should maximize utilization of the existing technical capacity and expertise in relevant entities, while minimizing functional redundancy; and
- Delineation of roles and responsibilities should be made clear in order to bring the best outcomes while minimizing the risk of conflict of interest.
Four possible variations of the proposed institutional arrangement are described and compared below.

3.4.1. Single-Facilitator Model: National Advisory Facility

Under this model, one facilitating entity—the proposed National Advisory Facility—will be established to cover all functions described above. As a facilitator, it will keep a close relationship with the Ministry of Transport, which would make executive decisions on the Facility’s mandates. The Facility will outsource various technical activities to suitable institutions and commercial entities, and manage their performance and outputs. This model is depicted in Figure 3.2; roles and responsibilities of the players—the Ministry, the Facility, and other service delivery institutions—are described below.

**The Federal Ministry of Transport.** The Ministry of Transport (MOT) would make the final decision on the overall framework, mandates and functional allocations of the proposed arrangement for the national advisory facility. The MOT would establish and set a legal mandate for (in case of a state agency), or competitively select and enter into a contract with (in case of a commercial entity), the proposed National Advisory Facility. It would also be responsible for developing a national urban transport policy, which in turn would govern the decisions on the Facility’s key priority areas and allocation of federal funding for the advisory activities. The Department of the State Policy for Automobile and City Transport would be the right place to carry out this function. In particular during the early phase of the formation
of the Facility, a small task team may be created within that department, as the initial form of the Facility (see Section 3.5).

Figure 3.2. Institutional Setup Option 1 – Single-Facilitator Model

The facilitator – National Advisory Facility. The proposed concept of a National Advisory Facility, which may be accommodated in an existing state agency or a new agency established for this purpose, would perform as a facilitator. The Facility needs to have strong technical competence and authority to make decisions on how to provide, and manage the quality of, the various functions of the Facility. The Facility would play a central role in planning and managing all of the national-level advisory functions discussed above, developing a framework and template for data collection, facilitating knowledge-sharing, designing training and capacity-building programs, and identifying research needs. It would also enter into contracts with implementing entities that will deliver advisory, training, capacity-building, or research activities, and monitor their performance and outputs. The suggested organization and scope of responsibilities of the Facility are described in further detail in Section 3.6.
**Service delivery – professional institutions and private sector.** While the National Advisory Facility would perform as a framework developer and facilitator, it is recommended that its involvement in actual delivery of services be limited. Instead, the Facility would enter into contracts with specialized universities, research institutes, other professional institutes, or consulting firms, which would be competitively selected on a program/project basis. This structure is likely to be more efficient in the Russian context than accommodating all functions within one organization for two reasons. First, it would help keep the size of the Facility small, hence administration light. Second, it would better utilize the competencies and specialization of the existing education and research institutions and consulting firms, which are mostly in the commercial domain, and in the long-term, would also contribute to improvement of capacity of the entire industry through competition. In other words, the creation of a national-level advisory facility would mean greater business opportunities for all participants in the field.

3.4.2. Dual-Facilitator Model: National Advisory Facility and Federal Program Administrator

This model recognizes that the Federal Targeted Program Administrator segment of the Facility has quite different characteristics from the rest: the nature of the task (technical and relatively repetitive vs. intellectual and innovative), staffing requirements, and interaction with cities. Therefore, under this model (Figure 3.3), the National Advisory Facility will be formed without the administrator function but with its outsourcing arrangement unchanged from what was suggested under Single-Facilitator model. Roles and responsibilities of the involved entities, the Ministry, the Facility, the Administrator, professional institutions and the private sector, remain same as described in the above section.

Figure 3.3. Institutional Setup Option 2 – Dual-Facilitator Model

Source: World Bank Team Proposal
The Facility in either of the above two models (Single-Facilitator or Dual-Facilitator models in Figures 3.2 and 3.3) should have a degree of independence from the government in operation: it needs to be kept close to the Ministry in order to ensure its credibility vis-à-vis the cities, but at the same time at sufficient arm’s length in order to avoid bureaucratization. For example, it need not follow government salary structures or human resource policies and should be able to recruit qualified staff and/or external consultants to fulfill its mandate. Also, it should have adequate independence to make decisions on technical matters, such as placing priorities among various research topics and training programs, and selecting qualified institutions and firms for research and training contracts.

Some existing state agencies funded by the federal budget may be considered as candidates for the National Advisory Facility and/or the Federal Program Administrator. Agencies established by, and have ongoing working relationship with, the Ministry of Transport—RosTransModernizatsiya (a Federal Governmental Institution) and RosAvtoTransport (a Federal Budget Institution)—are natural candidates, and they are compared in Table 3.1. The singled-out administrator function of the Dual-Facilitator model has a more obvious home where it can be placed: the federal institution which administers the existing federal target program—RosTransModernizatsiya—appears to be the natural candidate to host this function.

Table 3.1. Comparison of Existing State Agencies Considered as Candidates for the National Advisory Facility

<table>
<thead>
<tr>
<th>Candidates</th>
<th>Suitable because it...</th>
<th>Less suitable because it...</th>
</tr>
</thead>
<tbody>
<tr>
<td>“RosTransModernizatsiya”</td>
<td>is already managing a Federal Targeted Program “Modernization of Transport System of Russia (2010-2015)”;</td>
<td></td>
</tr>
<tr>
<td>(Federal Governmental Institution)</td>
<td>already has staff that has experience in federal program administration, including procurement, project management, results monitoring, etc.;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>is allowed to hire external (even international) consultants under term-contracts in areas where special skills are required.</td>
<td>is less flexible than the Federal Budget Institutions in terms of budget allocation – no yearly carry-over is allowed; its organization and culture may not be flexible enough to host new and innovative functions due to its focus on its primary and original mandate—administration of federal targeted program.</td>
</tr>
<tr>
<td>“RosAvtoTransport”</td>
<td>has branches across the country in each Federal District, providing better access to regions and municipalities;</td>
<td>is still at very early stage of setting up, hence more preparation would be required before it can be fully functioning. given its relatively flexible arrangement as to determining its mandate and scope of responsibility, may get distracted and shift its focus if later other more prominent agenda become its main area of activity in the future.</td>
</tr>
<tr>
<td>(Federal Budget Institution)</td>
<td>is flexible with its financial planning and resource allocation (can carry over budget to next year); may turn out to be more suitable to carry out the advisory facility function, with the federal program administrator function separated out;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>is allowed to hire external (even international) consultants under term-contracts in areas where special skills are required.</td>
<td></td>
</tr>
</tbody>
</table>
3.4.3. State Research and Advisory Institute Model

In some countries, fully state-owned research institutions lead transport research and advisory assistance to regional and local governments (see France and South Korea examples in Annex 3). Either fully or partially budget-funded, these institutions are granted with a certain level of independence from the government: for instance, they may develop their research programs (although they are often subject to final endorsement by the government) and recruit qualified staff at competitive market rates that may be higher than government salary. As depicted in Figure 3.4, this model combines part of the functions of the Facilitator (the National Advisory Facility) and service delivery functions (research institutes, academia and consulting firms) in one entity. Many similar institutions in other countries often do not engage in training and certification function, leaving that to institutions or firms that are specialized in education services and entities that are authorized to certify professionals.

Figure 3.4. Institutional Setup Option 3 – State Research and Advisory Institute Model

Similar state-owned institutions, established for highly specialized and technical subject areas, used to exist in Russia. However, over the last decade, many, if not all, of such institutions have gradually been corporatized, mostly becoming open joint-stock companies (JSC). If possible, it is worth considering converting a qualified JSC back to a budget-funded state organization, to perform as a state research and advisory institute. The caveat to this approach is that reversing this trend of corporatization, which would require legislative changes, due to a need from a single sector may be difficult.

38 Examples of these institutions include the Scientific and Research Institute of Motor Transport (NIIAT), which was established as a State Institute in 1930 and reorganized as an open Joint-Stock Company in 2005.
However, its alternative—engaging a JSC to perform as the State Institute under a term contract—
would not be very recommendable. This arrangement is likely to undermine the overall competition in
the sector. According to the current legislation, all commercial entities including JSCs have to be put
on a competitive bidding for any contract with the federal government. At the same time, a selected
firm regardless of its legal form should not be allowed to involve in any downstream activities during the
contract period, which would constitute a conflict of interest. Under these circumstances, in order to
make a package contract attractive to potential applicants, it has to be a multi-year “program” contract
(vs. a single assignment-based contract), of which amount is large enough to cover the opportunity
costs (i.e., profits a selected entity would make engaging in other commercial activities). Even then, the
risk might still be perceived too high by some potential candidates, especially if they need to bring in
some substantial changes in their competencies and organizations. This will weaken the competition at
the entry point: only entities that feel that they have a very good chance of getting the job and/or those
that are already carrying out public sector work will apply. Once such a firm is identified and awarded a
contract, this then might undermine the competition in the entire field, creating a two-tier market—the
“State Institution” and its sub-contractors. This might result in some of the activities not being carried
out by the most capable organization.

3.4.4. Direct Package Contracting Model: Ministry as the Facilitator

In this model (Figure 3.5), a designated department/unit of the Ministry replaces the National Advisory
Facility; however, the role of the designated department is likely to be narrower than that of the Facility
due to the current limited staffing and administrative capacity of the Ministry. The Ministry would de-
velop the terms of reference for several **package contracts for bundled activities** and directly moni-
tor the service deliverers’ performance and outputs. These package contracts would be for “programs”
rather than “projects”, and therefore of a larger amount and for a longer period than the outsourcing
contracts that the Facility would enter into. They will also delegate more discretion to the institutions
and firms than outsourcing contracts.

**Figure 3.5. Institutional Setup Option 4 – Administrator Only Model**

*Source: World Bank Team Proposal*
3.4.5. Comparing Institutional Setup Options

Each of the above four options has advantages and disadvantages respectively, as summarized in Table 3.2. The Ministry’s decision on the institutional setup should take into consideration of various criteria such as which model is more ready for implementation, is easier to oversee and monitor, aligns better with strategic priorities, and so on.

Table 3.2. Comparison of Institutional Setup Options

<table>
<thead>
<tr>
<th>Models</th>
<th>Advantages</th>
<th>Disadvantages and Risks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-facilitator</td>
<td>• From the Ministry’s point of view, it is simpler to oversee one facilitator that covers all areas.</td>
<td>• Due to its size and complexity (also given that this is an unprecedented attempt) there is a danger that the Facility itself becomes a bureaucratic hurdle, instead of a facilitator.</td>
</tr>
<tr>
<td></td>
<td>• If various activities are fully coordinated, this arrangement can generate synergy effects, and perform as a true facilitator.</td>
<td>• It is likely to be harder and to take longer to create than other models.</td>
</tr>
<tr>
<td>Dual-facilitator</td>
<td>• By separating the Administrator from the rest, which has distinct functional requirements, it can avoid putting two different corporate cultures under one roof. In other words, each of the two (Facility and Administrator) may work better without the other.</td>
<td>• There are several areas which require collaboration between the knowledge/research segment and the administrator segment (e.g., technical assistance program). If not well managed, there may be a major disconnect between them, negatively affecting the cities that receive both advisory and financial assistance (Paper IV).</td>
</tr>
<tr>
<td>State Research and Advisory Institution</td>
<td>• In countries where such institutions exist, they often fulfill the role as a facilitator and leader in non-commercial research.</td>
<td>• Current legal status of most candidate institutions—commercial or corporatized—is not suitable for this arrangement.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• In case the Ministry enters into a term-contract with a commercial entity that will perform as the State Institution, this might undermine the competition in the market and lead to some activities not being carried out by the most qualified firms/institutions.</td>
</tr>
<tr>
<td>Direct Package Contracting</td>
<td>• This model may be easiest to initiate implementation as it does not require setting up of a new institution or expanding the responsibility of existing institutions.</td>
<td>• This model requires the most extensive involvement by the Ministry staff, which may not be realistic given the current limitation on its staffing.</td>
</tr>
<tr>
<td></td>
<td>• This model is the least likely to become excessively bureaucratic.</td>
<td>• This arrangement, by allowing greater discretion and flexibility of the contracts, naturally undermines the oversight power of the Ministry.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• It may become very difficult to control the conflict of interest, which arises when the package contractors participates in downstream activities.</td>
</tr>
</tbody>
</table>
3.5. RECOMMENDATIONS ON ARRANGEMENTS OF THE NATIONAL ADVISORY FACILITY

The phased approach described below applies to the proposed Single-Facilitator model. If another model is chosen, some variations of it may be applied.

3.5.1. Phase 1 – Start-up Team in the Ministry of Transport

It is difficult to scope out all activities of the new entity in advance in full detail and to accurately estimate the workload of various activities. Therefore, a small team—up to five people and led by a senior staff at department head level—might be set up in the Ministry of Transport to set out the institutional arrangements and legal basis of the Advisory Facility and to detail the terms of the reference and staffing requirements (see Section 3.6 for a suggested draft). Ideally, the head of the start-up team would continue as the director of the Facility; this would ensure seamless transition of the start-up team into a semi-autonomous entity and strong and continued collaboration with the MOT. In case an existing institution is selected as a place to house the Facility, its current director/management should participate in this process (see Table 3.1). By creating the start-up team in the MOT, the risks of potential conflict of interest would be eliminated: all research institutes (Russian and foreign), universities, consulting firms, and other commercial entities would be allowed to bid for the activities to be tendered by the start-up team.

Nevertheless, it is recognized that the organizational structure of the Ministry and the current workload on its staff may not be conducive to assigning a team of full-time quality staff. Therefore, alternatively, the MOT can hire a team of experts under individual contracts, led by a senior staff of the MOT. The hired individuals may come from research institutes, universities, and private sector, provided that they do not continue affiliations to a potential future vendor while they are under the contracts.

The start-up team may consist of the following members:

• A head of the team, equivalent to the director or higher level in the MOT;
• The best available internationally recognized expert consultant; and
• Two-to-three staff of the Ministry specialized in urban transport issues.

Phase 1 could last 3-4 months, during which terms of reference of a fully-functioning Advisory Facility are completed and any legal and institutional issues related to its establishment are identified and resolved. During this period, the Federal Government should determine the most suitable form and legal status of the Facility in the Russian context. The start-up team should also start assessing cities’ demand for advisory services through surveys, in order to measure their needs, to identify the focal areas, and to scope the Facility’s activities with accuracy.

3.5.2. Phase 2 – Transition to an Initial Form of the Facility

During the second phase, a National Advisory Facility would gradually be set up in accordance with the legal and institutional arrangements either in a new institution or a selected existing institution and the detailed TOR determined during Phase 1. The Advisory Board of the Facility should also be formed, consisting of representatives of key stakeholders, such as the MOT representative, and delegation from regions and other public entities. In order to perform as an unbiased facilitator, the new Facility should be shielded from commercial interests, but secure most of its funding from the Federal Government on the basis of its legal mandate. At the same time, the Facility should be equipped with adequate technical capacity and autonomy to make operational and financial decisions on its own. Arm’s length between the Facility and the Federal Government (MOT) would enable flexibility in

39 The Facility may be set up under a new executive order or existing legislation, or through a new legislation that is specifically meant for it.
• the salary scales of its staff;
• recruitment procedures;
• terms of appointment and service conditions, contract appointments are recommended for a fixed-term with extension on the basis of performance, rather than civil service career positions;
• operational procedures; and
• financial management.

This transition phase may last for 6-9 months. The functions that will have been carried out by the start-up team would be gradually transferred to the new entity; the scope of responsibility of the Facility may be expanded to include other functions that were not included in that of the start-up team. The new Facility and the start-up team of the MOT may co-exist during this period. Some of the MOT start-up team members may be recruited by the new Facility. If the head of the start-up team takes the Director position of the Facility, Phase 2 could be substantially shortened.

During this phase, the Facility could focus on demand-driven activities; in other words, on providing services and support in response to the known and expressed demand of municipalities for technical and financial assistance. Such examples may include the following:
• An early version of federal support program (details discussed in Paper IV) is developed for high priority sub-sectors, including traffic management systems improvement, in a small scale; this new program starts receiving requests for funding from cities;
• Under a contract with a university or a consulting firm, a training program is designed for technical capacity building in a few selected subjects; pilot web courses are launched;
• Under a contract with a research institute or any other qualified entity, priority urban transport research topics are identified and their research statements (requests for proposal) are prepared;
• A national urban transport database is designed and data collection starts.

3.5.3. Phase 3 – Maturing to a Fully Functioning Facility

In the final phase, the start-up team in the MOT will be disbanded and the Facility will take over the full responsibility as a fully-fledged subsidiary of the MOT. The legal basis and institutional arrangements will have been tested, and adjusted as necessary, during Phase 2. The suggested organizational structure, responsibilities, and staffing requirements of the Facility are explained in Section 3.6, and subject to further decisions to be made during Phases 1 and 2.

3.6. RECOMMENDATIONS ON STAFFING, REQUIREMENTS, ASSESSMENT OF STARTUP COSTS, AND FINANCING PLANS FOR THE NATIONAL ADVISORY FACILITY

These terms of reference are written for the proposed Single-Facilitator model, and applied to Dual-Facilitator model by separating the Federal Targeted Program Administrator segment from the rest.

3.6.1. The objectives and client

The primary objective of the National Advisory Facility is to strengthen, and to sustain, institutional and technical capacity of Russian regions and municipalities in planning and operating their urban transport systems. Toward this objective, the Facility shall also aim to
• Provide Russian cities with up-to-date and readily applicable knowledge on good practices;
• Provide Russian cities with opportunities for continuous training and capacity-building;
• Develop and support urban transport research programs of national importance;
• Assist cities in the preparation and implementation of studies, projects, and policy reforms; and
• Maximize the benefits of the Federal Targeted Program as the program administrator (for the program details, see Paper IV).
The main client of the Facility will be the policy-makers and technical staff in the transport sector at municipal and regional governments. Beyond that, other users may benefit from the Facility's services, primarily through the products that are national public goods, such as newsletters and regular publications on urban transport database. Potential users include the following:

- Other ministries and entities of the federal government;
- Practitioners of municipal enterprises and entities;
- Educators and researchers at academic, educational, and research institutions;
- General public including the users of urban transport systems;
- International and non-governmental organizations in relevant sectors.

### 3.6.2. Organization and scope of responsibilities

The National Advisory Facility shall have four functional divisions corresponding to various functions laid out in Section 3. The suggested organizational structure is shown in Figure 3.6.; each division’s responsibilities are listed below.

**Figure 3.6. Proposed Organization Chart of the National Advisory Facility**

**Advisory Board**
- Review and approve annual advisory programs;
- Review annual performance reports and carry out other performance monitoring as necessary;
- Provide guidance on the strategic directions.

**Director’s Office**
- Determine the strategic direction of the Facility, and communicate it with the Division Heads and the staff member;
- Develop annual advisory programs with inputs from the Division Heads, and seek approval by the Advisory Board;
- Prepare annual performance reports and present to the Advisory Board;
- Make decisions on staff recruitment and contract extensions.

