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PROJECT PERFORMANCE ASSESSMENT REPORT

RUSSIAN FEDERATION

URBAN TRANSPORT (LOAN 3885-RU)

BRIDGE REHABILITATION (LOAN 3990-RU)

May 24, 2005

Sector, Thematic, and Global Evaluation Group
Operations Evaluation Department

Currency Equivalents (annual averages)

Currency Unit = Russian Ruble (Rb)

1991	US$1.00	Rb 1.70
1992	US$1.00	Rb 4.15
1993	US$1.00	Rb 12.47
1994	US$1.00	Rb 22.04
1995	US$1.00	Rb 6.90
1996	US$1.00	Rb 7.99
1997	US$1.00	Rb 8.04
1998	US$1.00	Rb 29.08
1999	US$1.00	Rb 37.06
2000	US$1.00	Rb 36.69
2001	US$1.00	Rb 37.88
2002	US$1.00	Rb 40.41
2003	US$1.00	Rb 32.50
2004	US$1.00	Rb 28.51

Abbreviations and Acronyms

BMS	Bridge Management System
CAE	Country Assistance Evaluation
CIS	Commonwealth of Independent States
CUPTR	Center for Urban Public Transport Reform
ECMT	European Conference of Ministers of Transport
ERR	Economic Rate of Return
FHD	Federal Highways Department
GORMOST	Moscow City Administration, Bridge Department
HRMP	Highway Rehabilitation and Maintenance Project
ICR	Implementation Completion Report
MoF	Ministry of Finance
MONSTR	Bridge Management System of the FHD
MoT	Ministry of Transport
OED	Operations Evaluation Department
PID	Project Implementation Directorate
PIU	Project Implementation Unit
PPAR	Project Performance Assessment Report
SAR	Staff Appraisal Report
UTCC	Urban Transport Project Coordination Council

Fiscal Year

Government: Jan 1 – Dec 31.

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About this Report

The Operations Evaluation Department assesses the programs and activities of the World Bank for two purposes: first, to ensure the integrity of the Bank's self-evaluation process and to verify that the Bank's work is producing the expected results, and second, to help develop improved directions, policies, and procedures through the dissemination of lessons drawn from experience. As part of this work, OED annually assesses about 25 percent of the Bank's lending operations. In selecting operations for assessment, preference is given to those that are innovative, large, or complex; those that are relevant to upcoming studies or country evaluations; those for which Executive Directors or Bank management have requested assessments; and those that are likely to generate important lessons. The projects, topics, and analytical approaches selected for assessment support larger evaluation studies.

A Project Performance Assessment Report (PPAR) is based on a review of the Implementation Completion Report (a self-evaluation by the responsible Bank department) and fieldwork conducted by OED. To prepare PPARs, OED staff examine project files and other documents, interview operational staff, and in most cases visit the borrowing country for onsite discussions with project staff and beneficiaries. The PPAR thereby seeks to validate and augment the information provided in the ICR, as well as examine issues of special interest to broader OED studies.

Each PPAR is subject to a peer review process and OED management approval. Once cleared internally, the PPAR is reviewed by the responsible Bank department and amended as necessary. The completed PPAR is then sent to the borrower for review; the borrowers' comments are attached to the document that is sent to the Bank's Board of Executive Directors. After an assessment report has been sent to the Board, it is disclosed to the public.

About the OED Rating System

The time-tested evaluation methods used by OED are suited to the broad range of the World Bank's work. The methods offer both rigor and a necessary level of flexibility to adapt to lending instrument, project design, or sectoral approach. OED evaluators all apply the same basic method to arrive at their project ratings. Following is the definition and rating scale used for each evaluation criterion (more information is available on the OED website: http://worldbank.org/oed/eta-mainpage.html).

Relevance of Objectives: The extent to which the project's objectives are consistent with the country's current development priorities and with current Bank country and sectoral assistance strategies and corporate goals (expressed in Poverty Reduction Strategy Papers, Country Assistance Strategies, Sector Strategy Papers, Operational Policies). *Possible ratings:* High, Substantial, Modest, Negligible.

Efficacy: The extent to which the project's objectives were achieved, or expected to be achieved, taking into account their relative importance. *Possible ratings:* High, Substantial, Modest, Negligible.

Efficiency: The extent to which the project achieved, or is expected to achieve, a return higher than the opportunity cost of capital and benefits at least cost compared to alternatives. *Possible ratings:* High, Substantial, Modest, Negligible. This rating is not generally applied to adjustment operations.

Sustainability: The resilience to risk of net benefits flows over time. *Possible ratings:* Highly Likely, Likely, Unlikely, Highly Unlikely, Not Evaluable.

Institutional Development Impact: The extent to which a project improves the ability of a country or region to make more efficient, equitable and sustainable use of its human, financial, and natural resources through: (a) better definition, stability, transparency, enforceability, and predictability of institutional arrangements and/or (b) better alignment of the mission and capacity of an organization with its mandate, which derives from these institutional arrangements. Institutional Development Impact includes both intended and unintended effects of a project. *Possible ratings:* High, Substantial, Modest, Negligible.

Outcome: The extent to which the project's major relevant objectives were achieved, or are expected to be achieved, efficiently. *Possible ratings:* Highly Satisfactory, Satisfactory, Moderately Satisfactory, Moderately Unsatisfactory, Unsatisfactory, Highly Unsatisfactory.

Bank Performance: The extent to which services provided by the Bank ensured quality at entry and supported implementation through appropriate supervision (including ensuring adequate transition arrangements for regular operation of the project). *Possible ratings:* Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

Borrower Performance: The extent to which the borrower assumed ownership and responsibility to ensure quality of preparation and implementation, and complied with covenants and agreements, towards the achievement of development objectives and sustainability. Possible ratings: Highly Satisfactory, Satisfactory, Unsatisfactory, Highly Unsatisfactory.

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This report was prepared by Peter Freeman, who assessed the project in October 2004. The report was edited by William Hurlbut, and Romayne Pereira provided administrative support.

Principal Ratings

Urban Transport (Loan 3885-RU)

	*ICR**	*ICR Review**	*PPAR*
Outcome	Satisfactory	Moderately Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	Modest	Modest	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

Bridge Rehabilitation (Loan 3990-RU)

	*ICR**	*ICR Review**	*PPAR*
Outcome	Satisfactory	Moderately Satisfactory	Satisfactory
Sustainability	Likely	Likely	Likely
Institutional Development Impact	Modest	Modest	Modest
Bank Performance	Satisfactory	Satisfactory	Satisfactory
Borrower Performance	Satisfactory	Satisfactory	Satisfactory

* The Implementation Completion Report (ICR) is a self-evaluation by the responsible operational division of the Bank. The ICR Review is an intermediate Operations Evaluation Department (OED) product that seeks to independently verify the findings of the ICR.

Key Staff Responsible

Urban Transport (Loan 3885-RU)

Project	*Task Manager/Leader*	*Division Chief/ Sector Director*	*Country Director*
Appraisal	Jane Holt	Jonathan Brown	Russell Cheetham
Completion	Ben Eijbergen	Eva Molnar	Kristalina Georgieva

Bridge Rehabilitation (Loan 3990-RU)

Project	*Task Manager/Leader*	*Division Chief/ Sector Director*	*Country Director*
Appraisal	Cesar Queiroz	Jonathan Brown	Yukon Huang
Completion	Ben Eijbergen	Motoo Konishi	Kristalina Georgieva

Preface

This Project Performance Assessment Report (PPAR) covers two projects in the Russian Federation. The first, the Urban Transport Project (Loan CPL-38850), was approved for a loan of US$329 million on May 16, 1995, and the second, the Bridge Rehabilitation Project (Loan CPL-39900), was approved for a loan of US$350 million on March 28, 1996.