**Source:** World Bank Staff Proposal
National Urban Transport Database and Knowledge Center

- Define key performance indicators that would represent the condition and performance of urban transport systems in Russian cities;
- Develop tutorials on data collection methodology and provide advisory to requesting cities;
- Develop and maintain a consolidated database of urban transport systems in all Russian cities;
- Collect and regularly update key performance indicators from international benchmarks;
- Develop a framework for benchmarking of urban transport systems and carry out benchmarking on a regular basis (e.g., annually);
- Develop and disseminate “how-to-guides” on key institutional and technical topics, including but not limited to, development of a comprehensive urban transport strategic plan, institutional arrangement for urban transport strategic planning and implementation, establishment or strengthening of a city traffic management center, feasibility studies, and financial analysis;
- Develop terms of reference for the above activities, which Russian cities can use to hire consultants;
- All of the above activities may be done in-house or outsourced.

Research Program Planning and Management

- Identify high priority research programs, and develop research needs statements to be funded by the Federal Targeted Program, for approval by the federal government;
- Administer the research programs, by competitively selecting research institutes, universities or consulting firms, managing their performance, and reviewing and approving their outputs;
- Publish findings from the research programs in various forms as necessary, such as reports, research briefs, newsletters, and web documents;
- Organize annual conferences on urban transport, determining themes and topics for technical sessions, and inviting Russian and foreign speakers and panelists, in line with activities in other divisions, particularly the Advisory Division and the Database Center;
- Collect and synthesize good international practices, and publish them in forms that are easily accessible to Russian cities;
- Assess knowledge-sharing needs through consultation with institutions and Russian cities;
- Organize other regular or irregular events such as seminars and workshops that are smaller in scale and more focused on specific technical topics, compared to the annual conferences;
- Develop and manage a coordinate website for the entire Facility, compiling inputs from other divisions.

Training Program Planning and Management

- Carry out regular assessments of technical capacity of Russian cities, through surveys or interviews, in order to identify skills gaps;
- Develop training programs to address the skills gaps, as well as certification systems that coincide with the training programs;
- Develop terms of reference for, and manage contracts with, education and training institutes that will deliver the training programs and certify qualified individuals;
- Regularly assess the relevance and quality of training programs through both own assessment and beneficiary survey, and update the programs as necessary.

Federal Targeted Program Administrator (see Paper IV for details)

- Develop application requirements for the Federal Targeted Program, to be approved by the Ministry of Transport;
- Develop evaluation criteria for technical and financial proposals of the cities’ applications for the Federal Targeted Program, both quantitative and qualitative;
- Evaluate applications throughout several stages of the selection cycle, including concept stage (pre-feasibility), feasibility, and detailed design and financial plans;
- Submit an evaluation report to the Ministries for their final decision;
• Monitor the implementation of the selected projects;
• Prepare annual reports of Federal Targeted Program, documenting progress, evaluating project impacts, and capturing lessons.

3.6.3. Collaboration with other partners

The National Advisory Facility shall establish and manage formal contractual relationship with various specialized institutes and firms, such as universities, research institutes, consulting firms, and professional organizations, on a program or project basis. The staff of the Facility shall develop terms of reference for specific activities to be contracted out to these entities, administer the competitive selection process, and review the quality of the outputs. The Ministry of Transport may require reviewing and approving of some of the terms of reference. The Facility shall also report the outputs of the outsourced activities along with its own performance.

3.6.4. Staffing requirements

Staffing shall be a combination of technical expertise sourced from the market and administrative expertise either sourced from the market or taken on limited term secondment from government agencies. It is strongly advisable that, particularly during the initial period, the staffing include international experts collaborating with their Russian counterpart. All appointments shall be on a contractual basis, with no permanent or lifelong employment. Contracts should be extendable based on performance. Suggested staffing requirements are as follows and would need to be assessed and updated over time.

3.6.5. Budget and financial model

The federal government would need to allocate initial start-up budget to cover the costs of the small team to be created within the Ministry. This would be part of annual budget allocation to the Ministry and would be a modest amount, as it would include reassignment of some staff (fixed costs), fees for an internationally recognized expert consultant secondment, and other operating costs. Given the workload of the current staff, the Ministry is likely to need to secure external experts to carry out most activities: it may hire individuals under term-contracts, or enter into a contract with an entity that will provide these services.

Since most of the activities of the Facility would generate nation-wide public goods to be used by all cities, almost all its costs should be covered by annual budget allocation by the federal government. And all services that are provided by the Facility mandated by its legal charter and without requests by individual municipalities may be made free to the users. The administration costs of the Federal Targeted Program should also be supported from the Ministry budget.

As the Facility matures, the client demands would be better known, and in accordance with that, service areas may be adjusted to better serve the needs. The Facility’s performance should be regularly monitored and assessed through publication reviews and client satisfaction survey, which should be reflected in subsequent decisions on budget allocation and in refinement of the scope of services of the Facility. In other words, budgetary support from the federal government would be used as quality assurance mechanism. This would also ensure that the Facility does not become a completely commercial enterprise, as otherwise it will be compelled to function like any consultants; the results would be suboptimal supply of the national public goods and possible crowding-out effect on the private sector.

40 Those public goods would include synthesized knowledge on international experience and new technologies, reviews of urban transport policies and their impacts, access to a national urban transport database, and publications of basic research reports.
### Table 3.3. Proposed Staffing Requirements for the National Advisory Facility

<table>
<thead>
<tr>
<th>Center/Division</th>
<th>Suggested staffing requirements</th>
</tr>
</thead>
</table>
| Director’s Office                                    | • Director  
• Director’s advisor (international consultant secondment)                                    |
| National Urban Transport Database and Knowledge Center| • Division head  
• Data analysts  
• Publisher / Communications officer  
• Outsourcing contracts:  
  - Database development and management  
  - Development of guidelines and toolkits  
  - Web master |
| Research Program Planning and Management             | • Division head – senior urban transport specialist  
• Administrator  
• Research assistant  
• Outsourcing contracts:  
  - Multi-year basic research programs  
  - Individual research projects |
| Training Program Planning and Management             | • Division head – practitioner training specialist  
• Training contract manager  
• Outsourcing contracts:  
  - Development of training programs  
  - Delivery of training programs |
| Federal Targeted Program Administrator               | • Program coordinator  
• Seconded senior official from the Ministry of Transport  
• Individual consultant contracts for proposal reviewers:  
  - Urban transport specialist  
  - Road and transport engineer  
  - Economist / financial analyst |

Note: This staffing requirement suggestion applies when the National Advisory Facility is fully fledged (i.e., during Phase 3 as defined in Section 3.5.3). Any subset of the above staffing may be chosen during the earlier phases.
PAPER IV
DESIGNING A FEDERAL TARGETED PROGRAM FOR SUSTAINABLE URBAN TRANSPORT SYSTEMS
INTRODUCTION

Paper I identifies a wide range of urban transport issues that many Russian regions and municipalities cities need to address, particularly in the areas of passenger transport and traffic management. It is concluded, first, that many Russian cities do not have sufficient financial and technical resources to adequately address these challenges, and second, that there are a number of ways in which the resources that are available can be more productively used. The issue of the adequacy of municipal funding for the tasks assigned to municipalities raises legal questions which are discussed in Paper II. This Paper deals only with the second issue by proposing a Federal Targeted Program that incentivizes cities to adopt appropriate policies to Federal Targeted Program maximize returns on their investments.

4.1. PURPOSE OF THIS PAPER

The purpose of this paper is to provide a rationale and scope of works of the proposed program, grant conditionality, and eligibility requirements for participating regions and municipalities, and recommends institutional arrangements for program implementation.

4.2. THE RATIONALE FOR FEDERAL FINANCIAL ASSISTANCE

4.2.1. Encouraging a More Strategic Approach to Transport at the Municipal Level

The observed lack of resources at the municipal level, and particularly a lack of resources for capital replacement and timely repair and rehabilitation of existing assets, has seriously limited the ability of cities to implement a strategic urban transport plan. In these circumstances many cities have not developed the kind of strategic thinking that characterizes well managed urban transport administrations. A first objective of the targeted program would therefore be to encourage the development of a comprehensive strategy for a financially sustainable urban transport sector linked to multi-year investment programs with long-term goals. The investments within the Targeted Program would then be required to fall within the framework established in the strategy and the multi-year investment program.

Since the Federal Targeted Program will emphasize the importance of sustainable finance only program elements which contribute to the development of long-term sustainability should be included in the program. Thus expenditures on short-term system maintenance – such as periodic programs of bus replacement – should not be eligible as they should be provided for in the ongoing management of these systems. Meeting these needs through a Federal Targeted Program of support would give the wrong message to municipalities about what is required for sustainability and hence is counterproductive in terms of the objectives of the program.

4.2.2. Improving Project Selection and Results Monitoring

Federal funding can be used as a lever to strengthen project selection and results monitoring at municipal level. Through grant conditionality, the Federal Targeted Program may require that cities should make their investment decisions based on a long-term urban transport strategy and use rigorous analytical tools for project selection41, in order to become eligible for federal support. The proposed National Advisory Facility (Paper III) could compile, develop and disseminate knowledge and techniques

41 This can be done through several quantitative and qualitative analytic methods, such as alternative analysis and benefit-cost analysis. Alternative analysis is a tool that is often used to explore various passenger public transport options, without being pre-set on a particular technology. It differs from feasibility study in which a pre-determined option is reviewed on the basis of its technical and economic feasibility. Benefit-cost analysis is one of several technical tools that are used to compare various investment options in a quantitative and objective manner.
for such tools and procedures for project preparation and implementation for the use by cities. This would help cities not only meeting the grant conditionality and selecting high-return projects, but also institutionalizing an objective and rigorous project selection mechanism.

Additionally, the Federal Targeted Program could be designed to require cities to regularly monitor and report on project progress. By requiring regular monitoring and reporting of implementation progress, financial management, and project results, federal assistance can enhance the accountability of public investments and ensure good value for money. Well documented information about project progress and results can provide valuable lessons from which other cities could also benefit.

4.2.3. Providing Financial Incentives for High Impact Reforms

Many cities are so overwhelmed by the day-to-day struggle to maintain service to their citizens that they give a relatively low priority to legal and regulatory reforms, whatever their potential benefit. The Federal Targeted Program may be used to incentivize cities to implement high-impact reforms by providing carefully devised financial assistance for important transport investments, making this assistance conditional on meeting certain reform conditions, and providing technical assistance and how-to guidance based on good practices.

4.3. OVERVIEW OF THE FEDERAL TARGETED PROGRAM

Based on the rationale for Federal Financial Assistance as described above, the following are the proposed program objectives, goals, and indicators that might be used for guiding the development of the Federal Targeted Program and more importantly for evaluating the impact of the implemented program.

4.3.1. Program Objectives and Indicators

The primary objective of the Federal Targeted Program is to provide incentives to cities to implement high-impact urban transport reforms and investments by providing carefully devised financial assistance. The Program will initially focus on implementing well designed traffic management measures and passenger transport service reforms and the associated institutional arrangements needed to adequately implement, operate and maintain these activities. It is expected that these reforms and investments will serve as best practice examples to be widely emulated across the Russian Federation:

- Advance the development of comprehensive urban transport strategies and multi-year investment programs which can serve as the basis for making appropriate decisions with respect to urban transport reforms and investments;
- Improve the capability of municipal urban transport institutions through on the job experience in implementing traffic management and passenger transport investments and reforms under the Program;
- Implement and demonstrate the merits of traffic management measures in improving traffic circulation and safety at modest cost;
- Implement and demonstrate the merits of passenger transport contracting measures that improve passenger transport services on a financially sustainable basis.

Proposed results indicators are as follows:

- Adoption of comprehensive urban transport strategies and multi-year transport expenditure programs as specified in program guidelines in (indicate number of cities) target cities;
- Establishment and strengthening of traffic management and passenger transport units with appropriate staffing and functions in accordance with established Program guidelines in (indicate number of cities) additional cities;
4.3.2. Sub-Programs of the Federal Targeted Program

This paper proposes a Federal Targeted Program (hereafter the “Program”) that provides financial assistance directly to Russian cities and regions for policy oriented investment projects, studies, institutional development and other technical assistance. The Program complements the activities outlined in Paper III—the “upstream” assistance provided by the National Advisory Facility.

Municipalities would compete for a fixed sum of the Targeted Grants, which would include the following four sub-programs: (1) Capital Investments Grants, (2) Capital Investments Preparation Grants, (3) Passenger Transport Franchise Contract Grants, and (4) Technical Assistance Grants. These grants are principally for municipalities; however, in some expenditures or investment programs (oblast governments) may also be eligible. Each of these sub-programs is explained below:

Capital Investments Grants. This sub-program would offer project co-financing (requiring matching funds from receiving municipalities) for new physical investment projects that fall under the candidate areas described in Sections 4.4.1. and 4.4.2., or other areas justified as necessary by requesting cities. An emphasis may be given to innovative measures and new technologies that are cost-effective in solving current transport problems. To be considered for this grant, a municipality would need to meet the grant conditionality (Section 4.5.2.), satisfy other eligibility criteria (Section 4.6.2.), and prepare and submit an acceptable project application (Section 4.6.3.). Eligible expenditures for this sub-program would include civil works, information technology (IT) installation works, and purchase of other equipment and software packages.

Capital Investments Preparation Grants. This type of funding would be offered to municipalities for which applications for the above mentioned Capital Investment Grants have been accepted for final submission. Those municipalities would be eligible for receiving funds to cover part of their project preparation expenses, including feasibility studies, final engineering designs, and bidding documents, subject to final approval of the investment applications. Grant funding for construction supervision would also be made available.

Public Transport Franchise Contracts Grants This sub-program would provide funds for pilot projects to demonstrate how municipal governments might improve the quality, cost and accessibility of public transport services through revisions in the regulatory regime, particularly through the introduction of system integration of all operators and comprehensive competitive tendering of services on a gross cost basis. (For details, see Section 4.4.4.). To qualify for this type of grant municipalities must

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42 For instance, municipalities that plan to implement a new investment project would be able to get information on latest experiences in other Russian and foreign cities, latest techniques and technologies, and obtain sample terms of reference and bidding documents which they can customize for their use, from toolkits and guidelines provided by the Advisory Facility. Also, municipalities—whether or not their projects are financed by the Federal Targeted Program—would be able to receive necessary training for their technical staff, facilitated by the Advisory Facility.

43 Though there is a preference for gross cost contracting because of the greater ease with which municipalities can adapt service contracts and integrate multiple modes and suppliers in a coherent system, developments using “net-cost contracts to achieve similar objectives would not be excluded.
propose an approved regulatory and service procurement reform program (as discussed in Paper I). Eligible expenditures would include ticketing and contract supervision equipment (AVL), accommodation and initial training costs of system managers, and market research for establishing optimum route and contract structure.

**Technical Assistance Grants.** This sub-program would provide funds for consultancy service fees for technical assistance and advice in areas other than project preparation activities (examples provided in Section 4.4.7). Eligible expenditures would include consultancy fees for (i) planning and strategy development activities, including development of urban transport strategy, multi-year urban transport investment programs, traffic management plans, and intelligent transportation systems (ITS) plans; (ii) hands-on guidance or training programs provided by external experts targeting city administration technical staff; and (iii) legal assistance in drafting required laws and regulations to permit the proposed reforms (see Paper II).

### Table 4.1. Summary of the Characteristics of the Targeted Grants Program

<table>
<thead>
<tr>
<th>General Purpose of the Program</th>
<th>To encourage reforms and investments in specified aspects of urban transportation (initially in traffic management, passenger transport, and selected institutional and managerial reforms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grants Recipients</td>
<td>To selected urban municipalities and secondarily to regional governments for reforms in support of urban transport</td>
</tr>
<tr>
<td>Eligible Expenditures</td>
<td>Limited to individual investments and reform programs, in areas prescribed by the Ministry of Transport, of which proposals are approved (Initially limited to traffic management, passenger transports and selected institutional and managerial reforms)</td>
</tr>
<tr>
<td>Eligibility Criteria</td>
<td>Limited to municipalities over 250,000 population which are subordinate to regional governments (some exceptions granted)</td>
</tr>
<tr>
<td>Grants Conditionality</td>
<td>To be accepted for this grant municipalities must (a) prepare an urban transport strategy and multi-year investment program, (b) commit to making recommended organizational improvements over time, and (c) concur with cost sharing arrangements associated with the grant</td>
</tr>
<tr>
<td>Basis for Selection</td>
<td>Highly competitive based on applications to the MOT sponsored National Advisory Facility</td>
</tr>
<tr>
<td>Selection Process</td>
<td>Multi-step selection process including preparation of feasibility studies</td>
</tr>
<tr>
<td>Monitoring</td>
<td>Very careful monitoring of investments selected for grants including preparation of grant completion reports</td>
</tr>
<tr>
<td>Phasing of Program</td>
<td>Start small with a few municipalities and gradually expand program based on lessons learned and development of the Transport Advisory Facility</td>
</tr>
</tbody>
</table>

### 4.4. CANDIDATE AREAS OF THE FEDERAL TARGETED PROGRAM

The Federal Targeted Program would provide grants for the following candidate areas: traffic management improvements, passenger public transport improvements, reforms of public transport franchise contracts, designing and implementation of city-wide on-street parking systems, non-motorized transport investments, and specified areas of technical assistance. Municipalities and if applicable, regions, may apply for one or more of these areas for federal assistance. Details of the candidate areas are described below.
4.4.1. Capital Investment Projects: Traffic Management Improvements

**Eligible activities.** Investments that would improve traffic flow through various traffic management measures are eligible for federal assistance. Examples of eligible activities are described below:

**Traffic signal system improvements.** These investments may include (a) expansion of existing traffic signal systems to more intersections or locations, (b) appropriate upgrading of existing traffic signal installations, and (c) creating traffic control centers.

**Low cost street infrastructure improvements.** The federal program would also support low-cost street infrastructure improvement measures to improve traffic flow and to enhance traffic safety. These investments would include, inter-alia: (a) geometric improvements, such as at grade pedestrian crossings, traffic channelization, including modest geometric realignment of the roadway, and left turn bays, (b) measures to enhance passenger transport services such as bus lanes, (c) barrier medians, (d) one-way street provisions, and (e) street signing and marking.

**Traffic enforcement and surveillance systems.** These intelligent transport system (ITS) elements include, inter-alia, systems that will enhance traffic enforcement and safety such as speed and red light cameras as well as vehicle detection systems that will assist in general traffic operations.

**Traveler information systems.** These include ITS system elements that provide useful travel and traffic information to passenger transport patrons and to motorists.

**System integration.** Cities that have existing elements of the above listed elements of a comprehensive intelligent transportation system (ITS) may be eligible for a system integration program that consolidates separate systems into one coordinated system. Such programs may include designing of integrated system architecture, investments in servers, communication technologies, equipment, software packages, and development of a consolidated traffic management center.

4.4.2. Capital Investment Projects: Passenger Public Transport Improvements

**Eligible activities.** Investments that would improve service coverage and/or quality of public transport systems are eligible for federal assistance. Examples of eligible activities are described below:

**Light rail transit and bus rapid transit public-private-partnerships.** The federal program should assist in advancing higher speed and higher capacity surface public transport, especially in larger Russian cities where traffic volumes would justify these investments. More specifically, where existing tram systems can be upgraded to higher grade light rail transit (LRT) or where bus rapid transit (BRT) could be introduced, these investments should be candidates for possible federal assistance. Important eligibility requirements would be that the candidate route or routes are already physically segregated from the general traffic stream or could be segregated at modest cost, and that measures would be undertaken to permit transit priority at intersections. Concession agreements similar in concept to the autobus franchise agreement (see Section 4.4.4) could be considered with competing companies proposing to supply the required vehicles for the proposed LRT or BRT as well as committing to operate these systems for a specified number of years. The responsibility of providing for or upgrading of the physical infrastructure needed to accommodate these services would be the responsibility of

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44 In addition to at grade pedestrian crossings, considerably more expensive pedestrian overpasses and underpasses could be considered as special exceptions but only after a convincing case that the requested proposed pedestrian crossing could not be reasonably attained at grade with traffic signal control.

45 The term “physically segregated lane” used here means that there is a physical barrier or intervening land use separating the lane from general traffic, unlike a bus lane which may only be designated by pavement marking.
the municipality under a public-private-partnership (PPP) arrangement. Under this PPP arrangement federal assistance would finance the costs incurred in providing the required infrastructure and traffic control systems.

**Infrastructure investments in support of passenger transport.** A range of modest cost infrastructure measures to enhance passenger transport operations are recommended whether or not a municipality would wish to avail of federal assistance for the franchise/concession agreements outlined in program elements described below (See Section 4.4.4). These include, inter-alia, (i) bus lanes, (ii) physically segregated bus, trolley bus, or tram lanes (if costs are modest), and (iii) transport priority measures at intersections (including geometric improvements and electronics).

**Integrated passenger transport ticketing systems.** It would be desirable to assist those municipalities wishing to implement integrated ticketing systems that would cover ridership between different operators in same mode or between modes (including autobus, trolleybus, tram, or metro operations). Beyond providing funds for the required equipment, this program element ought to additionally provide technical assistance for establishing the contracts, the financial clearing house and other arrangements that would be needed to implement these ticketing systems.

### 4.4.3. Preparation of Eligible Capital Investments Projects

**Eligible activities.** Project applications submitted for consideration of capital investment projects would be evaluated and selected following steps listed in Section 4.6.3. Any activities that are required for final submission of projects may be eligible for federal funding. Examples of eligible activities are as follows:

- Feasibility studies, covering economic, technical, financial, environmental and social aspects,
- Engineering design, for civil works projects after completion of feasibility studies;
- Transaction advice, in case of public-private partnership (PPP) arrangements, and
- Preparation of contract documentation, targeted assistance especially in case of large-scale civil works or complex IT procurement.

### 4.4.4. Reform of Public Transport Franchise Contracts

**Eligible activities.** In order to stimulate a more efficient use of competitive tendering as described below the federal program could fund (a) the administrative set-up costs of a reformed franchise tendering system, including any additional requirements for vehicle location systems, system and tender document preparation costs, and (b) the costs of electronic ticketing systems. Similar support could also be provided to regional authorities, which provide commuter or rural-to-urban passenger transport services. Since these are de facto urban passenger services that are under regional government responsibilities, it would be sensible to assist oblast governments in improving these services.

**Rationale.** Many commercial services in Russian cities are currently supplied by the private sector under competitively tendered permits which do not impose any obligation to carry passengers at zero or concessionary fares, while social services—often at lower fares—are provided almost exclusively by heavily subsidized, municipal unitary enterprises. The result of this two-tier arrangement is that the social services continue to decline while the budget burden increases. This often means that the most competitive and cost-efficient service providers are not mobilized for social service provision (see Pa-
per I for detailed discussion on this topic). The belief that only municipal enterprises can provide subsidized services actually results in the budget burden being greater than it would be if the social services also were competitively tendered.

This contrasts starkly with the situation in many European countries where a common fare system applies to all services and all operators are obliged to carry reduced fare passengers. In many cases all services are competitively tendered and publicly owned companies have no protected share of the market. Under these systems, quality is maintained through the conditions of the contracts, the availability of service to reduced fare passengers does not decline, and cost is controlled through the impact of competition on operators’ efficiency. The budget burden declined significantly when this system was introduced in many European cities.

Moreover, the introduction of gross cost contracts—in which the municipality receives all fare revenues and the operators are paid on the basis of services provided rather than fares collected from passengers—allows the municipality to plan flexibly and provide for public transport services, integrating various operators or modes. The necessary technology exists for potential implementation in Russia. Most cities already have GPS-based bus vehicle monitoring systems through which the municipal authority can monitor the service quality of operators and enforce contracts. Some cities have electronic ticketing arrangements which can be used for integrating services of different operators for convenience of users, as well as allowing for collection of detailed service data for contract management purpose.

**Grant conditionality.** Participating cities and regions should institutionalize and implement competitive tendering of autobus services, under which the least cost suppliers are selected and provide specified vehicles of acceptable standards as part of the service contract. The competitive tendering in cities should cover the all autobus service operation, not just some segments of it. In practice, this reform would require several steps as follows:

- Appropriate amendment of regional or local regulations on competitive tendering of bus services and criteria for selection of suppliers;
- Commercialization or privatization of municipal enterprises and removal of any budget support (including replacement of vehicles on the public budget) other than through revenues obtained in successful tender bids;
- Integration of all system operators into a single fare and service system;
- Implementation of gross cost contracting as part of the tendering arrangement;
- Provisions for setting fares, adjusting payments for inflation, and enforcing contract performance;
- Provision of a financial plan showing the forecast budget requirements of the new system and legal commitments to make the contract payments for the duration of the contract.

### 4.4.5. Designing and Implementation of City-Wide On-Street Parking Systems

**Eligible Activities.** As discussed in Paper II, regional authorities now have legislative authority to establish their own laws on on-street parking regulations (e.g., spatial and temporal restrictions, and maximum time limits for parking), enforcement, and parking charges. What is generally missing is a well developed conceptual and policy framework within which to exercise these new powers. The targeted program should aim to assist the development of that framework. Regional authorities and municipalities that wish to implement on-street paid parking may be eligible for federal assistance in the following areas:

- Legal advisory services that would assist establishment of regional laws on on-street parking regulations and charging;
- Consultancy services to assist cities to develop a city-wide parking plan in conjunction with a transportation plan, which may include assessment of required parking spaces, detailed planning of parking areas, appropriate charges, and enforcement measures;
Consultancy services and transaction advice that would assist cities in concession agreements with private developers and operators for parking facility construction and management;

- Equipment and minor civil works in support of parking provided by municipal governments.

**Grant Conditionality.** To qualify for this grant the candidate municipalities would need to prepare a preliminary comprehensive parking plan for the city including a preliminary plan for establishing a paid on-street parking plan for a specific part of the city. The affected oblast and the candidate city also would both need to confirm its intention to implement this plan within a specified time period.

### 4.4.6. Non-Motorized Transport Investments

**Eligible Activities.** Investments that would enhance the use and safety of non-motorized modes of travel (walking and bicycling) are eligible for federal assistance. Examples of eligible activities are described:

#### Sidewalk system improvements.** Sidewalk system improvements that would (a) extend the continuity of the existing sidewalk system of the municipality (b) provide mobility enhancements on existing sidewalks such as adding ramps at street and driveway crossings and/or remove sidewalk obstructions, or (c) provide features to assist those with visual impairments would be eligible.

**Bicycle paths and lanes.** The construction of off-road bicycle paths or on-street physically segregated bicycle lanes will be considered for federal assistance if it can be demonstrated that these facilities would either encourage significant usage for trip-making purposes or would substantially improve bicyclist safety on heavily used bicycle corridors.

**Facilities to enhance bicycle transit interchange.** Provision of secure bicycle parking facilities at metro stations and at high volume tram and bus stops would be eligible.

### 4.4.7. Specified Areas of Technical Assistance

**Eligible activities.** The Federal Targeted Program would provide funds for consultancy services, legal advice, transaction advice, and other types of technical assistance that would strengthen municipal institutions and provide basis for improved planning operation of city transport systems. Examples of eligible activities are described below:

**Development of municipal transportation institutions.** Municipalities selected for federal assistance in one or more of the above elements of the federal program should be required to commit to appropriate strengthening of their municipal institutions (Section 4.5.2). To support this effort, federal assistance would be provided as appropriate in the following areas:

- Consultancy services that would assist establishment of municipal transportation institutions, for instance, functional review of the existing institutions, or in case a new entity should be created, drafting of a charter and terms of reference for the new entity;
- Equipment and software for start-up of new institutions; and
- Provision of a seconded external advisor during limited amount of time for capacity building.

This financial support can be combined with advisory and guidance by the proposed National Advisory Facility (described in Paper III) on appropriate staffing, functions, and organization of municipal transportation institutions. Priority for this type of support would be directed at cities in underdeveloped or low-income regions of the Federation in greatest need of this assistance.
Other areas for technical assistance for municipalities. Several other areas would also be considered for this grant, and support would be provided in form of full or partial funding for consultancy fees, advisory services, equipment and software purchase, training programs, external advisor fees, and so forth. These areas include, but are not limited to, the following:

- Preparation of urban transport strategies and investment program;
- Improvement or establishment of road asset management systems;
- Introduction of innovative road contracts, such as performance-based contracts;
- Assessment of road traffic safety and development of traffic safety improvement plans;
- Development of support plans for non-motorized transportation; and
- Assessment of environmental impacts of transportation and development of green transportation measures.

Support to regional governments. Since urban transportation is defined as a municipal responsibility, it is recommended that the role of oblast governments be limited to assisting cities by eliminating legal and regulatory impediments at the regional level (see Paper II for details). Regional governments, however, would be eligible to receive the Technical Assistance Grants for consultancy services and/or legal advice to implement necessary legal and regulatory reforms. Such examples are described below:

- Development of regional laws and regulations on concession arrangements. Oblast governments may wish to develop laws and regulations to permit new improved concession arrangements whether or not individual municipal governments initially petition to implement these proposed new franchise arrangements. Federal assistance could be directly provided to the requesting oblast for this assistance.
- Development of regional laws and regulations on on-street paid parking. The role of the oblasts here could be critical and potentially very beneficial in establishing the legal basis for paid on-street parking in the larger cities within the oblast. Federal funds might be used to provide assistance in drafting the required regional laws tailored to the needs and preferences of the participating oblasts as well as in drafting specific municipal laws/regulations for those cities wishing to implement paid on-street parking programs.

4.5. IMPORTANT PRINCIPLES OF FEDERAL FUNDS ALLOCATION

4.5.1. Funds Allocation Rules

At the time of writing, the amount of available funds for the proposed Federal Targeted Program is not known. Also uncertain is when and in what scope the administrative body of the Program would be established, which is another critical prerequisite for the implementation of the Program. These two factors will have a substantial bearing on how large the program might be, the number of regions and municipalities that would be involved, and the number of specific sub-programs in areas outlined in Section 4 of this paper that could be reasonably funded. This will have to be a subject of further discussion and resolution once the scale of the program is agreed upon and a timetable for development of the National Advisory Facility is prepared. In the interim the alternative possibilities for allocation of federal funds under the proposed program might be considered as follows:

The number of sub-programs to be supported. The number of projects to be funded under each of the sub-programs as set out in Section 4.4 is likely to vary substantially due to their complexity and/or cost. For example, the candidate area 4.4.4, the public transport franchise contracts, is both ambitious and complex. While this reform is likely to be highly beneficial, it might be prudent to limit applications for this reform to a few municipalities to test this reform as a pilot for wider application at a later date.

Nevertheless, this does not preclude oblast level institutions from becoming involved in assisting municipal governments in performing their required obligations. In fact, the cooperation between regional authorities and cities should be encouraged, provided that the prime responsibility for implementation rest with the municipalities. As an example, an oblast level institution may engage with the municipality to procure and/or operate and maintain traffic signals.

Paper III proposes several options for institutional arrangement and provides a review of existing institutions and entities that may be considered to perform as a Federal Program Administrator and/or a National Advisory Facility.
Conversely, the implementation of traffic signal system upgrades and implementation of low-cost street infrastructure improvements to improve traffic flow and to enhance traffic safety, and/or to improve passenger transport operations might be implemented in a larger number of cities. In summary, it might be prudent for the Ministry of Transport to set targets or guidelines for the number of sub-programs by type to be supported during the early years of the program.

The number of projects and the grant size per project. The total federal budget available for the proposed Program is likely to be limited at least at the initial stage of implementation. Within a fixed budget allocation, there will be trade-offs between the number of projects and the grant size per project, and this would be a political as well as technical/economic decision. For instance, it may be decided that spreading small amounts to a large number of cities is politically more justifiable than targeting a few projects. Nevertheless, there may be benefits in limiting the number of participating cities at the initial stage, for instance, to 6-8 pilot cities, in order to test the Program for wider application in the future. The smaller number of projects would mean easier implementation support and results monitoring, and the larger grant amount per project could result in more substantial impacts of investments.

Sustainability of the Program. Financial sustainability of the Program depends on the extent to which the Program is self-financed. Tax revenues that are tied to the performance of the Program, such as motor fuel taxes or vehicle registration fees, would be good sources to fund the Program. Considering including loans instead of or in addition to grants to creditworthy borrowers would also allow for the Federal Government to increase the size of the Program while ensuring its financial sustainability.

4.5.2. Grant Conditionality

Urban transport strategy and investment program. To qualify for the Capital Investments Grants sub-program, a municipality should have a long-term (minimum 10 years) urban transportation strategy and a cost-constrained multi-year urban transport investment program (minimum 5 years) within which proposed grant projects are included. This would ensure that the funds are allocated for high-priority projects and minimize opportunistic use of the funds. Participating cities would need to commit to formally adopting the long-term strategy during the program implementation period. The cost-constrained multi-year investment program should take into account the capital investments and recurrent expenditures of all aspects of the urban transport systems serving the city. The total amount of the investment programs must be based on reasonable expectations given the transport expenditures made in the recent years.

Regional transport strategy. The same principle is applied to the cases where regional governments receive Capital Investment Grants for projects that are of urban nature, such as improvement of commuter passenger public transport systems. The regional authorities need to justify that the proposed projects are of high-priority in their long-term transport strategy.

Institutional strengthening. To qualify for the Capital Investment Grants sub-program, cities and regions need to have, or commit to establish, an acceptable institutional setup, organizational structure, and staffing in their transportation departments. Since many Russian cities have had to address urban transportation issues that have rapidly emerged over the past 10-15 years, they are often understaffed with qualified personal and frequently inadequately organized to address broad and complex urban transportation issues (see the assessment in Paper I). Cities and regions applying for Capital Investments Grants would therefore be required to submit to a review by the program administrator the institutional setup, functions, organizational structure and staffing of their transport departments. The program administrator would make recommendations for institutional and organizational changes to

49 In the US, funds allocated to federal assistance for public transit comes from funds generated in the road sector, implying cutbacks of potential investments in the road sector.
adequately manage the federally supported projects, as well as other urban transport issues. The cities would in turn need to commit to making the recommended changes over an agreed time period. In some cases this may include outsourcing responsibilities to external entities such as oblast level institutions or consulting firms.

**Cost-sharing by participating cities and regions.** Counterpart contribution is highly recommended for all grants as this would ensure the local government commitment to the investment. Local governments would have greater ownership when their own resources are committed, compared to when it is 100 percent federal grant and free of costs to them. Strong ownership would then potentially lead to better outcomes. The percentage share of federal grant vis-à-vis local government contribution could vary by sub-program and also could be based on the size and income level of the participating municipality/oblast. In addition, municipalities receiving grants for capital investments for new infrastructure should submit a financial plan to cover recurrent operating and maintenance costs of the new infrastructure during a reasonable time period. The role of the sponsoring oblast would be important both with regard to making this determination as well as with regard to possibly providing some financial assistance through the budgeting process.

**Establishment of baseline data and regular updates.** Municipalities and regions selected for any of the above Targeted Grants sub-programs would be required to collect and share urban transport performance data, in order to establish baseline and monitor project impacts. The proposed National Urban Transport Database Center, under the National Advisory Facility (see Section 3.6 of Paper III), would be responsible for developing a standard template of urban transport database and for collecting and managing the data. All participating cities would be required to establish baseline data in accordance with the template and continue updating the information on a regular basis.

**Federal assistance to help meeting the grant conditionality.** Some cities may need technical assistance in meeting the above grant conditionality. The National Advisory Facility (Paper III) would provide examples of good practices and how-to guidance on specific technical areas for the use of all cities. The proposed Federal Targeted Program Administrator may provide additional guidance to grant receiving cities on a request basis, in collaboration with the knowledge and advisory function of the National Advisory Facility. Cities that do not meet the conditionality for the Capital Investments Grants may still be qualified for other grants, especially the Technical Assistance Grants, which may be used to meet the conditionality.

## 4.6. PROGRAM PROCESSING REQUIREMENTS AND INSTITUTIONAL ARRANGEMENTS FOR IMPLEMENTATION OF THE FEDERAL TARGETED PROGRAM

### 4.6.1. Phased Implementation

During the first phase of the Federal Targeted Program the capacity of the designated administrative entity (see Section 3.5 of Paper III) is likely to be insufficient to administer a geographically spread grants program in a large number of cities. Hence, it would be realistic to take a phased approach in the development of the Federal Targeted Program, coinciding with the gradual strengthening of the designated administrative entity. It would be prudent to start with the Targeted Program in a limited number of cities and in a pilot scale. At the same time, the Technical Assistance Grants can be provided during this early stage to a larger number of cities, in order to support capacity-building. After the pilot stage, the Targeted Program could be increased based on a careful evaluation and lessons learned during the implementation of the pilot program.
Gradually, through the support for capacity-building provided by under the Technical Assistance Grants program, it is expected that the growing number of cities would meet the grant conditionality and become capable of preparing acceptable applications for the Targeted Program.

4.6.2. Municipality Eligibility Criteria

During the initial phase of program development eligible cities may be limited to those that meet the following criteria:

**City size.** The urban transport challenges facing Russian cities tend to be more pronounced in larger and denser cities. It is therefore recommended that the proposed Program should target cities with populations of 250,000 or more, where the traffic management and passenger transport issues are most acute. At present 70 cities have populations meeting this threshold\(^5\). These cities are likely to have institutional and administrative capacities needed to fulfill the grant conditionality and to successfully manage projects.