Both projects were adversely affected by the Russian Federation financial crisis of 1998-99. The **Urban Transport Project** original total project amount was US$391 million of which US$308.7 million was expended. Six cities dropped out of the project because the dollar-denominated sub-loans became unaffordable after the ruble was devalued. However, the project was extended by 20 months to carry out strategically important studies for national roads and the Russian Railways. The loan amount disbursed by the final project closing date of August 31, 2003, was US$247.6 million, while US$81.4 million was canceled.

The **Bridge Rehabilitation Project** was also affected by the financial emergency. The original total project amount was US$466.2 million, of which only US$224.3 million was expended. Several regions requested that their components be reduced and in some cases canceled, since their revenue was largely ruble-based and the project had become unaffordable for them. The original loan amount was US$350 million, but in June 2000 the loan agreement was amended; US$158 million was cancelled at this time, while US$30 million of the remaining US$192 million was re-allocated to the City of Moscow, which was better able to cope with the crisis. A further US$37.3 million was cancelled on April 4, 2001, after committed contracts had been separated from other components that could be terminated. The project finally closed on August 31, 2003, 20 months later than anticipated, with US$153.8 million of the loan disbursed. Uncertainty about which elements could be supported in the changed circumstances, and staffing capacity constraints brought about by restructuring of key government departments, led to the implementation delays.

OED prepared this report based on an examination of the relevant Staff Appraisal Reports, Implementation Completion Reports, legal agreements, project files and archives, as well as other relevant reports, memoranda, and working papers. Discussions were also held with Bank staff involved in the projects. An OED field mission visited the Russian Federation in October 2004, conducted site visits, and attended relevant presentations on urban transport at the “Conference on Implementing Sustainable Travel Policies in Russia” held in Moscow. The projects were discussed with government officials (federal, oblast, and municipal) and with stakeholders. The mission appreciates the courtesies and attention given by these interlocutors as well as the support provided by the Bank’s country office in Moscow.

Following standard OED procedures, copies of the draft PPAR was sent to government officials and agencies for their review and comments but none were received.

Summary

This Project Performance Assessment Report (PPAR) covers two transport projects for the Russian Federation, Urban Transport and Bridge Rehabilitation. These early Russian Federation transport projects were implemented during a period of significant political and economic instability and were adversely affected by the financial crisis of 1998-99, leading to the cancellation of various components. Despite these difficult circumstances, both projects yielded many positive benefits and, in the case of the Urban Transport project, began a progression towards sector reform that is still continuing. The staff and officials linked with this project deserve acknowledgement for their ability to move the project ahead in such a way that the impetus of this reform would be sustained well beyond the end of the loan.

The ***Urban Transport*** project was intended to arrest the deterioration of urban transport services in several medium-sized Russian cities and to assist the transition towards a more market-driven environment in urban transport. It was conceived to address both problems in the supply of passenger transport vehicles and spare parts, as well as the re-organization and regulation of public transport services at both national and local level. In particular, the improvement in the level of cost recovery of public transport companies was given a high priority.

The ***Bridge Rehabilitation*** project was designed to improve the physical condition of selected high priority bridges and to strengthen the technical capacity of the bridge departments. When the project was restructured after the crisis, the City of Moscow secured an increased share of the project budget. This reallocation in favor of the capital city was a pragmatic decision, given their positive financial situation and the expected positive outcome. It was certainly a better option than canceling the project completely, which was the only other possible choice.

Indeed, one important outcome was that Moscow was able to develop a world class bridge management system which is likely to be extended to other Russian road authorities in due course, given its evident success and the interest such authorities have shown in the system. There is also some evidence that the sustainability of the federal and regional road authorities has improved since the completion of the earlier Highway and Rehabilitation and Maintenance project, assessed by OED in 2001.

The outcome of the Urban Transport project is **satisfactory**. Although the formulation of the project objectives was flawed, the expected outcomes were nevertheless substantially achieved, and the good progress toward urban transport reform deserves recognition. The outcome of the Bridge Rehabilitation project is also rated **satisfactory** following a major restructuring due to the financial crisis. Institutional development is rated **modest** and sustainability **likely** in both cases, while both Bank and borrower performances are rated **satisfactory** for both projects.

The assessment shows the difficulties of implementing projects affected by a major exogenous shock and a number of lessons can be drawn from how typical problems were addressed. In neither the Urban Transport nor the Bridge Rehabilitation

project, for instance, were the objectives formally changed to meet the new situation after the financial crisis. In both projects the opportunity to modify the objectives was presented when the restructuring proposals were approved, and in both cases this was not followed-up. If the projects been evaluated against the requirement (to be introduced in the FY 2006) to the effect that changes in objectives must be formally approved at Board level, the rating for these projects would have been less positive.

Russia is an enormous country and both projects had very widely-spread operations. Future similarly dispersed projects in large countries need to give more attention at project design stage to the adequacy of supervisory budgets and practical guidance in handling logistical management. Cities in the urban transport project were also committed to undertake legal reforms which they did not necessarily have the legal power to carry out. Moreover, the Bank's standard advice to client governments not to pass-on the foreign exchange risk of dollar-denominated loans to sub-national entities, whose revenue sources are limited to domestic currency, was compromised. In summary, the primary lessons learned from these projects are that:

- *The formulation of realistic and measurable project objectives is crucial and when there is a major restructuring of a project, the task team should take the opportunity to review the original objectives in the light of the changed circumstances.*

- *Bank supervision arrangements should be realistic and budgets should be higher when projects are decentralized or spread over a wide area involving more than one implementing authority. Project design should take this into account.*

- *Covenants should not be imposed on authorities that do not have the legal power to carry out the commitment. Weak or open-ended conditionality should be avoided and objectives should not be conflicting.*

- *It is unwise to let local sub-national borrowers carry foreign exchange risk in unstable macroeconomic conditions, especially when their revenues are in local currency.*

Ajay Chhibber
Acting Director-General
Operations Evaluation

1. Background

1.1 The Russian Federation joined the Bank in June 1992, soon after the dissolution of the Soviet Union. In the period that followed, the *Urban Transport* and *Bridge Rehabilitation* projects were prepared and implemented, but this was a time of severe recession and high inflation. According to the Country Assistance Evaluation (CAE) of 2002,[1] the Russian people were hesitant about the move to a market economy, unsure of what this would entail for their livelihoods, and concerned about the risks of a possible political backlash. Obstacles to, and targets of reform included state institutions designed for command and control, an economic structure based on central planning, together with production and distribution systems dominated by large state-owned enterprises and a newly created, but poorly functioning, financial system.

1.2 The Russian transition proved more difficult than had been anticipated by the international community. Successive stabilization and adjustment programs were only partially implemented due to weak institutional capacity and insufficient political will. Then, in 1998, a major crisis occurred following external shocks compounded by inadequate fiscal adjustment. During the course of the year, the Russian Federation defaulted on its debt, the ruble was floated, depreciating by over 60 percent, and GDP dropped by more than 5 percent. The transport sector was seriously affected by these events, which led to a decline in sector investment at a time when road and bridge infrastructure was already visibly deteriorating, and more than half of the rail infrastructure needed modernization. Improvements in the sector were considered critical to a successful transition to a market economy.