**Eligibility criteria specific to each sub-program.** Each of the above grant sub-programs finances activities with very different funding requirements and risk levels. Hence each of the grant sub-programs requires a differing degree of institutional sophistication for successful implementation. Applicable eligibility criteria are listed below:

- **Capital Investments Grants:** During the initial phase of the Targeted Program, only cities that already developed some form of an urban transport strategy and multi-year investment plans may be made eligible for capital assistance grants until other cities catch up taking advantage of the Technical Assistance Grants;

- **Public Transport Franchise Contracts Grants:** This sub-program requires greater “readiness” of municipalities and more complex implementation arrangements than other sub-programs. As discussed earlier in Section 4.4.4, participating cities and regions should fully adopt competitive tendering and integration of public transport services, under which selection of operators is based on contracts that specify service quality and vehicle standards. Currently, it is anticipated that very few cities would be ready to receive funds under this sub-program. Therefore a few advanced cities might be selected as pilot cities where a full package of assistance would be provided, including regulatory reforms, institutional support for commercialization of municipal enterprises, assistance throughout tendering process, and implementation of the new franchise contracts;

- **Technical Assistance Grants:** As mentioned earlier, in line with the regional development strategy of the country, an emphasis on technical assistance grants for lagged regions and municipalities to improve their institutional and technical capacity should be considered. Per capita income may be used as an eligibility criterion.

4.6.3. Application, Selection Process and Project Evaluation Criteria

Given that several municipalities will be interested in the federal program, it will be important to design the application and selection process in a cost-effective and fair manner under which initial applications would not be too costly to prepare. This might be best accomplished with the candidate municipalities preparing documentation in a step-wise fashion as described below:

\(^5\) By comparison there are 37 cities over 500,000 population and 164 cities over 100,000 populations. Source: http://citypopulation.de/Russia.html. Since several cities have populations slightly below the proposed 250,000 population threshold, this city size eligibility criterion may appear arbitrary. Cities with populations below this threshold (for example, over 200,000) might be allowed to seek eligibility exemptions by demonstrating strong financial and institutional commitment as outlined in Grants Conditionality measures (Section VI.B).
**Submission of Proposals – Concept Stage.** As a first step candidate municipalities should be required to prepare concept proposals that would provide preliminary information in an agreed format on the proposed objectives, detailed scope, estimated benefits and estimated indicative costs of the proposed program elements for which federal assistance is sought. Based on this initial proposal, a review would be undertaken by the Federal Targeted Program Administrator and a determination would be made on whether the application deserves serious further consideration.

**Modification of Proposals.** Those municipalities which have prepared preliminary applications and which have passed the initial review might be requested to make modifications or refinements to their proposals for further consideration. Those municipalities which have prepared fully acceptable concept proposals would be advised to prepare feasibility studies for further consideration51.

**Feasibility Studies.** Municipalities passing the concept stage would prepare feasibility studies as the primary basis for final selection into the program. These studies would be at least partially funded under the federal program. The format and content of what must be contained in the feasibility studies would need to be carefully specified for each of the proposed program elements previously described. These studies would, in particular, address the project evaluation criteria as set out below.

All proposed requests for federal assistance should be reviewed with respect to a series of evaluation criteria the general thrust of which is as follows:
- **Technical Feasibility.** Does the proposed application make sense in practical application? Can it be implemented in a timely fashion? Are the proposals consistent with recognized best practices?
- **Financial Feasibility.** Is the proposed application affordable to the recipient municipality particularly with respect to recurrent annual expenditures for operations and maintenance? Have suitable budget arrangements been reached with the sponsoring oblast so that the necessary expenditures under the applied for program element(s) can be made in an orderly and timely manner throughout implementation?
- **Economic Feasibility.** Are the estimated economic impacts of the proposed investments sufficiently positive that they would generate a positive economic rate of return in relation to the amount of federal and counterpart funds that will be devoted to this investment?
- **Environmental and Social Impact.** Related to but somewhat distinct from economic feasibility is question on whether the proposed investments are going to cause any negative environmental or social impacts and what they are. Conversely, will they provide positive impacts and how significant are they?
- **Institutional Arrangements.** Does the municipality have suitable organizational and staffing plans and commitments in place to convincingly implement and operate the proposed project?

The specific contents of what should be included under each of these evaluation criteria should be spelled out in more detail for each of the proposed sub-programs described in Section 4.5., once the exact substance of this program is decided upon.

**Evaluation of detailed proposals.** Based on feasibility studies a final decision would be made as to which candidate proposals would be eligible for funding under the program. The decision would be made by a panel of experts designated by MOT.

**Commencement of program implementation.** Once accepted into the program, federal funding would be made available for the physical investments as well as detailed engineering, contract documentation, technical assistance and other measures needed to proceed with program implementation.

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51 Some municipalities may have already prepared feasibility studies in which case they could skip the initial concept stage and would be evaluated on the basis of the feasibility study.
4.6.4. Monitoring Project Implementation

All recipient cities and regions are required to monitor the implementation progress on a regular basis and report to the program administrator. Specific guidelines for implementation monitoring may be provided at later stage after the technical contents of the proposed Program are discussed and agreed upon.

4.7. INSTITUTIONAL ARRANGEMENTS FOR PROGRAM IMPLEMENTATION

4.7.1. Ministry of Transport

Overall responsibility for the federal program would rest with the Ministry of Transport. This would include final design of the program as set out in this paper and approving the applications for federal funding by the regions and municipalities. It is also anticipated that MOT officials would be involved in advancing national legislation that may be required to fully implement the proposed Program as well as in resolving issues and disputes among the regions and municipalities seeking federal funds.

4.7.2. Federal Targeted Program Administrator

It is recommended that an entity designated by the MOT—the Federal Targeted Program Administrator (either within or outside the National Advisory Facility) as described in Paper III—should administer the proposed Federal Targeted Program. This entity should:

- Review and evaluate all city applications as described in Section 4.6.3 of this paper;
- Verify whether the applicants meet eligibility criteria and are prepared to fulfill the grant conditionality;
- Decide which applications are suitable for further consideration;
- Seek some clarifications or modification to conditionally accepted applications;
- Provide guidance in final program element design;
- Assist with the initial stages of securing consultants for detailed engineering and procurement;
- Review and approve all procurement of consultants, civil works, and goods;
- Supervise program implementation with respect to meeting the agreed parameters;
- Monitor fulfillment of grant conditionality.

Staffing of the Federal Targeted Program Administrator will become a very important early matter to resolve once the targeted assistance program is initiated. The size and composition of this entity will depend in large part on the range of sub-programs and number of municipalities to be included in the program. It is expected that substantial recruitment of staff will be required and that consultants may be required to ensure that this entity will be able to adequately perform its required functions.

4.7.3. Role of oblast governments

Since most municipalities eligible for this program will be subjects of the regional governments (oblasts), the oblasts will have a major role in assisting cities. More specifically, it is expected that the oblasts will (a) assist municipalities in preparing refinements to their applications in seeking acceptance into the program, and (b) provide support as needed to facilitate program implementation for those municipalities selected for participation in the program. The role of the oblasts will be particularly important in working out and establishing suitable budgetary arrangements for the municipalities to be able to successfully implement, operate, and maintain the federal program. The role of the oblast governments will

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52 For instance, the US Federal Transit Administration provides a total grant of about US$10 billion per year to states (equivalent to Russian regions) and municipalities, which include both formula-based and targeted grants of various purposes. Out of the current total staff (200 in the HQ, 320 in 10 regional offices), about ¾ of them work on administering the various grants. The FTA provides grants directly to state and local level service providers, primarily through its 10 regional offices.
be important in advancing legislation and regulations pursuant to successful implementation of passenger transport reforms and in establishing paid on-street parking programs in municipalities. Oblast governments also would be eligible for direct federal assistance in certain elements of the federal program. As presently conceived, it does not appear that the oblasts would need to reorganize institutionally to administer their responsibilities. However, certain staffing improvements may be required. The organizational and staffing requirements of the oblasts deserves further investigation than was possible at the time of writing this paper and will need to be addressed later in this assignment.

4.7.4. Municipal arrangements for program implementation

The importance of suitable municipal organizational and staffing commitments for implementation of the federal program cannot be stressed strongly enough. Successful municipal implementation of the program will rest heavily of the municipalities undertaking as suitable organizational and staffing actions and reforms as required. For this reason federal assistance is proposed under the program to institutionally assist municipalities as described in Section 4.4.7. of this paper. Further stressing the importance of this matter institutional commitments required of the city are articulated in Section 4.5.2. of this paper.
ANNEX 1: REVIEW OF RUSSIAN LEGAL FRAMEWORK PERTINENT TO URBAN TRANSPORT

The Layers of the Law

There are several layers of legal provision relevant to the urban transport sector. These include:

- **The Russian Constitution**, adopted in 1993, is the supreme law of the land. Courts are guided by the Constitution, which supersedes federal and local laws. The Constitution provides the rights of the citizens, allocation of powers and responsibilities of the federation and its subjects;

- **Statutes** are the predominant legal source of Russian law, and may only be enacted through the legislative process;

- **Codes** are the basis for law on a matter, and they are usually supplemented with legislation to develop certain provisions. Codes are interpreted flexibly, and interpretation may be based on enumeration of “general principles” of the codes, articulated at the beginning of the codes. Among the main codes relevant to urban transport are the civil code, the urban planning code, the Tax Code, the Budget Code and the code on administrative violations. New codes and laws supersede old ones, unless a statute expressly preserves the old law;

- **The Russian Civil Code** was adopted in 1994;

- **Normative and non-normative decrees** may be issued by the President provided that they do not contravene the Constitution and federal laws. Government may also issue resolutions having normative character;

- **Regulations** may be enacted by agencies through their general competency or through specific enabling legislation, but these must not contradict the principles embodied in the Constitution or the relevant codes. The existing traffic rules are an important example of regulations pertaining to urban transport, which are of lower status than that of a law, but are easier to modify than a law would be.

The Constitution

**The primacy of the Constitution.** Chapter 1 introduces the Constitution as the highest law of the land. Article 4 states that “the Constitution of the Russian Federation and federal laws shall have supremacy in the whole territory of the Russian Federation”. Articles 114 and 115 also give the government the power to issue decrees and regulations which shall be obligatory for all subjects of the federation so long as they are not in conflict with the Constitution. Any changes, which are made to regional laws or to federal law, have thus to be tested against the provisions of the Constitution. While the Constitution itself can be changed, it is unlikely that any constitutional change would be pursued to accommodate policy changes in a single sector. However, where there is any lack of clarity in the Constitution it may be clarified by further federal legislation.

**The rights of the citizen.** Chapter 2 deals with the rights of the citizen, including rights with respect to housing, medical and education services. There is no direct reference to transport. Although Article 27 refers to the general freedom of movement, this has not been an impediment to legislating restrictions on the movement of vehicles in the subsequent traffic rules or in laws such as the recent Law 69-FZ. Any concessionary fare provisions are subsequent political decisions for which direct compensation may be paid by the relevant mandating authority.

**The allocation of powers and responsibilities.** The allocation of powers is dealt with in Chapter 3. Articles 71 and 72 specify the sectors that shall be within the power of the Federation (including federal transport and railways) and the joint power of the Russian Federation and the constituent territories of the Russian Federation (including protection of the environment, establishment of a common system of taxation, and the pursuit by the Government of the Russian Federation of a common policy in the
area of environmental protection in accordance with Article 114). Article 73 then assigns all other powers—implicitly including urban transport—to the constituent territories of the Russian Federation and Article 76 states that the constituent territories of the Russian Federation may make their own laws in these areas so long as they do not conflict with federal law, in which case federal law shall be superior. The Constitution thereby implies, inter alia, that the power and responsibility of urban transport falls to the regions.

Local self government. Article 12 states that local self-government shall be recognized and guaranteed and that local self-government shall be independent “within the limits of its authority”. Article 132 states that local self-government shall independently manage municipal property, form, adopt and implement the local budgets, introduce local taxes and dues, ensure the protection of public order, and also solve other issues of local importance. The local self-government bodies (by implication third tier authorities) “may be vested by law with certain state powers and receive the necessary material and financial resources for their implementation”. However, because they receive powers only by subsequent acts of law, their powers are limited to the extent granted in specific laws, and not inherent in the Constitution.

The Civil Code

The Civil Code is the “Constitution of the market economy” that sets the basis for civil legislation.

Municipal unitary enterprises. The municipal unitary enterprise is a special form of enterprise provided for in the Civil Code. Article 113 provides for the unitary enterprise to be recognized as a commercial organization, not endowed with the right of ownership to the property, allotted to it by the property owner. The property of the state-run or the municipal unitary enterprise is vested in state or in municipal ownership, and is assigned to the enterprise by the right of economic or operative management. Article 215 states the property in the municipal ownership shall be assigned to the municipal enterprises and to the institutions into the possession, the use and the disposal in conformity with the present Civil Code (Articles 294 and 296). Under Article 295 in the case of property in economic management the owner has a right to a share in the profit and the enterprise cannot dispose of the “immovable” assets. Only state-run and municipal enterprises can be established in the form of unitary enterprises.

The unitary enterprise operates under different conditions from a normal legal entity. It is exempted from the normal rights and obligations of a legal entity as contained in Article 49 and the bankruptcy provisions as set out in Article 65 are not applied to the unitary enterprise operating based on the management control rights assigned to it. Instead, Article 114 says that a unitary enterprise may be set up with an authorized fund. The Charter of the unitary enterprise will contain information on the size of its authorized fund and on the order and the sources of its formation. If the value of its assets falls below that of the authorized fund, as determined by a Law on Municipal and State Unitary Enterprises, it may be liquidated. The fact that assets remain in the ownership of the municipality means that the municipality is responsible for the replacement of the assets, or for increasing the assets if that is considered necessary.

The Civil Code does appear to provide for change in this status. Article 299 states that the right of economic management and the right of operation management shall be terminated on the grounds and in conformity with the order, stipulated by the present Code, by the other laws and the other legal acts for the termination of the right of ownership, and also in the case of the lawful withdrawal of the property from the enterprise or from the institution by the owner’s decision. Moreover, Article 217 states “The property in the state or in the municipal ownership may be transferred by its owner into the ownership of the citizens and of the legal entities in the order, stipulated by the laws on the privatization of the state and of the municipal property.” In this way the privatization of urban public transport operations appears to be at the discretion of the oblasts and municipalities.
Contracts. Chapter 27 of the Civil Code deals with contracts. It asserts that all contracts should be voluntary except in cases when the obligation to enter into a contract is envisioned in the Civil Code or the relevant law. Article 424 deals with the price of the contract stating "In the law-stipulated cases, the prices (the tariffs, estimates, rates, etc.) shall be applied, fixed or regulated by the specially authorized state bodies and/or local governments." This could be deemed to apply to bus service contracts and might be interpreted to exclude the normal price based tendering.

A further section of the Civil Code deals with the conclusion of a contract by tender. Article 447 states that the form of the bidding shall be defined by the owner of the thing on sale or by the possessor of the realized right of ownership, unless otherwise stipulated by the law. Article 426 on the Public Contract is related to provision of public transport services. The article states the principle of non-discrimination between users except as specified by a law, but in the law-stipulated cases, the Government of the Russian Federation may issue the rules, obligatory for the parties in concluding and performing public contracts (the standard contracts, the provisions, etc.). This implies that any attempt to tighten up or standardize the form of competitive tendering of public transport services would need to be embodied in a specific new law.

Budget Code and Tax Code53

Responsibilities for service provision in Russia are divided among the three tiers of sub-national government: Sub-national governments (republics, krais, oblasts, districts, and cities of federal importance) assume the predominant role in providing social services, including child allowances, social assistance for the poor, and medical insurance for the unemployed. They finance pre-primary, primary, and secondary education, and build and maintain regional roads and intercity transportation.

Second-tier sub-national governments (rayons) are responsible for delivering education and health services. They provide pre-primary, primary, and secondary education, as well as most hospital care. Funding for education is provided by the first tier of sub-national government; funding for hospital care is provided partly by regional health insurance funds and partly from each jurisdiction’s own revenues. Second-tier sub-national governments are also responsible for building and maintaining roads within their jurisdictional boundaries. The third-tier of sub-national governments (the settlements) are responsible for providing urban public utilities and public transport and maintaining housing.

Very small urban agglomerations might formally have the status of settlements, while medium sized cities might have the status of rayons. Larger cities subsume the roles of multiple tiers of sub-national government. For instance, Cities of Oblast Subordination are responsible for the functions assigned to both the second and third tiers of sub-national administration. Cities of federal importance (Moscow and St. Petersburg) are responsible for these functions as well as those assigned to first-tier sub-national governments (including the responsibilities for urban transportation as discussed below).

Taxing powers. Taxing powers are distributed among the tiers of government, with the federal government defining the base and administering most taxes. However, regional and local governments set the rates of regionally controlled and locally controlled taxes, respectively, as well as the procedure for payment of taxes and tax concessions. With regard to federally controlled taxes, the proportion of the tax to be retained by subordinated levels of government is specified. This distribution of taxing powers and tax revenues is shown in Table A.1.1.

53 Data and assessment of this Section is from «Eurasian Cities: New Realities along the Silk Road», World Bank (September 2012).
Table A.1.1. Distribution of Tax Revenues among National, Sub-National and Local Budgets (2009)

<table>
<thead>
<tr>
<th>Taxes controlled by</th>
<th>Type of Taxes</th>
<th>Share Retained by Each Tier</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Federal</td>
</tr>
<tr>
<td>Federal body executive power</td>
<td>Enterprise profit tax</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Personal income tax</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excise on alcohol</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Excise on gasoline</td>
<td>40</td>
</tr>
<tr>
<td></td>
<td>Special tax on imputed income</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Special tax on small businesses</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Special agriculture enterprises tax</td>
<td>10</td>
</tr>
<tr>
<td>Regional body of executive power</td>
<td>Taxes on transport, gambling and assets of legal entities</td>
<td></td>
</tr>
<tr>
<td>Local governments</td>
<td>Individual property and land taxes</td>
<td></td>
</tr>
</tbody>
</table>

Source: Government of Russia, 2010; cited from World Bank (2012)

In addition to receiving specified shares of the main taxes, sub-national governments also receive intergovernmental transfers from higher levels of government. The principal intergovernmental transfer from the federal government to first tier sub-national government is a gap filling equalization grant. The taxes to be equalized include the personal income tax (PIT), corporate profit tax (CPT), uniform tax on imputed income, property taxes, excise taxes, and taxes on mineral extraction. Although it has been modified several times, it is essentially aimed at reducing disparities in per capita tax revenues. All sub-national governments that collect less than 60 percent of the national per capita average (a calculation that excludes the ten richest and ten poorest of them) are to receive grants covering 85 percent of the gap. Over time, the formula has been modified with a view to reducing regional imbalances taking into account the costs of providing public services. The 2010 formula takes into account factors reflecting federally-determined variations in wage rates and indicators of remoteness of constituent territories of the Russian Federation and variations in living costs.

In principle, the total amount of the grant is determined endogenously: the federal government is required to contribute whatever sum is needed to meet the minimum level of required budgetary sufficiency of a constituent territory of the Russian Federation. Under the system of multi-year budgeting, however, the amount is to be fixed three years in advance. In addition to the equalization grant, there are transfers to compensate for federal mandates, such as rent subsidies for war veterans, and the costs of operating civil registration offices capital transfers, and some co-financing for social expenditures.

The system of transfers from sub-national budgets to their respective subordinate budgets varies from one jurisdiction to another, although it is subject to general principles specified in the Budget Code. The Code authorizes sub-national governments to use two instruments to provide general budget support (as opposed to earmarked funding for such functions as education) to subordinate tiers. First, they may assign fixed shares of their own tax revenues (e.g., the transport, gambling and corporate property taxes). These shares must be uniform for all jurisdictions. Second, they may establish formula-based equalization transfers. The Code ‘envisions’ that these will be allocated on the basis of tax capacity and cost drivers (e.g., the socio-economic status and age profile of the population, climate, etc.). It also allows for ‘negative transfers’. If a subordinate jurisdiction’s per capita revenues are more than twice the average for the region, the regional government is permitted to take up to 50 percent of the excess and reallocate it to poorer jurisdictions.
As a result, the level of revenues available to the local budgets is the product of a cascading series of events and decisions taken at higher levels of government, beginning with the level of PIT and CPT revenues collected and retained by its oblast and its oblast’s share of federal equalization grants. As illustrated in Figure A.1.1., the constituent territories of the Russian federation pool these revenues, allocate some to finance their own expenditures and transfer some to their respective urban districts. Urban districts then pool these revenues with their own shares of the PIT, along with receipts from the agriculture tax and smaller taxes, allocate some to finance their own expenditures and transfer some to their respective settlements. The level of resources available to a given settlement is then the sum of these transfers, their own share of the PIT and receipts from property taxes and other local fees and charges. As shown in Figure A.1.1., some of this is used to finance the settlement’s own expenditures and some to finance recurrent subsidies or capital investments undertaken by their enterprises.
ANNEX 2: RUSSIA URBAN TRANSPORT SECTOR REVIEW

Basic Characteristics of the Cities

The Review was undertaken in association with an effort by the Ministry of Transport of the Russian Federation (the Ministry, hereafter) to find ways of encouraging the development of sustainable urban transport systems in Russian cities. The Ministry, acting through the regional authorities, invited all Russian cities to participate in the Review. 25 cities filled completed a questionnaire prepared by the Bank team. Among them, eight cities\(^{54}\) sent delegations—decision-makers and practitioners—to a consultation meeting hosted by the Ministry and the Bank, in Moscow in September, 2011. The consultation meeting consisted of a workshop and individual technical sessions, in which city-specific issues were discussed. Following the consultation meetings, the Bank team visited Lipetsk, one of the eight cities participated in the consultation meeting.

The basic statistical information of the surveyed cities is shown in Table A.2.1. Population has increased modestly in most cities, except Nizhniy Novgorod, Tambov and Kamyshin. Only three cities—Krasnodar, Tyumen and Ussuriysk—have experience average annual growth rates above 1.5 percent. Most cities have average income per capita below the national average of US$ 9,900 in 2010.

Table A.2.1. Basic Data of the Interviewed/Surveyed Cities

<table>
<thead>
<tr>
<th>City</th>
<th>2010 Population (thousand)</th>
<th>Annual average growth since 2002(%)</th>
<th>Area (km(^2))</th>
<th>Density (pop/km(^2))</th>
<th>2010 Average income (US$/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novosibirsk</td>
<td>1,473</td>
<td>0.36%</td>
<td>507</td>
<td>2,812</td>
<td></td>
</tr>
<tr>
<td>Yekaterinburg</td>
<td>1,387</td>
<td>0.78%</td>
<td>468</td>
<td>2,964</td>
<td></td>
</tr>
<tr>
<td>Nizhniy Novgorod</td>
<td>1,262</td>
<td>-0.42%</td>
<td>411</td>
<td>3,071</td>
<td></td>
</tr>
<tr>
<td>Omsk</td>
<td>1,154</td>
<td>0.19%</td>
<td>567</td>
<td>2,035</td>
<td>6,864</td>
</tr>
<tr>
<td>Rostov-on-Don</td>
<td>1,070</td>
<td>0.02%</td>
<td>349</td>
<td>3,070</td>
<td></td>
</tr>
<tr>
<td>Volgograd</td>
<td>1,022</td>
<td>0.12%</td>
<td>859</td>
<td>1,190</td>
<td>6,924</td>
</tr>
<tr>
<td>Krasnodar</td>
<td>786</td>
<td>2.20%</td>
<td>840</td>
<td>936</td>
<td></td>
</tr>
<tr>
<td>Vladivostok</td>
<td>617</td>
<td>0.41%</td>
<td>562</td>
<td>1,099</td>
<td></td>
</tr>
<tr>
<td>Tyumen</td>
<td>615</td>
<td>2.09%</td>
<td>235</td>
<td>2,617</td>
<td></td>
</tr>
<tr>
<td>Tomsk</td>
<td>545</td>
<td>1.24%</td>
<td>294</td>
<td>1,854</td>
<td>6,540</td>
</tr>
<tr>
<td>Astrakhan</td>
<td>521</td>
<td>0.36%</td>
<td>209</td>
<td>2,495</td>
<td>8,268</td>
</tr>
<tr>
<td>Kemerovo</td>
<td>512</td>
<td>0.61%</td>
<td>295</td>
<td>1,737</td>
<td>8,208</td>
</tr>
<tr>
<td>Lipetsk</td>
<td>508</td>
<td>0.04%</td>
<td>330</td>
<td>1,540</td>
<td>8,167</td>
</tr>
<tr>
<td>Cheboksary</td>
<td>463</td>
<td>0.55%</td>
<td>251</td>
<td>1,845</td>
<td>5,976</td>
</tr>
<tr>
<td>Ulan-Ude</td>
<td>406</td>
<td>1.36%</td>
<td>377</td>
<td>1,076</td>
<td>8,909</td>
</tr>
<tr>
<td>Stavropol</td>
<td>399</td>
<td>1.31%</td>
<td>277</td>
<td>1,442</td>
<td></td>
</tr>
<tr>
<td>Volzhskiy</td>
<td>314</td>
<td>0.03%</td>
<td>150</td>
<td>2,096</td>
<td></td>
</tr>
<tr>
<td>Tambov</td>
<td>280</td>
<td>-0.51%</td>
<td>153</td>
<td>1,832</td>
<td></td>
</tr>
<tr>
<td>Velikiy Novgorod</td>
<td>219</td>
<td>0.11%</td>
<td>90</td>
<td>2,433</td>
<td></td>
</tr>
<tr>
<td>Ussuriysk</td>
<td>184</td>
<td>1.72%</td>
<td>134</td>
<td>1,377</td>
<td></td>
</tr>
<tr>
<td>Kamyshin</td>
<td>119</td>
<td>-0.80%</td>
<td>38</td>
<td>3,132</td>
<td>4,464</td>
</tr>
<tr>
<td>Akhtubinsk</td>
<td>42</td>
<td></td>
<td>43</td>
<td>980</td>
<td>2,256</td>
</tr>
<tr>
<td>Znamensk</td>
<td>29</td>
<td></td>
<td>54</td>
<td>537</td>
<td>4,320</td>
</tr>
<tr>
<td>Kamyzyak</td>
<td>16</td>
<td></td>
<td>24</td>
<td>667</td>
<td></td>
</tr>
</tbody>
</table>

Note: (*) indicates average wage (US$ per year).

\(^{54}\) Novosibirsk, Nizhniy Novgorod, Tyumen, Tomsk, Lipetsk, Stavropol, Tambov, and Velikiy Novgorod.
The supply of transport infrastructure and services is highly variable across the cities surveyed (Table A.2.2.). The road network density, measured by the total length of the road network divided by the area of the city, ranges between 0.65 and 5.83 km/km²; although the gap is smaller among larger cities (population 500,000 and above), ranging between 1.5 and 4.5 km/km². In most cities, autobuses and minibuses are the primary public transport modes, though most still have electric tram and trolleybus networks. Private sector supply already exceeds that of the public sector in many of the cities. Public transport route coverage, measured by the total length of operating routes divided by population, ranges widely between 1.10 and 9.69 km per thousand inhabitants in the surveyed cities.

Table A.2.2. Supply of transport network and services

<table>
<thead>
<tr>
<th>City</th>
<th>Road network (km)</th>
<th>Road density (km/km²)</th>
<th>Public transport route length (km)</th>
<th>Route coverage (km/pop)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Total</td>
<td>Bus</td>
</tr>
<tr>
<td>Yekaterinburg</td>
<td>1327</td>
<td>2.84</td>
<td>2203</td>
<td>1601</td>
</tr>
<tr>
<td>Nizhniy Novgorod</td>
<td></td>
<td></td>
<td>2668</td>
<td>1010</td>
</tr>
<tr>
<td>Omsk</td>
<td>1404</td>
<td>2.48</td>
<td>5621</td>
<td>1943</td>
</tr>
<tr>
<td>Rostov-on-Don</td>
<td>1193</td>
<td>3.42</td>
<td>3934</td>
<td>1644</td>
</tr>
<tr>
<td>Volgograd</td>
<td></td>
<td></td>
<td>4249</td>
<td>773</td>
</tr>
<tr>
<td>Krasnodar</td>
<td>1651</td>
<td>1.97</td>
<td>3838</td>
<td>1228</td>
</tr>
<tr>
<td>Vladivostok</td>
<td>1127</td>
<td>1096</td>
<td>26</td>
<td>5</td>
</tr>
<tr>
<td>Tyumen</td>
<td>1112</td>
<td>4.73</td>
<td>3973</td>
<td></td>
</tr>
<tr>
<td>Tomsk</td>
<td></td>
<td></td>
<td>987</td>
<td>822</td>
</tr>
<tr>
<td>Astrakhan</td>
<td>819</td>
<td>3.92</td>
<td>2939</td>
<td></td>
</tr>
<tr>
<td>Kemerovo</td>
<td>1307</td>
<td>4.43</td>
<td>4960</td>
<td>1007</td>
</tr>
<tr>
<td>Lipetsk</td>
<td>508</td>
<td>1.54</td>
<td>1282</td>
<td>1113</td>
</tr>
<tr>
<td>Cheboksary</td>
<td>181</td>
<td>0.72</td>
<td>1430</td>
<td>1018</td>
</tr>
<tr>
<td>Ulan-Ude</td>
<td>245</td>
<td>0.65</td>
<td>1456</td>
<td>1400</td>
</tr>
<tr>
<td>Stavropol</td>
<td>455</td>
<td>1.64</td>
<td>2141</td>
<td>1955</td>
</tr>
<tr>
<td>Velikiy Novgorod</td>
<td>225</td>
<td>2.50</td>
<td>464</td>
<td>428</td>
</tr>
<tr>
<td>Ussuriysk</td>
<td>474</td>
<td>3.55</td>
<td>1474</td>
<td></td>
</tr>
<tr>
<td>Kamyzyak</td>
<td>67</td>
<td>2.79</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>
Transport Problems Perceived by the Cities

Congestion. Road traffic congestion is regarded as serious in most cities with population 200,000 or more, and increasing rapidly in some (Table A.2.3.). For example, Nizhny Novgorod estimated that the length of its road system that is overloaded would increase from 10 kilometers to over 25 kilometers in the period 2009-2013. The congestion was regarded primarily as the consequence of a very high rate of growth of the private car fleet. Especially, it is alarming that the larger Russian cities now have car ownership rates higher than some Western European cities that have much higher income levels (Figure A.2.1.).

Table A.2.3. Reported assessment of traffic congestion problems

<table>
<thead>
<tr>
<th>City</th>
<th>Self-Assessment of Traffic Congestion in City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yekaterinburg</td>
<td>Traffic congestion is a serious problem. During peak-hours, traffic speeds along main city streets are observed at 8-9 km/h.</td>
</tr>
<tr>
<td>Omsk</td>
<td>Road-based public transport operation is often delayed due to traffic congestion, up to 30-40 minutes later than the scheduled time.</td>
</tr>
<tr>
<td>Krasnodar</td>
<td>Traffic congestion is a serious problem. During peak-hours, traffic speeds along main city streets are observed at 10 km/h.</td>
</tr>
<tr>
<td>Tyumen</td>
<td>Traffic congestion during peak hours is a growing and severe problem. When the volume to capacity ratio exceeds 0.7, speeds noticeably decline and vehicles take more time to cross intersections, and the ratio often exceeds 0.9 on various road sections.</td>
</tr>
<tr>
<td>Tomsk</td>
<td>Traffic congestion during peak hours along main city streets causes time losses of 40 to 90 minutes per car.</td>
</tr>
<tr>
<td>Lipetsk</td>
<td>Traffic congestion is a serious problem. The speed at key choke points does not exceed 5 km/h during the peak hours.</td>
</tr>
<tr>
<td>Stavropol</td>
<td>The road infrastructure of Stavropol was not designed to support the substantially increased traffic flows; it corresponds to private car ownership of 60-100 cars per 1,000 residents, whereas the actual figure is already over 320 cars per 1,000 residents. This has resulted in the deterioration of traffic conditions, congestion and traffic jams, increased fuel consumption, worsening of the environmental situation and a growing number of traffic accidents.</td>
</tr>
<tr>
<td>Velikiy Novgorod</td>
<td>City suffers traffic jams at heavily populated crossroads. It is particularly felt during rush hours, affecting adversely the quality of passenger conveyances. Specifically, public transportation fails to follow its own timetables.</td>
</tr>
<tr>
<td>Ussuriysk</td>
<td>Traffic congestion during peak-hours and road repair works, and force majeure (e.g. natural disaster) is a key problem.</td>
</tr>
<tr>
<td>Kamyshin</td>
<td>Traffic congestion has recently become a problem, especially during peak-hours and at key junctions including entrance to the bridge.</td>
</tr>
</tbody>
</table>
Operating deficits and deteriorating fleet condition of municipal public transport services. All cities except three reported operating deficits of municipal bus operation; in case of Lipetsk, Volzhskiy and Znamensk, the deficits are as high as 183, 210 and 93 percent of the operating revenues respectively – i.e. fare revenues covering only between about 30 percent and 50 percent of operating costs (Table A.2.4). While similarly low levels of cost coverage occur in several western European cities, even those with commercial private sector suppliers, this is usually the result of a conscious policy of funded subsidy of a well maintained fleet. In contrast in Russia, the financial situation of municipal operators requires budget-financing for fleet replacement and is usually associated with an aged and deteriorating fleet.

Table A.2.4. Financial performance of bus operation and average age of bus fleet

<table>
<thead>
<tr>
<th>City</th>
<th>Operating costs (US$)</th>
<th>Operating revenues (US$)</th>
<th>Operating deficits† (US$)</th>
<th>Operating deficits† (% of revenues)</th>
<th>Average age of autobus fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yekaterinburg</td>
<td>55,642,297</td>
<td>40,424,543</td>
<td>15,217,753</td>
<td>38%</td>
<td>9</td>
</tr>
<tr>
<td>Omsk</td>
<td>92,542,057</td>
<td>82,766,450</td>
<td>9,775,607</td>
<td>12%</td>
<td>8.5</td>
</tr>
<tr>
<td>Krasnodar</td>
<td>69,753,250</td>
<td>72,877,020</td>
<td>-3,123,770</td>
<td>-4% (operating profits)</td>
<td>5</td>
</tr>
<tr>
<td>Tyumen</td>
<td>16,619,987</td>
<td>20,304,713</td>
<td>-3,684,727</td>
<td>-18% (operating profits)</td>
<td>5-27</td>
</tr>
<tr>
<td>Tomsk</td>
<td>19,717,867</td>
<td>14,563,800</td>
<td>5,154,067</td>
<td>35%</td>
<td></td>
</tr>
<tr>
<td>Kemerovo</td>
<td>45,630,000</td>
<td>40,050,000</td>
<td>5,580,000</td>
<td>14%</td>
<td>8.4</td>
</tr>
<tr>
<td>Lipetsk</td>
<td>34,509,583</td>
<td>12,195,980</td>
<td>22,313,603</td>
<td>183%</td>
<td></td>
</tr>
<tr>
<td>Cheboksary</td>
<td>28,840,000</td>
<td>26,206,667</td>
<td>2,633,333</td>
<td>10%</td>
<td>6</td>
</tr>
<tr>
<td>Ulan-Ude</td>
<td>9,963,333</td>
<td>9,150,000</td>
<td>813,333</td>
<td>9%</td>
<td>Municipal operator: 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Private operators: 7</td>
</tr>
<tr>
<td>Stavropol</td>
<td>9,646,667</td>
<td>7,093,333</td>
<td>2,553,333</td>
<td>36%</td>
<td>6</td>
</tr>
<tr>
<td>Volzhskiy</td>
<td>14,562,353</td>
<td>4,690,910</td>
<td>9,871,443</td>
<td>210%</td>
<td>12.4</td>
</tr>
<tr>
<td>Velikiy Novgorod</td>
<td>19,732,967</td>
<td>18,781,467</td>
<td>951,500</td>
<td>5%</td>
<td>16.9</td>
</tr>
<tr>
<td>Ussuriysh</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10-15</td>
</tr>
<tr>
<td>Kamyshein</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5.2</td>
</tr>
<tr>
<td>Akhtubinsk</td>
<td>1,142,670</td>
<td>1,191,473</td>
<td>-48,803</td>
<td>-4% (operating profits)</td>
<td>Municipal operator: 18.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Private operators: 10</td>
</tr>
<tr>
<td>Znamensk</td>
<td>405,407</td>
<td>209,797</td>
<td>195,610</td>
<td>93%</td>
<td>10.4</td>
</tr>
<tr>
<td>Kamyzyak</td>
<td>5-6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Negative values of operating deficits mean that bus operators generated operating profits.
The concern of the cities with their public transport fleet usually concentrated on the age and condition of the fleets of the municipal enterprises, though not all gave detailed information. Tyumen quoted the average age of its large bus fleet as 27 years, while Veliky Novgorod estimated the average age of its trolleybus fleet as 20 years. In contrast, however, the average age of the private large bus fleets was considerably lower, and that of the minibus and shuttle taxi fleets (which have a shorter physical life) was generally in the range from 3 to 5 years. Tender conditions are being used in some cases (e.g., Tyumen) to reduce the average age of the private sector fleet.