1.3 Many roads and structures had been neglected and there was a sizeable backlog of maintenance, due not only to declining public expenditures, but also to a tendency to favor new construction rather than the preservation of existing assets. Responding to these problems, the Bank supported two projects. The first, the Highway Rehabilitation and Maintenance Project (HRMP – Loan 3706-RU), was approved in 1994 and completed in 1999. A Project Performance Assessment Report on the HRMP in November 2001[2] found that the outcome was moderately satisfactory, sustainability non-evaluable and both Bank and borrower performance unsatisfactory. The second, the Bridge Rehabilitation Project, was approved in 1996, and was aimed at restoring selected high-priority bridges and strengthening the organization and practice of bridge management. It made sense to separate this project from the ongoing highway project, because of the specialist nature of large structures and the need to focus on introducing best practice in bridge management systems.

1.4 Buses, trams, and trolleybuses had meanwhile become the leading mode of passenger transport having overtaken the railways in 1996, measured in terms of

1. OED. 2002. Country Assistance Evaluation. Russian Federation, World Bank.

2. OED. 2001. *Highway Rehabilitation and Maintenance Project.* Project Performance Assessment Report, No 23292. World Bank.

passenger kilometers travelled.[3] Urban transport was particularly significant. For most people car ownership was unaffordable and walking was often not an option because of the harsh winter climate and the lengthy travel distances. Long commuter trips were a byproduct of the land use patterns favored by socialist city planners, which featured high-rise apartments on the city perimeters far from employment centers.

1.5 Against this background the Urban Transport Project was conceived; the idea was to preserve the essential urban transport capacity in 14 medium-sized cities and to use the project to kick-start a process of financial and policy reform in urban transport throughout the country. The largest conurbations of Moscow and St. Petersburg were specifically excluded from the list of beneficiary cities under the loan because they were both considered to be in a comparatively privileged position, due to the significant economic and political power of their respective municipal governments.

1.6 When the financial crisis overtook the country in 1998, both the Urban Transport and Bridge Rehabilitation Projects were affected. In the former case six cities dropped out, while in the latter project, several regions asked for their loans to be reduced and eventually cancelled, because they had become unaffordable. Both projects were nevertheless a turning point for the Russian Federation in the performance in the sector and presaged an important reform initiative, especially in urban transport. This report assesses both projects in this context. Since it was not feasible for the PPAR mission to visit all the project cities, two were selected for in-depth field trips; these were the university city of Veliky Novgorod, one of the smaller cities in the project, and the industrial city of Nizhny Novgorod, which was the largest city participating at project closure.

2. Overview and Objectives

URBAN TRANSPORT PROJECT

2.1 In the early 1990s urban public transport services in the Russian Federation faced a major crisis following the demise of the Soviet Union, which initiated a protracted and deep economic recession characterized by accelerating inflation and the nation's balance of payments experiencing severe pressure. The impact of decentralization, coupled with this recession, meant that the cities and sub-national governments could no longer depend on subsidies, as in the past, for transport service provision. Throughout Russia, bus and trolleybus public transport enterprises experienced great difficulties in continuing with their services without these subsidies. Cost recovery was exceptionally low, fare evasion was rife, and commuting became a misery for the majority of the users, who could not afford private transport and were captive to the public transport market. Buses were known for their long lives (up to 11 years), poor condition, excessive fuel consumption, high emissions, and frequent breakdowns. Severe overcrowding (up to six persons/sq m in

3. Russia. Country Profile, 2004. The Economist Intelligence Unit, London.

the peak[4]) was the norm and service frequency was unreliable. The maintenance of rail and metro systems found in the largest cities swallowed up a significant proportion of the now much smaller subsidy pool.

2.2 Consequently, little was left over for the bus-based networks found in most of the medium-sized cities, which experienced the full impact of the crisis. By the time the Urban Transport Project was appraised, the country's bus fleet was only 60 percent operational and the vehicle and spare parts industries were in disarray. Dealing with the dominant bus manufacturer from the Soviet era, Ikarus of Hungary, now required foreign currency which was in scarce supply due to the heavy external debt inherited from the Soviet Union, and the domestic bus manufacturing industry was not in a position to fill the gap even if the funds for new vehicles were available. The project was conceived to jointly address the problems encountered on both the demand and supply sides; that is, the supply of buses and spare parts, and the problems in the organization and regulation of public transport services, nationally and locally. The project objectives, components and costs are stated in Box 1:

Box 1: Urban Transport Project: Objectives, Components and Costs

Objectives:

- Preserve essential urban transport capacity in the participating cities by linking financing of urgently needed replacement vehicles and spare parts to the implementation of reforms.
- Strengthen the participating cities' urban transport sector institutions so as to improve the efficiency of passenger transport operations.
- Arrest the decline of urban transport services throughout Russia through the provision of urgently needed spare parts for transport vehicles.
- Provide restructuring advice for the domestic bus industry.

Components and Costs (US$ m)

- Purchase of new public transport vehicles *(Appraisal 278.3; final 247.3)*
- Vehicle rehabilitation *(Appraisal 40.9; final 44.8)*
- Public transport related equipment (*Appraisal 8.8;final 8.6)*
- Gas-fueled buses pilot project *(Appraisal 1.5; final nil)*
- Technical assistance and training *(Appraisal 13.0; final 8.1)*
- Spare parts program *(Appraisal 11.2; final Nil).*

2.3 The formal statement of objectives in the Loan Agreement is unclear as formulated. The first objective is really two objectives, one having to do with the short-term capacity to supply services, while the other refers to the pivotal long-term reform process to increase cost recovery from fares. There are also two significant additional project outcomes. These include the introduction of international competitive bidding for the procurement of new vehicles and vehicle rehabilitation (a major change in the Russian context), and a national reform process in urban passenger transport regulation.

4. Russia Urban Transport Project, final report, 2002. Ministry of Transport of the Russian Federation, Moscow.

2.4 The poor wording of the objectives also gave rise to other difficulties in implementation. Some of the covenants were vague, while the idea of reforming urban public transport services in their entirety was unrealistic within the scope of a single project. The project was, furthermore, designed in such a way that all covenanted reforms were to be implemented by the cities rather than the state. Having at least some of the reforms implemented centrally would have allowed the Bank to become more closely involved at supervision stage and would have eased the load on the Project Implementation Directorate (PID). The counter argument to this last point, however, put forward independently both by a task team member and some of the officials interviewed in Russia, is that the reform process was better driven at the city level, because the officials and politicians were more open to radical change. The assessment team believes, nevertheless, that a compromise design could have been considered.

2.5 The Bank's Loan Agreement was with the Ministry of Finance (MoF) of the Russian Federation. Each of the client cities then signed a dollar-denominated subsidiary loan agreement with the MoF covering both the investment and reform aspects of the project. Subsidiary loan agreements were guaranteed by the oblasts (regions), but the cities were to take the foreign exchange risk. The terms included a surcharge of 200 basis points above the primary Bank loan interest rate, a 5-year grace period, and a 15-year repayment period.