**Air quality.** Air pollution in Russian cities is typically stated either in terms of aggregate weight of pollutants emitted or in terms of an air pollution index (API). API is an index characterizing the input of separate pollutants (suspended matter, sulfur dioxide, carbon monoxide, nitrogen dioxide, nitrogen oxide, phenol, ammonium, formaldehyde, benz(a)pyrene) to overall atmospheric pollution over a given period for the given area or measurement point. The level of air pollution is considered to be: Extremely high if $\text{API} \geq 14$, High if $13 > \text{API} > 7$, Moderate if $6 > \text{API} > 5$, and Low if $\text{API} < 5$.

In most surveyed cities, road traffic is estimated to be the main source of air pollution accounting for over 50% of the total emissions. However, source apportionment is not usually undertaken scientifically and the transport contribution must be regarded as a general impression rather than a well demonstrated fact. While the overall air quality, appears to be improving moderately in some of the larger cities, and associated with improved vehicle fleet standards, parallel changes in industrial heating may also be playing a large part in the improvement. Table A.2.5 summarizes the self-assessment of the cities in the sample.
### Table A.2.5. Reported assessment of air quality

<table>
<thead>
<tr>
<th>City</th>
<th>Self-Assessment of Air Pollution in the City attributed to Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Yekaterinburg</strong></td>
<td>The emission of pollutants into the atmosphere is 315,000 tons per year including 252,600 tons p.a. from moving sources.</td>
</tr>
<tr>
<td><strong>Omsk</strong></td>
<td>In 2010 the level of air pollution was 11, which is a high level. The main pollutants are formaldehyde and benzo(a)pyrene.</td>
</tr>
<tr>
<td><strong>Krasnodar</strong></td>
<td>Transport is the main source of pollution (90%). Exceeding of maximum permissible concentration by 0.3% in peak-hours. Level of NO2 is close to maximum permissible concentration (MPC).</td>
</tr>
<tr>
<td><strong>Tyumen</strong></td>
<td>The data on air pollution monitoring in Tyumen show that in 2010 atmospheric air quality somewhat improved: the air pollution index was 12, or 14% below the 2009 level and 40% below the maximum over the past five years. Motor transport is the main contributor to air pollution. In 2010 vehicle emissions amounted to 82,245 tons, with the principal pollutants being carbon monoxide, formaldehyde and suspended solids. Overall, over the years the number of atmospheric air samples exceeding the maximum permissible concentrations in Tyumen decreased from 3.6% in 2008 to 0.98% in 2010. The air pollution levels on highways were 7.4% in 2008 and 1.4% in 2010, and in industrial zones 1.6% and 0.45%, respectively. The more efficient measures of reducing the impact on atmospheric air is the operation of motor transport conforming to the EURO-3 and EURO-4 emission standards and the installation of dust and gas trapping devices at industrial facilities.</td>
</tr>
<tr>
<td><strong>Tomsk</strong></td>
<td>The amount of air pollutants in 2010 was 123,000 tons, 6.9% up from 2009, including 86,800 tons (70%) emitted by transport (5% up from 2009)</td>
</tr>
<tr>
<td><strong>Kemerovo</strong></td>
<td>According to the Office of Natural Supervision of the Kemerovo City, the level of emissions amounted to 55.35 tons. The set maximum permissible level was 51.44 tons, thus the emissions exceeded the maximum permissible level on 7%. The emissions increased by 2.31 tons as compared to the previous year. The contribution of transport to total emissions amounted to 55.57%, including: carbon oxide – 87.7%; NO – 43.7%; volatile organic compounds – 89.4%.</td>
</tr>
<tr>
<td><strong>Lipetsk</strong></td>
<td>Air pollution index is 7.5 (standard is 4 – 7). Lipetsk is one of the five most polluted cities in Russia. In the past years the air pollution caused by growing number of vehicles become a pressing issue, the share of air pollution by vehicles is 28%.</td>
</tr>
<tr>
<td><strong>Cheboksary</strong></td>
<td>The trend over the period of 2006 – 2010. There is a tendency for formaldehyde’s level to grow, while level of sulfur dioxide, carbon monoxide, nitrogen oxide, and phenol decreased. The level of suspended solids, soluble sulfates, and nitrogen dioxide remains stable. Comprehensive indicator of air pollution (API – air pollution index) calculated based on five basic contaminants was 11.0 in 2010. The basic contaminants include the following: formaldehyde API – 6.98, benzo(a)pyrene API – 2.41 suspended solids API – 0.98, nitrogen dioxide API – 0.64, carbon monoxide API – 0.42.</td>
</tr>
<tr>
<td><strong>Ulan-Ude</strong></td>
<td>Total emissions (from stationary sources and vehicles) in 2010 amounted to 54,315 kilotons, including: solids – 14,564 kilotons, sulfur dioxide – 7,736 kilotons, carbon monoxide – 23,438 kilotons, oxides of nitrogen – 5,415 kilotons, VOC – 2,834 kilotons. The contribution of transport to total emissions amounted to 40.88%, including: carbon monoxide – 32.36%, nitrogen oxide – 4.43%, VOC – 4.03%. Emissions from vehicles in 2010 decreased by 24,478 t as compared to 2009, but this was caused by changes in methodology for estimating emissions from mobile sources (road and rail transport). Level of air pollution (LAP) decreased over the past five years (LAP was 13.8 in 2006, 14.6 in 2007, 14.6 in 2008, and 13.6 in 2009) and remained at high level (12) in 2010. Indicators taken into account: suspended materials, sulfur dioxide, carbon monoxide, nitrogen dioxide, nitric oxide, phenol, formaldehyde, benzopyrene, metals (chromium, lead, manganese, nickel, zinc, copper, iron, cadmium, and magnesium).</td>
</tr>
<tr>
<td><strong>Velikiy Novgorod</strong></td>
<td>Gross atmospheric emissions 2010 total 44,632 kilotons, including: 11,471 kilotons from stationary sources, 33,161 kilotons from vehicular transport (74%). Atmospheric pollution index (API) is in decreasing trend, except an increase in 2009: 6.8 (2007), 5.0 (2008), 5.5 (2009), and 4.4 (2010).</td>
</tr>
</tbody>
</table>
ANNEX 3: INTERNATIONAL EXAMPLES OF URBAN TRANSPORT SUPPORT AND ADVISORY SERVICES

The United States: The Federal Transit Administration (FTA)

In 1968, the Urban Mass Transit Administration (UMTA) was set up to manage the transit programs of the US Department of Transportation. The UMTA was renamed as the Federal Transit Administration (FTA) in 1991 and started to manage a larger transit program than before.

**Roles.** The FTA undertakes the following roles:

- Manages a transit program under which the Federal Government provides financial support to cities for investments in public transport;
- Supports capacity building by organizing training activities through the National Transit Institute,
- Supports research and publication activities; and
- Manages a national Transit Database.

**Grant Program.** A major way in which the FTA supports public transportation is by issuing grants to eligible recipients for planning, vehicle purchases, facility construction, operations, and other purposes. Such systems typically include buses, subways, light rail, commuter rail, streetcars, monorail, passenger ferry boats, inclined railways, and people movers.

The FTA currently administers this financial assistance program according to authorization provided under the Federal Law—Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—signed in August 2005. SAFETEA-LU authorizes specific dollar amounts for each program. Each year, the Congress provides an annual appropriation which funds the programs specified in SAFETEA-LU. Upon receiving this appropriation, the FTA apportions and allocates these funds according to formulas and earmarks.

Generally, the FTA funds are available to designated recipients, which must be public bodies (i.e. states, cities, towns, regional governments, transit authorities, etc.) with the legal authority to receive and dispense federal funds. The recipients of these grants are responsible for managing their projects in accordance with federal requirements. The FTA conducts oversight reviews to ensure that grantees adhere to grant administration requirements through a comprehensive oversight program. The FTA's master agreement, which grantees and the FTA sign, specifies these requirements. The FTA determines compliance through self-certification and/or site visits.

**Institutional Setup and Organization Structure.** The FTA is one of 11 operating administrations within the U.S. Department of Transportation with over 500 employees located in Washington, DC and 10 regional offices across the nation. It employs approximately 500 staff in 10 program offices, headquartered in Washington, DC, and in field offices in 10 regions.

**The functions of the nine offices are as follows:**

**Office of the Administrator:** The Office of the Administrator is responsible for communicating the agency’s key initiatives on transit programs and disseminating policy guidance to transit stakeholders and grantees. The Administrator also ensures that grantees follow federal mandates along with statutory and administrative requirements. The Administrator is a Presidential appointee confirmed by Congress. The Administrator also serves as the federal government’s chief advocate and supporter of public transit nationwide.

**Office of Administration:** The Office of Administration develops and administers comprehensive programs to meet FTA’s administrative and management support requirements in the following areas: organization and management planning, information resources management, human resources, contracting and procurement, and administrative services.
Office of Budget and Policy: The Office of Budget and Policy is responsible for policy development, strategic and program planning, program evaluation, budgeting, and accounting. Specifically, the office implements and manages the overall policy process within FTA; provides policy direction on legislative proposals; prepares and coordinates statutory reports to Congress; manages the development and implementation of the strategic plan and program plan; conducts program evaluations; develops and justifies FTA budgets to the Office of the Secretary of Transportation, Office of Management and Budget, and Congress; ensures that funds are expended in accordance with Administration and congressional intent; performs accounting for all FTA funds; and provides a full range of accounting services for the Office of the Secretary and other customers.

Office of Communications and Congressional Affairs: FTA’s Office of Communications and Congressional Affairs is the agency’s lead office for media relations, public affairs, and Congressional relations, providing quick response support to the agency, the public, and Members of Congress on a daily basis. The office distributes information about FTA programs and policies to the public, the transit industry, and other interested parties through a variety of media. This office also coordinates the Administrator’s public appearances and is responsible for managing correspondence and other information directed to and issued by the Administrator and Deputy Administrator.
**Office of Chief Counsel:** The Office of Chief Counsel provides legal advice and support to the Administrator and FTA management and coordinates with and supports the Department of Transportation General Counsel on FTA legal matters. This office also is responsible for reviewing development and management of FTA-sponsored projects, representing the Administration before civil courts and administrative agencies, and drafting and reviewing legislation and regulations to implement the Administration’s programs.

**Office of Civil Rights:** The Office of Civil Rights ensures full implementation of civil rights and equal opportunity initiatives by all recipients of FTA assistance, and also ensures nondiscrimination in the receipt of FTA benefits, employment, and business opportunities. The office monitors the implementation of and compliance with the American with Disabilities Act of 1990 by investigating complaints and conducting compliance reviews.

**Office of Planning & Environment:** The mission of the Office of Planning and Environment is to support the development of information that local, state, and federal officials use to make transportation investment decisions. This entails working with our partners in the Federal Highway Administration (FHWA) to administer a national planning program that provides funding, guidance, technical support and oversight to state and local transportation agencies. The 10 region offices of FTA and the 52 division offices of FHWA help to convey the program to the states, local governments, and other transportation agencies. The Office also provides guidance and assistance to grantees considering projects that may seek New and Small Starts funding, as well as the ratings and evaluations of those projects for project advancement or FTA funding decisions. Finally the Office ensures that federal environmental requirements are met through oversight and development of environmental policies, guidance and regulations.

**Office of Program Management:** The Office of Program Management administers a national program of capital and operating assistance by managing financial and technical resources and by directing program implementation through the Regional Offices. The office provides procedures and program guidance to assist the field staff in grant program administration. TPM also assists the transit industry and state and local authorities in providing high levels of safety and security for transit passengers and employees through, technical assistance and training, and information dissemination.

**Office of Research, Demonstration and Innovation:** The Office of Research, Demonstration and Innovation, which directs FTA’s research program, provides industry and policy makers with the information and skills to make good business decisions about transit technology, operational, and capital investments. The program uses research results to identify best practices and shares this information with others who can benefit from it. Through its research, FTA shows a range of outcomes that help direct where future transit investments should be made.

FTA’s research program promotes and supports training and professional development, research into matters that affect or significantly interest the transit industry, transit community professional and educational organizations, international technology sharing endeavors, and innovations in transit and transit-related technologies.

**Singapore: The Land Transport Authority (LTA) Academy**

The Land Transport Authority (LTA) of Singapore receives many senior transport officials from other countries seeking ideas and solutions that would address the transport challenges confronting their cities and countries. The LTA Academy (the “Academy” hereafter) was established in September 2006 in order to better meet this need for knowledge and experience sharing and to promote research and exchange of best practices within the international land transport community. The goal of the Academy is to bring together government agencies, organizations, professionals and practitioners from around the world to discuss land transport issues and share practices and experiences.
**Roles.** The Academy takes on three key roles: learning enabler, research, and public education. It synthesizes practical knowledge, provides learning programs on various subjects, through professional programs, seminars, international conferences, and study visits, and offers policy advisory.

**Institutional Setup and Organization Structure.** The Academy is funded by the Land Transport Authority under the Singapore Ministry of Transport, and governed by the Advisory Board that comprises key local and international transport experts. The Academy has three divisions: Learning and Programs, Research and Publications, and Knowledge Management. The Learning and Programs Division runs programs for external participants on a full cost recovery basis. Funds for the programs come from fees paid by participants or visiting delegations.

**Figure A.3.2. Organizational Structure of the Land Transport Authority Academy**

The functions of the three divisions are as follows:

**Learning and Programs:** The Learning and Programs Division develops and organizes a range of professional programs targeted mainly at overseas government officials and professionals. These include learning programs, study visits, professional attachments, international conferences and seminars covering all aspects and modes of land transport, from policy and planning, to engineering, operation and regulation. Trainers of the Academy’s programs are drawn from LTA’s in-house experts and other leading professionals in the field of land transport.

The Academy is collaborating with World Bank to develop and organize a 7-day International Urban Transport Leaders Program in January 2012 which is aimed at developing leadership capabilities in urban mobility planning and management. The program will be conducted and delivered by international transport experts from World Bank and the Academy, who will make use of case studies, group exercises and site visits to enhance the learning experience. As a sequel to the program, a mentoring program will also be available to participants interested to work on specific projects in their cities.

The Division also organizes the World Urban Transport Leaders Summit (WUTLS), a flagship conference, since 2008. In June/July 2010, the Academy organized the 2nd World Urban Transport Leaders Summit which was co-located with the World Cities Summit and Singapore International Water Week. The summits have attracted a number of policy makers and leading professionals in transport related fields from more than 30 countries. The next summit will be held in 2013.

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55 To date, the Academy has designed, conducted and hosted more than 400 professional programs for over 12,000 senior officials and professionals from over 100 countries. In addition, the Academy has completed 4 policy advisory and review programs for Malta, Colombo (Sri Lanka), Abu Dhabi and Malaysia.
The Academy and SIM University (UniSIM), a local university, jointly developed a Master of Science in Urban Transport Management program. The Master of Science in Urban Transport Management program provides a post-graduate training in urban transport that covers the entire spectrum of policy, planning and management, including transport economics and infrastructure financing.

Research and Publications: The Research and Publications Division collaborates with universities, research institutes, professional organizations and industry players to conduct research and technical trials on innovative policies, technological applications and sustainable practices. It also focuses on policy analysis, development and management of database, and regularly publishes research findings. The Division conducts travel surveys and behavioral studies in order to better understand system performance and travel behaviors. International comparative studies on major functional areas (e.g. public transport operations) and emerging trends (e.g. livable streets, energy and environmental policies, non-motorized transport, and reduction in car trips and travel demand) are conducted and regularly reported. The Division produces regular reports on transport statistics, economic and financial analyses, behavioral studies, and urban transport benchmarking. Besides research, the Academy publishes the biannual publication, JOURNEYS, a practitioners’ journal covering urban transport trends, policies, strategies, technologies and challenges around the world.

Knowledge Management: The Knowledge Management Division is responsible for documenting and synthesizing institutional knowledge gained from the various programs described above. It also plays a role of internal training and knowledge sharing. Under the Division, the Land Transport Gallery was established in 2008 to reach out to general public through public education programs and gallery tours.

France: INRETS/IFSTTAR and CERTU

The French model for undertaking the functions envisaged for the Russian National Urban Transport Advisory Unit is that of centralized direct government funded research and advice facilities. Urban transport issues are dealt with in two such establishment – IFSTTAR (formerly INRETS), which deals with transport more generally, and CERTU, which is primarily concerned with urban issues and links transport with more general urban development.

INRETS/IFSTTAR. The French National Institute for Transport and Safety Research (INRETS) was created in 1985 as a state-financed scientific and technological body (Établissement Public à caractère Scientifique et Technologique) under the administrative supervision both of the Ministry in charge of Research and the Ministry in charge of Transport. INRETS has been mainly involved with surface transportation systems (freight and passengers). Its mission is to organize, execute and assess technological research and development in order to improve traffic and transport, to carry out evaluative and advisory studies within these domains, to promote the results of research, to contribute to the dissemination of scientific knowledge and to participate to training in the research field both in France and abroad. Among the major focus subjects of INRETS work are road safety (research on accidents, prevention and road user protection), transport networks and services (Improving traffic management and intermodal complementary), driving aids (information, assistance, automation) and transport and environmental protection (promoting sustainable mobility and limiting the environmental impact of transport). It has a total staff is about 500 as well as 150 PhD students. In January 2011 it was merged with the French Central Laboratory of Roads and Bridges (LCPC) to form the French institute of science and technology for transport, development and networks (IFSTTAR).

CERTU. The Centre for the Study of Urban Planning, Transport and Public Facilities (Certu) was created by French decree no. 94-134 of 9 February 1994. It is responsible for carrying out studies in the fields of urban networks, transport, urban planning and public facilities on behalf of the French State or for the benefit of local authorities, public bodies, companies entrusted with public-service commissions or the relevant professions. Through its activities relating to statistical work, surveys, studies, expert evaluations, experiments, technological innovation, software production, the publication of technical and methodological works, training and awareness-raising, the Centre shall contribute to the advancement and dissemination of knowledge and skills. It is also charged with participating in the development
of experience-sharing exchanges and the promotion of French techniques abroad. Within its scope of activity, it contributes to the drafting of standards and technical regulations, as well as the implementation of other actions of the State. Much of Certu’s work is carried out in partnership with local authorities, either directly or through associations such as the French Mayors’ Association (AMF), the French Federation of Mayors of Medium-Sized Towns (FMVM), the French National Centre for Local Government (CNFPT), the Association of French Passenger Transport Authorities (Gart) and the French Public Transport Union (UTP).

**The United Kingdom: Direct Ministry procurement**

The British model for undertaking the functions envisaged for the Russian National Urban Transport Advisory Unit has shifted from that of a centralised government funded research establishment to that of an expert customer procuring research and advisory services from a market consisting of the former government research establishment TRL, private consultants and university research departments.