2.6 The objectives were not formally revised by the Board, but four major changes to the project design were made during project restructuring in 2000:

- The entire National Spare Parts Program was canceled. The original intention was that the Government would on-lend to a privatized distribution company which would make bulk purchases of parts and then sell them to transport enterprises at an agreed mark-up, but neither party could reach agreement on an on-lending rate despite protracted negotiations. In the meantime, however, the commercial spare parts market had developed sufficiently to make this arrangement superfluous. The Bank therefore agreed to the proposal to drop the program and to reallocate the funds for additional new buses and vehicle rehabilitation.
- In 1998 the Russian Federation experienced a financial crisis that led to a sharp decline in the value of the ruble relative to the U.S. dollar. The client cities could not meet their repayment obligations and by October 2000, six cities had dropped out of the project. As the picture became clearer, US$55 million of the Bank loan was canceled in 2000, a further US$22.6 million in 2001, and US$2.6 million in 2002, amounting to US$80.2 million in total.
- In the light of this crisis, the pilot scheme to purchase buses fueled by natural gas was also canceled. The results from market research, and from tenders received for gas-fueled buses in a similar Bank-financed project in Turkmenistan, revealed that such a small batch of buses would have unit prices at least 40 percent higher than conventional diesel-powered buses. In the circumstances, all parties agreed that this experiment should be abandoned.
- Finally, two new items were added to the technical assistance component. They comprised studies of public expenditure for the Russian Railways and for the national road network. These studies, together with the study on urban passenger

transport reform, provided a coherent basis for the next stage in the reform process of the Russian transport sector.

BRIDGE REHABILITATION PROJECT

2.7 There are more than 4,600 bridges on the federal road network (mostly constructed in the 1950s and 1960s), while a further 33,000 bridges are to be found on the regional networks. While some of these structures were rehabilitated as part of various road projects, there was a clear need to do something specific to reduce the backlog of bridge repairs that had built up throughout the country. Bridge maintenance has been sporadic and has often suffered from poor materials and workmanship. The contracting industry historically has largely been a public-sector monopoly, lacking both cutting-edge technological knowledge and cost efficiency. In 1994, when the Bridge Rehabilitation Project was under preparation, only 9 percent of federal bridges were found to be in good condition, 60 percent were rated as fair, 28 percent in poor condition, and the remaining 3 percent were in a state of emergency.

2.8 Typical problems resulted from the poor quality of concrete used, poor construction methods, and insufficient waterproofing. These resulted in concrete cracking, water leakage, corrosion of steel elements (often exacerbated by de-icing salt), and eventually the failure of the longitudinal beam joints. Timber bridges often found on regional roads were in especially bad condition, due to rotting of the main structural elements. Bridge closures on safety grounds were causing long detours and traffic congestion on alternate routes, with negative impacts on the mobility of road users and ultimately on both households and enterprises. The objectives, components and costs of the project are shown in Box 2:

Box 2: Bridge Rehabilitation Project: Objectives, Components and Costs

Objectives

- Improve the physical condition of selected high priority bridges on the federal and regional road systems, and interchanges with high traffic levels on federal roads.
- Assist in the reform of the institutional structure of road administration and the contracting industry, especially regarding the use of competitive bidding.
- Strengthen the capacities of the Federal Highways Department (FHD) to manage the bridges under its jurisdiction.
- Reduce the backlog of bridge rehabilitation and maintenance on regional roads for up to five participating entities, namely, Kirov, Leningrad, Novgorod, Tver, and Vologda Oblasts and the City of Moscow.
- Improve the administrative, technical, and financial relationship of FHD and the regions of the Russian Federation.

Components and Costs (US$ m)

- Bridge works *(Appraisal 354.4; final 180.4)*
- Bridge Management Equipment *(Appraisal 19.6; final 8.7)*
- Technical assistance, design, supervision of works and training *(Appraisal 31.3; final 35.2)*

2.9 The objectives of the HRMP were, incidentally, very similar to those above, except for the institutional objectives, which were somewhat broader, addressing generic financing and public expenditure issues for the road sector. While there were no formal revisions to the Bridge Rehabilitation Project objectives, there were implications when the project was downsized following the financial crisis of 1998. The borrower for the project was the Russian Federation and subsidiary loan agreements were arranged with the participating oblasts and with the City of Moscow. However, the primary Loan Agreement

was amended in June 2000, at which time the loan amount was reduced from US$350 million to US$192 million and US$30 million was reallocated to the Moscow component. Both the federal and regional components were dropped. (See Table 1.)

Table 1: Allocation of Loan at Appraisal and on Amendment in June 2000, US$ m

At Appraisal

Component	*Bridge Works*	*BMS*	*Tech Asst.*	*Total*
Federal Component	228.8	15.3	20.9	265.0
Regional Component	25.3	4.3	5.4	35.0
Moscow City	45.0	Nil	5.0	50.0
Total	299.1	19.6	31.3	350.0

Reallocation at June, 2000

Component	*Bridge Works*	*BMS*	*Tech Asst.*	*Total*
Federal Component	83.8	1.3	14.9	100.0
Regional Component	9.4	0.2	2.5	12.0
Moscow City	65.0	4.0	11.0	80.0
Total	158.2	5.5	28.4	192.0

Source: ICR and World Bank Integrated Controller's Systems

2.10 Once the full extent of committed amounts had been established, it was possible to cancel a further US$37.3 million on April 4, 2001, finally reducing the loan to about US$154 million.

3. Urban Transport Project (Loan 3885-RU)

PREPARATION AND IMPLEMENTATION

3.1 Because no prior sector knowledge had been gathered, the introductory sections of the SAR took the form of an initial sector study and the task team undertook substantial work in field diagnosis and strategy development. This team was also successful in mobilizing external grant funding for the field work. The implementation arrangements were a pragmatic solution to managing a complex project. A Moscow-based PID, Transinvest, was appointed to act as an intermediary between the Ministry of Transport (MoT), the city authorities and the Bank, while an Urban Transport Project Coordinating Council (UTCC) in the MoT was given the responsibility to oversee and coordinate the policy aspects of the project.

3.2 An important signal of borrower commitment was the Government's progress in pursuing policy reform objectives from an early stage. This was achieved by using an innovative self-selection mechanism for the candidate cities. To be considered for inclusion in the project, cities had to meet three criteria: (i) local public transport operators had to be transformed into legally autonomous corporate entities; (ii) they also had to have achieved a 25 percent cost recovery target by the end of July 1994; and (iii) cities had to have set up transport departments to regulate and plan urban transport systems.

3.3 By October 1998 project progress was rated unsatisfactory, although the development objectives were being met and the cost recovery targets exceeded. The most direct impact of the financial crisis was that the cities were accumulating arrears in sub-

loan payments; the PID had continued making loan disbursements despite the fact that these payments were in default. More disturbing, however, was the fact that the PID and the cities could not agree on the actual figures of the amounts paid and owed. In the ensuing discussions between the Government and the Bank a tight timetable was agreed for the MoT to restructure the PID, strengthen its financial management ability, amend the sub-loan agreements, resolve the status of non-performing contracts, and propose a strategy for continuing with the project.

3.4 Non-performing contracts were annulled, the most important of which was the contract for 230 trolleybuses. Although the PID had wanted to award the contract to Tolza, a local manufacturer and the lowest bidder, the Bank objected on the grounds that the company was technically insolvent. The PPAR mission also confirmed that by the end of the project only three cities managed to eliminate sub-loan arrears and continued to make payments. At project closure the final disbursements were substantially lower than estimated at appraisal with the main reasons being the cancellation of the "National Spare Parts" component, the withdrawal of six cities from the project and the annulment of the trolleybus contract with Tolza. Nevertheless, the project objectives had largely been accomplished by the time the exogenous financial crisis arrived, thus the outcome was still generally positive.