TRL (Transport Research Laboratory) was originally established in 1933 by the UK Government as the Road Research Laboratory (RRL). TRL was privatized in 1996 and is now commercially independent. It has a small element of program funding from government but mainly operates as a private consultant competing with other consultants and university research units for government research and advisory contracts. To maintain its impartiality, TRL is owned by the Transport Research Foundation (TRF), a non-profit distributing foundation overseen by 80 sector members from the transport industry. Profits from TRL are invested in its own research programmes selected by the TRF to enhance knowledge in critical areas such as safety, environmental impact and sustainable development. Key areas of work include road, network and vehicle safety, traffic management, planning and control, investigations and risk management, transport infrastructure, environmental assessment including work on climate change, noise and air pollution.

After the privatization of TRL the Department for Transport assumed the role of procurers of research. Officials of the ministry – especially the economists – saw themselves as intelligent customers and, usually after discussion and agreement between analyst colleagues within the department (and sometimes with other users of research, such as the Highway Agency modelers or Transport Scotland), would draw up a specification, agree it with procurement and commission a project. There would often be some informal discussion with one or two potential bidders to ensure that the scale and scope of the proposal was reasonable. The DfT Project Officer was responsible for liaison both with the consultant leading the research and with colleagues within DfT. Despite the relatively small amount of research now being commissioned, the Department has formalized the management of the commissioned research, with clear roles allocated to the Project Officer, the internal management group etc so as to provide a better audit trail.

Some projects—usually smaller ones—would go through “call-off” contracts with a coordinating body which acts as an intermediary between the Ministry and the consulting or academic world, and is held responsible for ensuring that appropriate consultants are engaged. Other, usually larger contracts went out to competitive tender, usually to 3 or 4 of the dozen or so firms on one of a number of DfT Panels (each Panel focused on a broad supply area - professional services, etc). The firms which had bid to be on these DfT Panels had each agreed to certain principles and a whole host of contractual conditions, all aimed at reducing tendering costs. A further variant on this model was the awarding of a framework contract - effectively a call-off contract - to a single firm, which then used the judgment of the managers of that firm to decide which other searchers/consultants to bring in. The procurement process at DfT has to cover a very wide range of contracts, of which academic research is only a small part.

In general, the DfT commissions research relevant to the needs of Local Authorities, covering urban transport – for example on fare elasticity to be used in the re-imbursement of concessionary fares, the likely take up of smarter travel plans etc. But some of the conurbations have commissioned their own research, most of which is aimed at strengthening the regional dimension of the case for infrastructure.
South Korea: The Korea Transport Institute

Establishment. The Korea Transport Institute (KOTI) was set up in 1985 as a fully government supported research institution in transport sector. The KOTI was initially affiliated with the Ministry of Land, Transport and Maritime Affairs; and then in 1999 its supervisory body has changed to the National Research Council for Economics, Humanities and Social Sciences under the Prime Minister’s office. The National Research Council oversees 22 other national research institutions in various fields. This change aimed to reduce direct interference of the line ministries on the day-to-day work of the institutions and to increase the independence of these institutions in determining their research programs.

Functions and Roles. The main functions of the KOTI include research, contribution to policy-making, database development, and knowledge-sharing. The KOTI is responsible for carrying out nationally important research in the areas of transport and logistics, including urban transport, and for supporting the government in making transport sector policies. It develops a medium-term national transport strategy on a regular basis, based on which sector policies are developed. It is also the home of a National Transport Database Center, where all transport and traffic data are collected, compiled, analyzed, and shared with other institutions and the public. The KOTI plays a facilitator role in research and development (R&D), assessing new technologies, identifying qualified private sector developers and supporting them by channeling the government R&D budget. It also manages a knowledge sharing program, both domestically and internationally, organizing seminars and workshops.

Funding. The Government contributes about 40% of the KOTI’s annual budget, and approves the annual policy research programs to be funded by this budget. The annual policy research programs place emphasis on transport and logistics research that contributes to national policy-making, sector development, economic growth, social cohesion, and environmental sustainability. The KOTI also carries out various research projects commissioned by the national and sub-national governments, with the Ministry of Land, Transport and Maritime Affairs being its largest client. The revenues generated from these projects usually cover the remainder of the operating costs, and often generate excessive earnings. Excessive earnings are used to carry out additional policy research for the next year, which is chosen by the KOTI.

Organization. Total number of staff is determined by the Government: 260 research positions and 38 administrative positions. The institution has 7 departments and 25 centers (see Figure A.3.3.); particularly the centers have small and flexible structure and may be set up and disbanded in response to short-term needs (such as major international sports events preparation, electric car feasibility assessment, establishment of multi-modal economic zones, etc.)

Figure A.3.3. Organizational Structure of the Korea Transport Institute
ANNEX 4: GUIDELINES FOR INTRODUCTION OF COMPETITIVE
TENDERING AND GROSS-COST CONTRACT FRANCHISE FOR
PASSENGER PUBLIC TRANSPORTATION SERVICES, BASED ON THE
LONDON CASE

The legal and regulatory requirements for effective service franchising

A focal recommendation of this paper is that Russian cities should move to a system of comprehensive gross cost route tendering similar to that introduced in London after the London Transport Act of 1984. In the gross cost service franchise all revenue accrues to the franchiser and all costs are incurred by the franchisee. Competition is based on the cost at which bidders offer to supply the required service. The payment for the contract period is determined by the bid price. This form of franchise is consistent with any size of contract package (including a system wide franchise), any fares scheme (because revenue accrues to the franchiser), and with any requirement for modal integration, either of services or fares. It has shown itself capable of generating substantial competition, and reducing operational costs greatly.

London experience has shown that there are a number of elements of the design and management which are critical to the good functioning of the system. The main elements are:

- A good management organization;
- An appropriate structure for the operating industry;
- Network planning;
- Clear allocation of responsibility for infrastructure provision;
- A good revenue system;
- A clear, complete, and trusted procurement system.

Management organization

Creating the institutional basis for franchising. Designing an effective competitive process will require a program of reform of the existing political and operational institutions. This reform will consist of a phased set of actions to create the conditions for effective market operation, including:

- Creating a quasi independent public passenger transport authority or agency (often referred to as a PTA). Where both regulatory authority and an operating company remain in public ownership they should be organized in parallel and not hierarchically;
- Putting the managing agency at arm’s length from local government. While the decision of what general size and structure of networks are wanted is inevitably very political, precise routing details and the decision as to who operates them should generally not be.

The primary functions which the PTA must perform include:

General policy formulation. To develop adapt and express a policy for urban public transport consistent with the general transport strategy of the strategic authority.

Planning. To develop a supply plan for the area and to convert this into a set of units of supply for offer in competitive tendering, based on demand surveys and forecasting techniques. This will include responsibility for detailed network design.

Fares. To define a fares structure consistent with the strategies of the municipality and consistent with the financial capability of the authority which will include arrangements for modal integration of fare schemes and for off-vehicle ticket sales; procurement and maintenance of ticketing equipment where provided by the authority.
**Procurement.** To develop and manage procedures to procure the planned services, including preparation of tender documentation; running tender competitions; handling any negotiated contracts and any rebidding of tenders; and maintaining complete tender documentation. Collusion in bidding must also be made illegal and controlled.

**Enforcement.** This will include the design and implementation of a monitoring system, both through self reporting and through surveys, manual inspection and AVL.

**Financial.** To secure, allocate and disburse the finances required for all the activities of the authority, including management of revenue collection and revenue protection.

**Promotion.** To promote public transport to consumers, in the form of market research and marketing exercises, including the maintenance of public information services, published timetables etc., and to establish and manage relations with the main political stakeholders.

**Infrastructure and equipment.** To procure, manage and maintain any infrastructure to be provided by the authority, including AVL and ticketing equipment, bus shelters, and in some cases, terminals, garages and vehicles.

Three important characteristics stand out as essential institutional requirements for a successful franchising arrangement.

First, there must be an expert franchise design team. There is already a growing body of experience both in road and rail concessions which can be tapped.

Second, there must be a strong contract monitoring and enforcement function. The authority must have clear rights to monitor the terms of franchise or concession contracts, including right to receive specified operational and financial information and to penalize contractors for non-compliance. However, any modification of the terms of concession contracts must be negotiated, not enforced unilaterally.

An effective legal basis is necessary as a basis for the attraction of international capital into national transport markets. If foreign operators are allowed to compete, provision for recognized international arbitration of disputes may be extremely important.

There is a case for separating the functions of monitoring performance (clearly a matter for the procuring agency) and enforcement of contracts (sometimes assigned to a separate legal or quasi legal process). Ultimately, contract enforcement of can be obtained via court procedure or through the decision of an arbitrator. However, where contracts are short and small, and the procuring agency is acting in a continuously pro-active way, the combination of the functions within the procuring agency can work well.

**Operator restructuring**

If it is decided not to privatize an existing publicly owned enterprise, and particularly where this enterprise initially has either a monopoly of services in the city or a preferred position in the allocation of service tasks, it will be necessary to create a “level playing field” for competition. This might take the form of corporatization of the parastatal into a number of separate (preferably legally separate) profit centers or companies and to separate them from any ancillary activities in which a monopoly remains (e.g. terminals). Any legal barriers to establishment of private enterprises in the sector should be removed and positive action taken to foster creation of private operating units capable of participation in competition for route franchises, perhaps by creation of associations of smaller private operators.
If enterprises which remain in public ownership are also involved in some activities which are directly subsidized on negotiated contracts, they may be able to use profit from the negotiated contracts to win tendered contracts unfairly. In London, a procedure for independent auditing of their bids was established, to ensure that public companies did not use cross subsidy to support their activities in the competitive markets. An alternative is to tender a substantial proportion of routes, for which the public company is not allowed to bid, while reserving the remainder for the public company on negotiated contracts. Once the tendering system is established the bid proportion can be increased and the public company allowed to bid. The cost which the company has declared to be necessary to support its negotiated routes can then be used as a “reality benchmark” on its bids for tendered routes.

Network planning

The preparation and publication of a network plan is important both to ensure that resources are used most efficiently to satisfy the passenger demand pattern and to define the context in which a particular service contract is set in order to eliminate uncertainty amongst bidders about the potential profitability of the contract. Without such a plan, private operators may be unwilling to make long term commitments. In cities which have not already developed private commercial services, large potential benefits could be achieved through network restructuring alone. This is because public transport networks were designed in Soviet times according to criteria relating to direct connections and in a ticketing environment that is rapidly disappearing. Moreover, small and medium sized cities tend to have too many modes (e.g. bus, trolley, tram), each with its own infrastructure and administration. Unfortunately, many cities do not have the technical expertise to redesign networks efficiently. And where such skills exist they tend to reside in the traditional public enterprise which has little incentive to redesign. Hence emphasis on network redesign is an important first component of a reform process.

How are individual services defined? The way in which services are defined is usually in terms of the main points which they have to serve. Some element of commercial initiative may be allowed by permitting the bidders to suggest detailed routings between the main points both in order to improve patronage and, possibly, to take advantage of better operating conditions on some roads than other. The main difficulty in administering such a flexible scheme is that operators may wish to make variations of the basic route to pick up passengers who would otherwise be using some alternative service provided by a different franchisee. It is recommended, therefore, that if such flexibility is granted it should be subject to the approval, or at least comment, of other affected operators.

It is important that the design phase includes revenue forecasting and costing models, and that these also take into account the quality levels which will be demanded of operators. If there is no realistic possibility to procure the services within the available budget, then the competition will not work properly and will lose credibility. Hence the managing authority must have a commercial analysis capability.

Scheduled frequency and capacity. It is common for franchises to specify regular intervals, and often clock face departures from terminals (on the hour, quarter, half, etc). It is also common for the franchise to require that precise timings are set for intermediate points on the route. However, there may sometimes be advantages in allowing a little flexibility, in order to allow operators to make better use of their capacity if several routes are being provided.

The total capacity required should be related to the total likely passenger demand both by route and time of day, as well as by the maximum headway which is considered acceptable. The franchising authority should therefore undertake studies of the patterns of demand before deciding what services should be put to tender. This study should be in terms of an origin-destination matrix, or corridor flow study, rather than in terms simply of demand on individual routes. Ideally the capacity required for each route should be determined jointly with the definition of the route structure.

For any given route capacity there is clearly a trade-off to be made between frequency and vehicle size. Given the traditional nature of operations by large buses there may be a tendency to favor larger vehicles and to try to use the franchising arrangements to get back to a more traditional fleet compo-
The advantage of having large vehicles may be to reduce congestion in congested cities. The cost of such a strategy is likely to be that frequencies are lower and average passenger waiting times greater than would be the case with smaller vehicles. For the very highest density routes, particularly in congested town centers, large vehicles may be essential to minimize congestion. For very low density feeder routes, it may be appropriate to define the capacity requirement in terms of a minimum number of seats to be offered and a minimum acceptable frequency required set in such a way that the routes could be competed for by vehicles of different sizes. If all operators are subject to commercial criteria (in particular, so long as the public sector operators are not deficit financed) an incentive will be created to attract vehicles of the most economic size for the route.

**Infrastructure requirements**

The responsibility for infrastructure in London is divided between the authority and the operators. Ownership of bus terminals, roadside infrastructure (stops and shelters) and system information is usually also provided by the authority as a central service. These may often be financed in whole or in part through advertising sponsorship. On-vehicle advertising normal accrues to the operator. On the other hand contracting franchisees must have adequate facilities both for the maintenance of vehicles and for their overnight parking off the street. Care must be exercised in setting such requirements, however, as they can easily become barriers to new entry, especially if possession of the facilities historically provided for the publicly owned operators – and currently available only to them – is set as a condition of bidding.

A similar caveat needs to be entered over operating procedures. In London, operators are responsible for the safety of their vehicles and crews. Some of the traditional Russian procedures - such as daily medical examination of crews and availability of vehicle inspection facilities at garage exits – are considered to be expensive ways of achieving those objectives compared with random independent checking and very heavy penalization of infringements. Operators have very strong incentive not to infringe, while retaining the incentive to find cost efficient ways of enforcing discipline. Many other Western European systems have high vehicle and crew standards without the contracts enforcing any particular procedure for achieving them.

Dispatching is one of the procedures that need to be considered particularly carefully. The tradition in many eastern European countries has been to have dispatch points at the end points of each route to control the flow of vehicles on to the route, often supplemented by automatic vehicle location systems to monitor vehicles on route. London also uses AVL to monitor performance of the contracted operators, requiring all vehicles to be fitted with the necessary equipment. But operators are responsible for operating to schedule and may have access to the AVL system if they consider it desirable.

**Revenue system**

There are several aspects to the revenue system which includes determination of the structure and level of fares, the methods for securing that revenue and the procedures of disbursing it to suppliers

Choice of a fare structure thus involves trading off the revenue generation possibilities of a finely graduated fare scale with the collection cost and customer convenience characteristics of the flat fare scale. A compromise which is therefore suggested for larger cities is a ring zone system, in which the size of the fare paid is determined by the difference in the ring number of the origin and destination. This is particularly advantageous where trips are predominantly from the outskirts to the central city.

In large cities like London, with several modes of public transport within the system, it may be beneficial to users, and a source of traffic generation, if through tickets can be purchased which can be used in a composite trip on vehicles run by different operators. Gross cost tendering makes this very easy, as there are no revenues to distribute, all services being procured on contracts paid on a vehicle mileage...
basis. The main problem is to ensure that, if any ticket revenue is collected on bus that it is securely recorded and transferred to the managing authority. Various season tickets exist in London, which are administered by the franchising authority, because all revenues accrue to that authority.

In London all suppliers are obliged to carry all categories of reduced fare or fare exempt passengers. As all bus services are procured on a gross cost basis this poses no problems for the operators. The transport authority receives compensation from the social service departments at whatever level of government is responsible. The disadvantage of this approach is that the funding agencies (Transport, Health or Social Security departments) are sometimes unwilling to see general money transfers being made to the operators without being able to ensure that it was the services of most interest to their clientele which were receiving the benefit of the subsidy. For this reason it is common for use by the selected groups to require some measurement, but critically much smaller surveys than if operator or even route specific compensation was required. This is how London’s compensation to Transport for London from the London Boroughs works.

An efficient way of securing revenues must be devised, if the contracts involve collection of any fares by the operator to pass on to the franchising authority. This may involve the inclusion in the contract of the obligation to use a selected method of secure revenue collection and recording. In the case of London, for example, the contracts require operators to be equipped with a specified type of ticketing equipment, provided by the authority.

It should be noted that, although the gross cost tendering system involves the authority making payments to operators, the authority is receiving the revenues. Thus, so long as the revenue collection and transfer system is secure, there is no reason why the net-cost to the franchising authority should be any greater in the case of a gross cost than a net-cost contract system. There are some variants of gross cost contracts aimed at giving incentives to increasing patronage.

Where the contracts involve payments by the franchising authority for the services performed (i.e. in the case of gross cost contracts) the contract must define precisely the amount, timing and conditions of the payments to be made. This is contained in the framework contract for London. Where contracts are more than one year they will need to contain provisions for adjustment of payments either due to inflation or due to policy changes by the franchising authority during the period of the franchise. The normal approach to this is to specify an inflation adjustment mechanism within the contract documents. The adjustments will usually be made in conformity with changes in either the retail price index (which is simple) or in a pre-specified index of input costs (fuel, tires, general wages levels, etc). It is important that this index should be transparent, and referred to explicitly in the contracts, in order to minimize payment disputes.

The policy issues with regard to compensation for the carriage of reduced or free fare passengers, or those traveling on multi-operator period tickets create no difficulties for contract administration in the case of gross cost contracts. All of the revenues from season tickets, compensation by line ministries for reduced fare passengers, system subsidy from the local political authority, etc. go directly to the franchising authority which has to ensure that in total its receipts are sufficient to cover its contracted costs plus administration costs.

**Penalty systems.** Penalty payments may be specified for non-performance by the operator. Again these must be very explicitly stated, and the terms for their application specified. For example, penalties may be applied when the operator fails to provide all the service contracted. In this case it is common to allow a small margin (perhaps 1-2%) of mileage shortfall to be penalized simply by a proportionate reduction in the agreed contract payment, but for greater deficiencies the penalty becomes a multiple of the mileage lost. Unpunctuality is also subject to penalty in some franchise systems. However, particularly in large cities with heavy road congestion, this may not be the fault of the operator. In those circumstances it will be necessary to make allowances for circumstances external to the operator and the enforcement of a penalty system is much more difficult.
In London, a somewhat flexible approach to penalties is applied. Mileage lost due to the operator’s failure (no staff or vehicle) is always penalized. Mileage lost due to traffic congestion will not be. There is a formal warning system to reflect the fact that it may be difficult to apportion blame for poor reliability (the key focus of warnings) between the operator and traffic authority. The performance of a bidder on previous contracts may be a consideration in the selection of contractors for new contracts.

Service changes. Contracts may be for the supply of certain quantity of bus miles, with the allocation of the vehicles to routes at the disposition of the franchising authority. More usually they will be for the provision of specific services, expressed in terms of routes, frequencies and total vehicle mileages. In either case the authority may wish to have the freedom to increase its purchase without entering into a new tendering process. To facilitate this, the contract may specify a range of variation of the number of bus miles or the routing (for instance, a slight change of a route to allow an adaptation to a changing demand pattern) purchased and the associated variation in contract payment. For large variations new contracts will probably be necessary.