RATINGS

Relevance

3.5 The relevance of the project objectives is rated **high.** This rating is based on their relevance to the development priorities of the Government, as well as their importance to and consistency with the CAS, which was in preparation at the time of appraisal[5]. The CAS strongly supported the Government's intention to move toward a market-orientated economy, supported by an adequate institutional infrastructure. The project was also in line with the transport sector strategy review of 1993. Russian Federation government strategy was to devolve responsibility for urban transport to the municipal level, privatize some public transport services, especially those of small operators, drastically reduce central government subsidies for urban transport, and strengthen local bus manufacturing capability.

Efficacy

3.6 Project efficacy is rated **substantial** since overall the objectives were largely achieved with only minor shortcomings. The original physical targets in terms of quantities of vehicles purchased or rehabilitated were achieved to the extent of 81 percent of the original targets (see Table 2) and there were acceptable reasons for the shortfall. First, the unit prices for the vehicles at appraisal were still subject to negotiation in respect of the most appropriate specification. The Bank eventually concurred with the view that a higher than minimum specification should be used, since this would also allow the Russian passenger transport vehicle manufacturing industry to begin to compete for sales

5. Discussed by the Board of Directors on June 6, 1995.

in international markets. Second, the impact of the devaluation of the Russian ruble was unforeseen.

Table 2: Completion of New and Rehabilitated Passenger Vehicles under the Urban Transport Project.

Vehicle	Target Number	Actual	%
New vehicles purchased			
Buses	1,500	1,392	93
Trolleybuses	272	38	14
Rehabilitated Vehicles			
Buses	997	818	82
Trolleybuses	327	254	78
Tramways	380	328	86
Overall (new/rehabilitated)	3,476	2,830	81

Source: ICR and transport authorities.

3.7 The low figure in the line item for new trolleybuses was due to the bankruptcy of the lowest bidding manufacturer, coinciding with the Russian Federation's own financial crisis, which led to the cancellation of non-performing contracts, including the largest trolleybus contract. In general, the city authorities surveyed during the preparation of the ICR were, in the view of the OED assessment team, justifiably satisfied with the progress made under the project and reported increases of around 25 percent in passenger usage between 1997 and 2000. Cities that had to leave the project following the crisis of 1998 expressed regret at not being able to continue. This was verified by the PPAR mission.

3.8 The main objective on the policy side, to shift the onus of financing public transport operations to passengers, was fully achieved, and agreed targets exceeded. Cost recovery (defined as fare revenue divided by direct operating costs) was to be raised to 35 percent in 1995, 40 percent in 1996, 45 percent in 1997, and 50 percent by 1998.[6] All but one of the participating cities exceeded 50 percent by 1998 and by 2001, average cost recovery had reached 78 percent.

Table 3: Cost Recovery of Public Transport Companies in the Client Cities (%)

City	*Population (000)*	*1995 Target 35*	*1996 Target 40*	*1997 Target 45*	*1998 Target5 0*	*1999 Target 55*	*2000 Target 60*	*2001 Target 65*
Pakov	204	**92**	**98**	**110**	**110**	**105**	**102**	**105**
Vologda	303	14	**74**	**102**	**111**	**107**	**105**	**99**
Novgorod	265	**72**	**66**	**77**	**91**	**80**	**81**	**95**
Smolensk	352	33	**49**	**65**	**69**	**72**	**62**	**84**
Omsk	1,159	**45**	**56**	**59**	**65**	**82**	**97**	**83**
Yekaterinburg	1,420	**45**	**61**	**68**	**70**	**62**	**73**	**82**
Cherepovets	318	**77**	**93**	**86**	**78**	**87**	**82**	**74**
Rostov-on-Don	1,020	Na	**42**	42	**51**	**61**	**63**	**73**
Nizhny Novgorod	1,368	16	26	29	30	47	**62**	**71**
Samara	1,160	28	35	**48**	**52**	**77**	**72**	**70**
Kostroma	281	**42**	**42**	**59**	**65**	**70**	**75**	**69**
Tver	457	21	25	43	**56**	**55**	54	59
Saransk	318	23	**43**	**67**	**68**	**58**	51	49
Average	**663**	**42**	**55**	**66**	**71**	**74**	**75**	**78**

Source: Survey for Stakeholder workshop, 2002.
Notes: i) Only targets to 1997 were included in the loan agreement – the other targets were advisory; ii) Bold type indicates target met.

6. The last target was not a part of the loan agreement.

3.9 The PPAR mission requested the latest figures for Novgorod and Nizhny Novgorod during their visits to these cities and found that Novgorod's rate of cost recovery in 2004 showed a small surplus at 104 percent. Nizhny Novgorod's cost recovery, on the other hand, had declined from 71 percent in 2001 to 53 percent in 2004. The reason for this was that over 1,200 small private operators were now in competition with the established public transport operators. These private operators did not have to carry passengers who were exempt from paying fares, had questionable safety standards, and preferred not to operate late at night or very early in the morning when ridership was low. These issues are now being addressed in an attempt to "level the playing field." Novgorod, in contrast, is the only one of the participating cities that does not permit such private operators, on the perhaps spurious claim that its population of 265,000 is too small to allow such competition.

3.10 The reform of the status of public sector operators and their relationship with municipal authorities was achieved in all participating cities and indeed was covenanted in the Loan Agreement. The cities transformed their public transport companies into legally independent corporate, publicly-owned entities, separated urban from intercity operations where necessary, and introduced service contracts as instruments to regulate the new city-company relationships.

3.11 A further outcome achieved was the improvement in the operation, maintenance, and planning activities of the client companies. This was consistent with achieving the objective related to improving the efficiency of urban transport operations. The operators benefited from the various technical assistance activities, which included assistance and advice with regard to organization and management, the economics of vehicle rehabilitation and a competitive procurement approach to the purchase of services and spare parts. It is not possible to measure the actual impact of this assistance, other than to report that in both cities visited by the PPAR mission, the transport managers expressed their satisfaction with the initiative and were able to show that certain equipment purchased under the loan was still in use and in good condition. Competitive bidding for the procurement of new vehicles and vehicle rehabilitation in all participating cities was successfully introduced. Modern specifications were developed and explicit bid evaluation criteria introduced. The project also provided restructuring advice for the domestic bus industry, thus fulfilling the objective in this regard. This advice comprised market research on both the supply and demand side and the dissemination of results. The activity was completed in July 1998, leading to expressions of interest by foreign investors in two domestic manufacturers. However, this interest temporarily waned during the national financial crisis that then occurred.

3.12 The arrest of the decline in urban transport services throughout Russia was a very broad objective for a single project, but was nevertheless substantially achieved, albeit fortuitously helped by the impact of market forces prevailing independently of the project. The objective was linked to the component to introduce a national spare parts program, which was canceled because a private sector spare parts market had developed in the meantime of its own accord. There is also evidence, however, that the progress with the introduction of cost recovery policies has been emulated by several non-project cities, while the Government has passed legislation to phase out exempt fares, a course of action advocated by the Bank implementation team. Furthermore, there is evidence of

widespread increases in the numbers of passengers being carried. In Novgorod, for example, 153 million passengers were carried in 2003, compared with 99 million in 1995 and the comparative figures for Nizhny Novgorod are 512 million in 2003 and 366 million in 1995. The preparation of a national urban passenger transport strategy and the subsequent commencement of a regulatory reform process have also helped to turnaround the pattern of decline.

3.13 The Ministry of Transport's exemplary preparation of a reform strategy helped achieve their reform implementation objective. The Bank supported a further study of over 100 Russian cities, gathered the latest international experience, evaluated regulatory options for the Russian Federation, and ultimately developed a national reform proposal for the urban passenger transport sector. This was done in a participatory manner through a series of workshops involving national, regional, and municipal governments. Studies were also successfully completed for the development of a reform program for the Russian Railways and national roads, focusing on public expenditure aspects. An unexpected outcome from the project, which encouraged a more commercial approach, was the rapid growth of private operators in some cities. Rostov-on-Don led the way in showing how both public and private operators could be compelled to successfully cooperate to bring about better services for the passengers.

Efficiency

3.14 The efficiency of the project is rated **modest.** The financial analysis of the city governments and their public transport companies was done as well as could be expected in the somewhat chaotic circumstances prevailing in 1994-95. An economic analysis was carried out at appraisal of the procurement and rehabilitation of the fleet in each of the participating cities and an average Economic Rate of Return (ERR) of 39 percent was estimated. The input data, however, were generally weak and rested on numerous assumptions due to the lack of useful information systems in the various public transport organizations. The ICR author did not to have the resources to undertake an economic analysis in 14 cities at completion and defended the decision not to pursue this issue on the grounds that the effort was not worthwhile in the absence of good data in the original calculations. While the PPAR mission concurs, it also points out that had the necessary data capture been included in the project design, this would have been less of a problem. The methodology for evaluating fleet replacement and expansion of public transport services is very well developed, involving life cycle cost analysis and is widely used in the private sector, but assumes good data availability. In the circumstances, of course, such was the run-down nature of the existing fleets that virtually any project in this area would have had a good economic return, even if measured imprecisely.

3.15 Contract prices for both buses and trolleybuses were higher than estimated at appraisal. The technical specifications were discussed at length during project preparation and again before bidding, since the borrower was keen to produce specifications that would meet European Union standards and thus encourage the Russian bus supply industry to produce a vehicle that could also be exported. After protracted negotiations and considerable time and effort invested by Bank staff and borrower officials, the specifications that emerged were certainly not "excessive" and have since been adopted in other countries, notably India and China.

3.16 The poverty analysis undertaken for the project was limited to a statement about "there being a system in place to exempt poor travelers from paying for public transport." If an analysis were to be done today, it would no doubt consist of an all-inclusive household expenditure analysis. The efficiency with which the strategy and policy reform studies were conducted on the other hand, was very good and the Bank is continuing to give strong support to the reform process to the present day. The recommendations have largely been acted upon and tangible results in terms of regulatory change and the implementation of practical guidelines have resulted.

Outcome

3.17 Taking all the above into consideration, the project outcome is rated **satisfactory** which is an improvement from moderately satisfactory in the ICR review, but consistent with the ICR rating. In the ICR Review, the downgrading was based on the perception of overly ambitious objectives with insufficient linkages to legal covenants, inadequate poverty analysis, and the fact that the covenanted reforms were to be implemented by the cities rather than the state. However, more thorough scrutiny by the PPAR mission leads to the conclusion that this assessment was harsh. Only the objective about arresting the decline in urban transport services throughout Russia was found to be unrealistic and even here significant progress was made. The fact that there were insufficient linkages to legal covenants is true, but this is a technical point when the outcome of the project was actually successful. Similarly, it is unfair to penalize the task team for its poverty analysis at a time when it was not Bank practice to treat this issue as intensively as would be the case today. The implementation by the cities was also entirely in line with the Russian Federation's decentralization strategy.

3.18 The project exceeded its cost recovery target and largely achieved its physical targets. Privatization of small operators exceeded expectations and the technical assistance began a process that is ongoing and has led to the beginning of a complete reform of urban transport throughout the Federation. The objectives in aggregate were substantially achieved and the project was even extended for a year to expand the strategy study to encompass 100 cities. This activity culminated in a series of workshops for city and regional governments in 2002 and has since led to agreement by the Government to more extensive reform, now being rolled out.

Institutional Development Impact

3.19 The institutional development impact is rated **modest.** At city level it is difficult to measure the project impact on institutional development, but officials and professionals alike did have an opportunity to learn first hand about the latest developments in international public transport management, management information systems, procurement practice, and regulation; US$4.4 million was expended on technical assistance and training for the participating cities. The PID also set up an Urban Transport Training Center in its Moscow office, which was used to disseminate study results and conducted specialized seminars.

3.20 At national level the institutional impact was more visible. The training activities and studies (a further US$4.0 million), created a willingness in the MoT to undertake far-reaching regulatory and policy reform. The first step was for the MoT to set up a Center for Urban Public Transport Reform (CUPTR) as well as the distance learning center mentioned above, which was additionally financed by Trust Funds from the governments of Ireland, Netherlands, and the United Kingdom. The Bank also documented the experiences and proposed strategy for urban transport in the Russian Federation[7] to be used as a platform for institutional strengthening to follow and also for learning by other transition countries.

Sustainability

3.21 Sustainability is rated as ***likely***; by the end of 2001 significant progress had been made, especially regarding financial sustainability. Cost recovery exceeded the agreed targets by considerable amounts (described more fully in paragraph 3.8 and Table 3). Investigations by the PPAR mission showed that since 2001, competition by private operators and the large number of state-decreed exempt fares, partially stalled cost recovery, but there are two reasons for optimism that such hurdles are already disappearing. First, several cities are now taking steps to regulate operators, so that public and private services will complement each other. Routes are now subject to tender and minimum service conditions apply. Both public and private operators, singly or in combination, have won such tenders. Second, legislation has now been passed to phase out, except for the really needy, social (or "exempt") fare exclusions. Other positive developments have been various reforms in municipal authorities to provide a better basis for financial stability as well as improvements in procurement practices and general transport management. Many cities have experimented on their own with public-sector reform, deregulation and privatization without waiting for top-down action. The technical ability to assure future operation and maintenance is largely in place.

3.22 A stumbling block remains lack of clarity on the role of central government in respect of urban transport strategy, since the powers with respect to urban transport have been devolved to local level. In June 2004 a report was prepared for the Bank on advancing urban passenger transport reform.[8] It suggested a 10-year, four-stage process to evolve a country-wide urban transport policy and get it implemented. In October 2004 a conference was held in Moscow, attended by the PPAR mission, on "Implementing sustainable urban transport policies in Russia and other Commonwealth of Independent States (CIS)[9] countries." At this conference, supported by the European Conference of Ministers of Transport (ECMT), the United Nations Economic Commission for Europe,

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7. *Urban Transport in Europe and Central Asia Region: World Bank Experience and Strategy.*

Infrastructure and Energy Services Dept., Europe and Central Asia Region, World Bank, December, 2002.

8. *Advancing Urban Passenger Transport Reform in the Europe and Central Asia Region.* Final Report. Version 2.1, World Bank, June, 2004.

9. CIS was created in 1991 and in 1993 agreed to create an Economic Union. It comprises all of Russia and many of the former Soviet Republics.

and the World Health Organization, endorsement was given to ideas on the way forward.[10] A momentum for reform has been created and will likely continue as the Russian Federation is to chair the ECMT in 2005 and wants to show progress with policy implementation; it is also likely to continue to receive considerable assistance from Europe, which would further enhance the likelihood of sustainability. In the view of the PPAR assessment mission, sustainability is likely, but progress toward strategic goals is probably going to be piecemeal rather than uniform.