The Procurement system

Framework contracts v specific contracts. Every service in London must be covered by, and provided under, a valid current franchise contract. That contractual basis should specify, as fully as possible:

- The general requirements of suppliers of service;
- The general obligations on the client;
- The specific service to be provided under the contract;
- The detailed terms of remuneration for performance of the service.

Where there are many small packages, and suppliers bid repeatedly for contracts it may be convenient to separate out, in a “framework contract” the general conditions which apply to all services (a. and b. above) into a framework contract which all bidders have to sign and which subsequently covers all specific service bids and contracts. The service contracts would then only cover the details of the specific services contracted. Templates of the London contracts are available.

Contract duration and termination. The duration of the contract and what happens at its end needs to be clearly specified. For a franchise contract to be shorter than the economic life of the assets, the assets must be divisible and versatile and have viable alternate uses. If a government regularly awards contracts for bus franchises and staggers its awards to allow each company to bid for new contracts on a regular basis, companies know that once one agreement ends, they may bid for others and can therefore re-employ the asset. London bus contracts last a minimum of five years (the EU suggested minimum) with provision for automatic continuation for a further two years. It is also possible to renew an agreement, since re-tendering itself incurs costs.

The authority must have the legal right to terminate contracts for non-performance. To facilitate this both the invitations to tender and the contract documents in London set out the conditions under which termination would be permitted. This may be in terms of persistent failure to supply, infringement of technical standards or convictions for on the road behavior. Extension of contracts, without re-tendering, has also been provided for in a number of countries. In this way the costs of re-tendering are avoided and good franchisees rewarded. But without re-contracting competitive pressure may be lost. One way of reconciling these contrary effects may be to allow contracts to be continued without re-contracting on the basis of satisfactory performance in the initial contract plus some reduction in real terms in the contract price. In London this is set at 5%. The main requirement of such an arrangement is that the required reduction is set at such a level that there is effective pressure on operators to improve efficiency during any initial contract period.

Size of packages. The package size may vary between the right to operate a whole system, for geographical sections of a system, for routes, or for individual vehicles. The critical criteria in designing packages are to invite competition and deter collusion. This usually results in the most common minimum size of package being the individual route, as in London.
If the intention is to attract bids from large operators from outside the city, rather than the existing fragmented private sector it may be worth considering the assembly of some packages as large as a depot and 200 buses. Where this is done it is important to ensure that the package does not coincide with the domain of a current operator, as this may simply be a deterrent to anyone except the incumbent bidding. In London, it is permissible to put in consolidated bids for a number of routes in addition to the individual route bids, enabling operators to spread their infrastructure costs and to take advantage of economies of scope in the use of their vehicles across different routes. While this complicates the selection process slightly it has proved to be quite manageable.

The size of the package, in combination with the duration of contracts can affect the number of bidders, and hence the effectiveness of competition in two ways:

- Smaller packages will tend to attract smaller bidders, and particularly new entrants, which lowers contract prices;
- Smaller packages allow a more regular flow of contracts to be tendered which will reduce the risks for companies and encourage them to own the necessary assets to compete.

**Treatment of operational assets.** Franchises may be shorter than the economic life of the asset if government makes the investment and provides the asset to the franchisee on a lease basis. This may be a good arrangement in respect of fare collection and vehicle location equipment but is less desirable for buses themselves, as this reduces the scope of responsibility (and potential for efficient management) for the franchisee. One of the main dangers of competitive franchising regimes is that the pressure to keep costs low leads to a failure to adequately maintain or replace vehicles. There is some evidence to suggest that some part of the cost reductions in the early stages of the British regulatory reform came from deferral of replacement expenditures, both to serve the deregulated market and to keep bid prices low in the tendered section of the market. This can be countered either by enforcing tight controls of vehicle quality independent of age, or by imposing a maximum age either on individual vehicles or on the operators fleet average.

**Labor issues.** No conditions were included in the original London bus contracts with respect to employment conditions. European regulations now require that any public service provision transferred between providers (public or private) must provide protection of employment. This helps to avoid disruptions in the labor market where there are large packages at stake, but may not affect bidders too much where there are national labor agreements forcing uniformity of conditions between employers. But it reduces the flexibility of bidders and is less appropriate in markets where the packages are small and the labor market freer.

**Statutory and contractual quality requirements.** Gross cost contracts give little incentive to improve quality as the revenue of the operator depends solely on satisfying the terms of the contract so contracts typically specify levels of punctuality, vehicle age and fitness, which can be monitored and enforced. Some quality requirements, such as conditions of roadworthiness of vehicles, are a legal obligation, quite independent of what sort of economic regulation applies to the sector. It is important that these are properly maintained and enforced. In London, as in most countries this is done by a nationally controlled vehicle inspectorate, quite independent of the local economic regulation of the sector, while on-the-road behavior is the responsibility of the police. Arrangements should be put in place for the agency responsible for vehicle and for on-the-road behavior to notify the franchising agency of infringements by franchised operators.

Vehicle age may be considered important for comfort reasons. London has been giving preference in recent rounds of bidding to operators offering new vehicles. However, the emphasis on low vehicle age has come at the cost of increasing subsidy requirement. For cities with low financial capacity it is probably more sensible simply to concentrate on getting enough good roadworthy vehicles in service before moving on to concentrate improving the fleet.
Vehicle emissions mainly concern air pollutant emissions and noise. As with vehicle age it is possible to obtain improved vehicles by setting minimum specifications in tenders, for example a minimum of EURO 2 or EURO 3 engines. But this usually also comes at a cost, and for smaller cities with low levels of environmental pollution it is wise to estimate the likely effect of conditions on contract costs and then to make a judgment as to whether the cost of the environmental gain is excessive or not.

Other aspects of service quality which may be of interest to the procuring authority may include cleanliness, punctuality, vehicle comfort, etc. For some characteristics, minimum levels can be specified in terms of minimum acceptable physical requirements (e.g. frequency of washing, types of seat upholstery, etc.). For others, such as crew friendliness and helpfulness, passenger survey information would be necessary.
ANNEX 5: GUIDELINES FOR ESTABLISHMENT OF TRAFFIC MANAGEMENT CENTERS

Russian cities are experiencing very rapid increases in motorization which are unprecedented in national history. Many cities have experienced a doubling of their motor vehicle fleet in ten years or less. Based on international experience this rapid increase in motorization is likely to continue into at least the near term future until vehicle ownership more closely approximates those in western Europe and other developed countries. Even then vehicle ownership is likely to further increase albeit at a slower pace.

This extremely fast rate of motorization has not been met with adequate transport improvements to meet the expanding motor vehicle travel demand. Traffic management measures such as traffic signal systems, which are comparatively low cost and highly efficient investments, are typically under invested in many cities. On-street paid parking, an effective traffic and travel demand management measure, is effectively non-existent in Russian cities. Municipal institutions in most cities are not adequately organized nor staffed to address these challenges. As a consequence of these deficiencies, Russian cities are experiencing with differing degrees of severity (a) traffic congestion and (b) traffic safety issues.

Required functions and institutional arrangement for a Traffic Management Unit

Possibly the highest and most cost effective priority for addressing traffic management, parking, and safety issues in urban areas would be the establishment of traffic management units (TMUs) with appropriately designated functions and staffing. International experience has demonstrated that these units, which consolidate a range of traffic functions under one organizational structure, have been very effective. The typical range of functions and responsibilities of such a unit are listed in Table A.5.1.

Table A.5.1. Functions and Responsibilities of a Municipal Traffic Management Unit

<table>
<thead>
<tr>
<th>Functions</th>
<th>Responsibilities</th>
<th>Outsourcing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Management Policy</td>
<td>Formulate and Implement city wide “Traffic Management Policy” to comply with objectives defined by the “city council” which would include, at least such areas as determination of (i) a functional road hierarchy; (ii) the appropriate balance between transport system users (private transport/public transport/NMT/pedestrians; (iv) priority programs for action and, (iv) a “5 year” investment plan”.</td>
<td>Not recommended</td>
</tr>
<tr>
<td>Traffic Research</td>
<td>Assemble/survey, monitor, analyze and evaluate all traffic and accident data to enable trends to be identified, problems quantified and traffic management plans and improvements to be prepared.</td>
<td>Possible</td>
</tr>
<tr>
<td>Traffic Management Plans and Improvements</td>
<td>Plan, design, implement, monitor, evaluate, fine-tune and continuously up-date traffic schemes and policies to realize the agreed Traffic Management Policy. The program would cover all motorized road based modes (cars, public transport, trucks, etc.) and all non-motorized modes (pedestrians, cycles). Plans and improvements would range from simple junction improvements or marking and signing programs through to far reaching city wide strategies such as extensive bus priority or pricing. Safety considerations are part of any scheme planning and design process but specific safety programs and accident counter measures would be a responsibility.</td>
<td>Possible and often practiced</td>
</tr>
</tbody>
</table>
**Traffic Control Devices**

Plan, design, install, operate, and maintain all traffic control devices including (i) traffic signal systems including computer controlled systems; (ii) road markings; (iii) road signs and, (iv) enforcement devices (cameras etc.)

- Recommended and commonly practiced

**Traffic Regulations**

Formulate traffic regulations to realize the proposed Traffic Management Plans and Improvements, for enactment by city government and for enforcement by the traffic police.

- Not possible in most cases

**Parking Management**

Prepare off and on street parking policies and programs including approval for the location of and access to parking areas proposed by others. Parking enforcement and administration (for example, where paid parking applies) would be carried out by a separate parking authority or equivalent.

- Recommended and commonly practiced

**Approvals and Coordination**

Evaluate and advise city government on all schemes (e.g., new roads) and developments (developed both by public and private sector agencies and including major new land or building developments) which have a significant traffic impact to ensure that they are consistent with agreed traffic policy. In effect carry out traffic impact studies for all major development proposals.

- Not possible in most cases

**Consultation**

Consultation with the public and stakeholders on traffic policy and on the impacts of specific schemes and measures.

- Not possible in most cases

**Budget**

Preparation of an annual budget for submission to city government for (i) implementation of Traffic Plans and Improvement Schemes; (ii) traffic operations and maintenance of control devices; and, (iii) the continuous work of the traffic management agency itself.

- Not possible in most cases

**Notes:** Not all functions would necessarily be carried out by the “traffic management agency” itself. For example, maintenance of traffic control devices and signals would most commonly be contracted out; in this case, the agency would assume the functional responsibility of supervision. Traffic regulation enforcement is not included as this is regarded as a traffic police function; however, there are cases where some enforcement, such as curbside parking, could be a traffic agency function and a Parking Division would be needed.

Traditionally many if not most of these traffic management functions were handled by the traffic police. More recently these functions have been typically scattered among various city departments in most Russian cities, or are not addressed at all. The main purpose of establishing a traffic management unit will be to consolidate these functions with qualified staff in one place so that the municipality will have the capability of developing and implementing a coherent and effective traffic management program. It therefore will be important for municipalities to take appropriate steps to create a TMU with these consolidated functions if this has not been accomplished to date.

**Outsourcing of Traffic Management Functions.** The traffic management unit with the dedicated authority to address the traffic management functions listed above need not retain all functions in house but could outsource some of them under well conceived contractual arrangements. However, the ultimate policy direction and responsibility for implementing these functions should be retained by the parent TMU. The most commonly outsourced among the above listed functions are (a) traffic control devices, (b) preparation of traffic management plans, and (c) parking. It is very common, for example, for municipal TMUs to contract with a private entity for the maintenance, and in some cases the operation of traffic control devices including traffic signals. This practice may be particularly applicable in the Russian context where some oblast level organizations have provided this service. The preparation of detailed traffic management plans are also commonly contracted out to consultants. While the design of parking policies and programs are best retained within a TMU to ensure consistency with overall traffic management strategies, the actual operation of a parking program is typically outsourced to
a parking authority or equivalent. While these outsourcing practices are common, or even should be encouraged in some cases where the municipal government cannot retain sufficient qualified staff to cover these functions, the TMU should nevertheless have sufficient in-house capability to establish overall policies in these functional areas as well as have the capability of adequately supervising the work of the outsourced activity.

**TMU Organizational Structure and Staffing requirements.** The organizational structure and appropriate staffing of a traffic management unit depends largely on the size of city and the range of functions that will be retained within this unit. At a minimum a well-conceived TMU would have functional units to address (a) traffic research, (b) traffic management planning, (c) traffic control devices, (d) traffic approvals, and (e) parking (see Figure A.5.1). As a general guideline municipalities with over 1 million in population ought to have TMU staffing of at least 20-25 professional staff. This assumes that an equal or greater amount of staff would be employed as contractors handling traffic signal and other traffic control devices. Smaller municipalities, of course, could not be expected to have this number of staff. It is difficult to specify what would be a reasonable minimum number of TMU staff as it is possible that a few highly qualified and motivated staff members could handle multiple functions. However, it appears reasonable to suggest that an initial TMU staff of at least 3-5 professionals would be a minimum number to consider for smaller municipalities wishing to create a traffic management unit with a view that this minimal staffing would be increased over time.

**Staff Qualifications, Training, and Career Development.** The quality of professional staff is important in any organization, and it is particularly important in an organization such as a TMU where analytical and design skills are important. Securing staff with traffic and transportation engineering qualifications will be particularly important. It can be expected that development of TMU staff in municipalities will require improved formal educational training at the university or technical institute level as well as development of on-the-job career development training. This will require a concerted and continuing effort for many years.

As indicated in Section 3.6 of Paper III, it will be important for the Ministry of Transport designated entity to develop appropriate formal training and on-the-job capacity building educational programs. This entity will also be called upon to develop arrangements for formally certifying traffic management specialists as a way to encourage improved professional qualifications of TMU staffs.

**Equipment, Software, and Professional Documents.** A properly equipped traffic management unit should be provided with a minimum level of equipment, traffic management software, and professional documentation in order to be effective. The following is a partial list of recommended items to assist TMUs in undertaking their assigned responsibilities.

**Traffic monitoring equipment.** The TMU should have its disposal portable equipment for monitoring traffic flows.

**Accident record software.** Since it will be important for the TMU to analyze traffic accidents and to devise possible measures to reduce the frequency and severity of these accidents, accident record software that can plot the location, type, and cause of accidents will be an important tool to assist TMUs.

**Strategic transportation models.** The TMU should have access to a strategic transportation model to test alternative transportation policies and major investments most probably in cooperation with the city planning or city architects department.
Tactical traffic assessment models. Beyond strategic transportation planning models, the TMU should have access to a more tactical traffic model that will permit the unit to quickly test the impact of new traffic management investments and new land use developments on traffic conditions in the nearby area.

Professional literature. The TMU should have professional literature covering a range of topics such as (a) urban road design, (b) parking requirements, (c) warrants for traffic signal installation, (d) and road signing and marking standards.

The proposed new National Urban Transport Advisory Facility is expected to provide assistance to participating municipalities in securing this equipment, software, and professional documentation as part of a national program to improve traffic management and passenger transport services in urban areas.

Relationship with other entities. While the creation of a TMU with consolidated authority to address a wide range of traffic management matters is an important step, it should be recognized that this unit will nevertheless need to interact with several other local entities that also have a role in urban transport. These relationships are described below.

Establishment of a traffic management or transportation coordinating committee. While a well-organized TMU should consolidate and retain all the functions as set out in Table A.5.1, it will be important for this entity to have good working relationships with other city units dealing with urban transportation issues. For this reason many if not most cities with TMUs have additionally established a committee to address a range of traffic management or broader transportation issues. The TMU would be the logical choice to chair such a committee if the primary function is to address traffic management, parking, and road safety issues.

Establishing a city transport department. One approach some cities use to address urban transportation matters on a consolidated basis is to establish a city transport department that houses all key entities dealing with urban transport issues in one department. An example of this structure is shown in Figure A.5.2 where the traffic management, public transport, parking, strategic transportation planning and transport infrastructure (mostly roads) is housed in this consolidated department. This is an organizational model that should be seriously considered.

Relationship with the traffic police. The relationship between the TMU and the traffic police is particularly important and one where cooperation could be especially beneficial. While the role of the traffic police is being gradually shifted from the area of traffic management to concentration on traffic enforcement and safety, there remains a strong interface between the police and the TMU in traffic safety. While the police have the responsibility to enforce traffic regulations and to accurately record the location and cause of traffic accidents, it will be important for the TMU to relate these accidents to traffic management measures that might be deployed to reduce the frequency of accidents or their severity. The TMU, at a minimum, should collect and analyze traffic information including accident data (including mapping the location of accidents) and should design traffic management measures based on this information. The unit also could act as a coordinating body for all entities concerned with traffic safety including the traffic police, ambulance and emergency services, and educational establishments (see Figure A.5.2).

Relationship with the city road construction entity. The division of responsibilities between the TMU and the city entity responsible for road construction and maintenance should be carefully determined. While the road unit should clearly be responsible for road construction and maintenance, the TMU should have a role in determining or approving the design of any major road improvements, and particularly that aspect of road improvements that affect traffic management on the roadway including traffic signals and road signing and marking. While the actual installation of road signing and marking could be
handled by the road entity, the design (or at least the final approval) of these installations should be the responsibility of the TMU. All traffic control devices including traffic signals should be the responsibility of the TMU.

**Relationship with the city architect’s or city planning department.** The city architect’s (or city planning) department in most Russian cities has traditionally been responsible for preparing strategic land use and transportation plans. This department also has had a significant role in establishing parking requirements associated with new land developments as well as in determining road layouts associated with new land development. For these reasons cooperation between the TMU and the city planning unit of the city will be particularly important. The TMU should have a significant role in (a) the formulation of the city urban transportation strategy or plan, (b) reviewing the traffic impact of new land developments and recommending remedial traffic measures, (c) establishing parking requirements for new land developments, and (d) the layout of new streets serving new land developments.
Traffic police are currently responsible for all traffic control devices and must approve all traffic management schemes. (*) Suggest Traffic Management Department hires only one person for the Traffic Control Devices Unit until such time as the Department assumes full responsibility from the traffic police. (**) Indicates that most of these functions would need to be contracted out with proposed core staffing.

Transport Department Functions in Traffic Management:
- Traffic Policy;
- Approvals & Coordination;
- Traffic Management Budget;
- Supervises & Directors Yerevantrans in the conduct of traffic management activities.

( * ) Indicates that most of these functions would need to be contracted out with proposed core staffing.
Figure A.5.2. Integrating a Traffic Management Unit within a City Transport Department

Example of Basic proposal for the structure of the Transport and Traffic Department
160 A National Framework for Sustainable Urban Transport Systems
A National Framework for Sustainable Urban Transport Systems

Proposals for Improving Urban Transportation in Russian Cities

World Bank Report No. 73228-RU