Bank Performance

3.23 Bank performance is rated **satisfactory** in this, the first urban transport mission in the Russian Federation, with a new borrower facing enormous difficulties. The preparation process took longer and was more comprehensive than usual. The Bank also assisted the borrower to secure Trust Funds for this activity through the governments of the United States, the Netherlands, and the United Kingdom. Negotiations, moreover, had to be conducted with 14 separate cities. While there were some weaknesses in project design, especially the poorly written objectives, which did not fully align with the loan agreement, the Bank team deserves credit for encouraging and supporting the borrower in making a major policy shift, which included a vigorous effort to ensure more cost recovery from urban transport users and to implement market-based procurement. Excellent support was also given to the borrower in the writing of the technical specifications and the evaluation criteria for new vehicles.

Borrower Performance

3.24 Borrower performance is also rated **satisfactory.** At the commencement of preparation the MoT had no experience of working with the Bank. However, it quickly set up a vigorous PID and by venturing into new territory in both the procurement process and user charging. The UTCC worked less effectively in practice, which created difficulties in meaningfully addressing the issues during the 1998 crisis. In the latter stages of the project the MoT accelerated its performance and became very committed to the reform process, to the extent that it expanded the focus of reform beyond urban transport to include highways and railways.

3.25 In the early stages of implementation the PID did very well in setting up a well-managed procurement system, but initially tried to protect the interests of domestic suppliers, which led to a protracted and ultimately failed experience with trolleybus purchases. During the financial crisis the PID's financial management was also not what it should have been, because it erroneously believed that sub-loan management was the job of the MoF. Following this, the PID was reconstituted with a strong focus on financial management and from that time performed creditably with the administration of the remainder of the project.

10. Donchenko, VD, October 2004. *Problems Achieving Sustainable Urban Transport in Russia*. Conference on Implementing Sustainable Urban Travel Policies in Russia and Other CIS Countries. Ministry of Transport of the Russian Federation, Moscow.

4. Bridge Rehabilitation Project (Loan 3990-RU)

PREPARATION AND IMPLEMENTATION

4.1 Quality at entry of this project was high because of learning from the prior roads project and an excellent amount of specialized preparation work, including a transport sector review, which detailed the chain of events leading from poor infrastructure and services to weaknesses in institutions and policies. A major effort had also been undertaken to carry out an extensive bridge condition survey and to estimate standard costs. Project design quality was also high and the main Project Implementation Unit (PIU), Dorinvest, was already tested following its experience under the HRMP. Five lessons had been learned from previous experiences in the HRMP and other projects in Russia. These were:

- Identification of a committed counterpart team with sufficient authority to move the project forward;
- Coordination among key interested parties on key issues;
- Early detailed attention to procurement and other implementation issues;
- Involvement of local consultants and institutes with specific local knowledge; and
- Avoidance of costly design changes during construction by having an expert "vetting" system prior to sending invitations for bids[11].

4.2 The project design complied fully with the safeguard policies in force at the time. As in preparation, the supervision stage benefited from economies of scale in that staff involved in the HRMP and the preparation of HRMP2 also helped prepare and supervise the Bridge Rehabilitation Project. This meant that a good supply of highly qualified Bank experts was always available and contributed to the quality of the support effort.

4.3 Lack of counterpart funding was critical after the collapse of the ruble. It affected the regional component the most, because regional revenue was mainly derived from domestic sources. As was the case of the cities in the Urban Transport Project, the regions had agreed to bear the dollar-denominated foreign exchange risk. Following the Russian financial crisis a decision was made to cancel the significant unexpended federal/regional component portion of the project, reducing the scale of total benefits expected. The judgment that the Moscow component, however, had a higher probability of success and the decision to continue with and enlarge this element was, in the view of the PPAR mission, bold and insightful, given the scale of the macro-crisis. For the final phase of the project the staffing level of Bank missions was reduced, but quality technical expertise was still provided, including high-level technical support from the U.S. Federal Highway Administration.

11. OED Project Performance Assessment Report No 23292, November 29, 2001.

RATINGS

Relevance

4.4 The relevance of the project is rated **substantial.** It was clearly in line with the country's development priorities towards a market economy, supported by adequate physical and institutional infrastructure as articulated in both the CAS and the transport sector strategy review. Following worldwide trends, the rail/road split for freight was starting to shift toward highways and the performance of the road system would therefore be on the critical path to a successful transition to a market economy. Bridges are the most expensive and risk-prone structures on the road network and many were in a particularly vulnerable condition. A dedicated project on bridges was necessary because the larger structures required specialized expertise, supported by a customized management system. Failure or closure of the larger bridges could mean long deviations or alternative routes for road users, seriously disrupting the activities of the public in general and directly affecting the costs of transport companies. The shift in the project in favor of the City of Moscow at the time of restructuring, however, partly moved the locus of beneficiaries away from the neediest, since the Moscow administration was financially stronger than the oblasts, and for this reason the rating is given as substantial rather than high.

Efficacy

4.5 The efficacy of the project is rated **substantial** in terms of achieving its de facto administratively revised objectives and associated targets; (i.e. after the scope of the project was scaled-down following the 1998 financial crisis in Russia). When the federal/regional component was dropped, Moscow became the main focus of both the physical and institution building objectives of the project; even though at this point only 45 percent of the original loan amount had been expended by the federal and regional agencies. In all, 76 bridges and overpass rehabilitation works were completed, at a total cost of US$180 million.

4.6 The Bridge Management System (BMS) was the largest component of the technical assistance portion of the project and was substantially achieved. This initially involved the development of a federally-based package of programs (MONSTR), featuring a bridge inventory, structural design module, and an economic evaluation module. When the federal/regional part of the project was canceled, the work was incomplete, although it has continued on a low level using own funds. Upon restructuring in 2000, the work was continued on the bridge network for the City of Moscow and field tested in 2002. It is now housed in the Bridge Department (GORMOST) of the Moscow City Administration. The PPAR mission visited GORMOST and had the opportunity to visit the new BMS unit and log into the system and run queries about the Bank-financed bridges in Moscow. The extent of available information was impressive. The analytical part of the BMS embodies the latest international experience and is definitely at the cutting edge of knowledge on the subject.

4.7 The technical assistance objective to strengthen the capacities of the FHD to manage the bridges under its jurisdiction was partially achieved. Such technical assistance

included design and supervision studies of bridge improvements and a training program linked to the HRMP. Some 500 staff from the federal and regional road agencies and about 50 from the City of Moscow attended. The total exposure was estimated at 550 staff weeks. The principles and practice of competitive bidding for works, an initiative first introduced in the HRMP, was sustained under the project, but the commitment to this approach by FHD was not fully realized because a number of senior staff continued to raise objections to the procedure. The final objective, the improvement of the administrative, technical, and financial relationship between the Russian Federal Highways Agency and the regions, was not achieved as the proposed Road Financing Study[12] did not take place.

Efficiency

4.8 The efficiency of the project is rated **substantial** despite slightly higher unit costs at completion. The economic evaluation undertaken in the SAR was particularly thorough considering the challenge of calculating net present value and economic rate of return (ERR) for hundreds of bridges, from which some 300 were prioritized and selected for inclusion in the project. Rates of return fell within the range of 12 to 87 percent with an average (weighted by investment costs) of 28 percent. Following project completion, the calculations were re-done for all 10 bridges improved under the restructured Moscow component, while a sample of 10 bridges improved under the federal/regional component was also selected. However, as detailed in Table 4, the reality is more complicated. In the federal component only 21 percent of bridges were completed, while 70 percent of regional bridges were finished. Costs were slightly underestimated in Moscow's case, but when the project was reconfigured additional funds were allocated.

Table 4:Number of Bridges and Cost of Civil Works (US$m) at Appraisal and Completion

Component	*Number of Bridges*	*Cost of Civil Works*
At Appraisal		
Federal	200-300	317.2
Regional	20	35.1
Moscow City	20	62.4
Total	240-340	414.7
At Completion		
Federal	52	79.6
Regional	14	13.3
Moscow City	10	87.5
Total	76	180.4

Source: ICR and Road Authorities

4.9 For the Moscow bridges the average ERR was 31 percent at appraisal and at completion 29 percent. Since the traffic forecasts were much as predicted, the main reason for the slightly lower ERR was higher construction costs. This varied considerably between bridges, but typical problems related to accommodating traffic, delays caused by third parties (such as utility companies), and unforeseen price rises in the cost of some materials, such as polymer paint. The ERRs for the sample of federal/regional bridges

12. Referred to in the Loan Agreement, Schedule 5, clause 7.

were on average 20 percent at appraisal and 23 percent at completion, with greater individual variations in traffic growth, while costs were much as expected. However, these structures were in general small-scale and less complicated. Clearly the return on investment was good throughout the project and well above the 12 percent threshold.

4.10 There was disagreement between the FHD and the Bank regarding the procedures for design, procurement and supervision used. The Bank favored design and supervision by independent consultants, selection of the best rehabilitation strategy through economic evaluation, and contract award through a competitive approach. The FHD preferred the Soviet method, which was heavily oriented to engineering criteria in design, fulfilling centrally set quotas and with the work being undertaken by state monopolies. They alleged that the cost was higher and it took longer using the Bank's approach. Much of this debate took place under the HRMP, but spilled over into the bridge project. However, FHD's focus on costs misses the point that the difference in output is substantial. Costs also need to be unpacked to ensure fair comparisons are being made. Although these misunderstandings were gradually resolved, the progress by the FHD with implementation had been comparatively slow and, consequently, fewer bridges had been completed than expected when the financial crisis triggered the cancellation of this part of the project.

Outcome

4.11 The outcome of the project is rated **satisfactory** against its administratively revised objectives and associated outcome targets, since the original project scope was scaled-down as a result of an exogenous factor (the 1998 financial crisis) and the project achievements met the efficiency and relevance criteria.

Institutional Development Impact

4.12 The institutional development impact is rated **modest.** The project clearly extended the practice of competitive bidding for works and independent design and supervision that had already been introduced by the HRMP. The domestic consultant and contracting industry also benefited from the experience gained in the project, especially the introduction of new technologies for bridge works.

4.13 The full Bridge Management System for the FHD using the MONSTR program was curtailed because of the financial crisis, but FHD has continued to use detailed bridge condition assessments for selected bridges. The BMS for the City of Moscow, on the other hand, was fully developed and implemented and by August 2003 its use was mandatory for bridge structures throughout the city. Although the impact is not measurable, the project made a further indirect contribution to enhance the capacity of bridge management in Russia through the various training programs. These amounted to 550 staff-weeks, compared to the estimate of 200 at appraisal. The environmental review of the project during preparation[13] enabled knowledge transfer to local consultants of environmental best practice. On the downside, FHD coincidentally underwent a major reorganization after its

13. Katz A, 1995. *Environmental Review of the Proposed Bridge Rehabilitation and Reconstruction Project in Russia and Status of Environmental Aspects of the Highway Rehabilitation and Maintenance Project in Russia.* Prepared by Andrea Katz Associates in Rural Development Inc for the World Bank.

portion of the project was canceled. The PIU was disbanded and several departments were discontinued.

Sustainability

4.14 The overall assessment of sustainability is **likely.** With regard to the physical works, the high quality of bridge works and the materials used gives reason to believe that these benefits will be sustained for many years. In the City of Moscow, the BMS and the maintenance arrangements are very satisfactory, strongly supported politically, and are highly likely to continue.

4.15 Although the picture for the federal bridges looked at one time more questionable, the new-style, lean department under the MoT has improved support systems and is staffed with very capable people, (albeit different staff from those involved in the project itself). With regard to financial sustainability, the matter was pursued under the extension of the Urban Transport Project, which included a study, primarily on the public expenditure aspects of federal roads. The study findings have been incorporated in the Russian Transport System Modernization Program[14]; this program has been accepted by the Government in concept, and is to be implemented in phases over the next few years to ensure that financial stability is achieved.

Bank Performance

4.16 Bank performance overall was **satisfactory.** Preparation was particularly well handled and due to the complexity of the BMS, the staff was even able to use their professional networks to secure additional expertise from the U.S. Federal Highway Administration. A new economic approach for bridge evaluation was developed and eventually built into the BMS packages. Design and supervision were also both undertaken with great thoroughness. The most testing period was when the financial meltdown occurred. At this point the Bank stepped up its supervisory missions and encouraged the continuance of the Moscow component, but its efforts could not persuade the FHD to comply with a number of loan clauses, including maintaining an effective PIU, and it was subsequently decided to cancel the component and restructure the project. The Bank made limited progress with encouraging FHD to accept the principles of a market orientated approach, but the concept was whole-heartedly endorsed by the City of Moscow. A letter from the Moscow administration praised the Bank for the high efficiency of competitive bidding procedures. It went on to say that considerable savings had been gained as a result of the bidding and this enabled two additional major bridges, the Krimsky and the Krylatsky, to be rehabilitated.

14 . See, for example, Ministry of Transport of the Russian Federation. 2002. *Russia: Urban Transport Project,* Final Report, Moscow.

Borrower Performance

4.17 Borrower performance is also rated **satisfactory** on balance, taking an average of the varied levels of performance over time by the different parties. During preparation and the first two years of implementation up to the mid-term review, FHD had good ownership of the project, but following differences of opinion in the HRMP regarding the best economic management approach to design, procurement and supervision, FHD's performance deteriorated. The PIU became more rigid regarding professional differences of opinion and FHD senior management slowed implementation by taking a negative stance towards implementation and allowing the PIU to lose capacity through attrition. In fact, the PIU not only lost most of its qualified staff, but also suffered several changes of Director. Following the devaluation of the ruble, the demise of the PIU and the non-compliance with financial covenants, FHD also failed to write a completion report to evaluate the experience. In this difficult period, however, FHD was drastically reorganized and new management then moved into the vacuum and complied fully with the Bank's requirements. Nevertheless, a year of implementation progress was probably lost in the process prior to the cancellation of the federal/regional component.

4.18 At the other extreme, the City of Moscow, including its PIU, performed in an exemplary manner throughout the entire project and a good partnership between the Bank and the PIU eventuated[15]. This included procurement, training activities, planning, and general administration. Audits were done on time and the findings of the auditors implemented. There were no financial difficulties.

5. Conclusions and Lessons

5.1 The two projects reviewed here were implemented during a period of significant political and economic instability and were adversely affected by the financial crisis of 1998-99, leading to the cancellation of various components in each case. They both yielded positive benefits and, in the case of the Urban Transport Project, initiated a major process of reform that is still unfolding. The staff and officials associated with this project deserve credit for their ability to move the project forward so that the momentum of reform would be sustained well beyond the end of the loan. Some more specific lessons can also be drawn:

Formulation of Development Objectives. In neither the urban transport nor the bridge rehabilitation project were the objectives formally changed to meet the new situation after the financial crisis. In the former case the spare parts component had become redundant, six cities had dropped out and a major new trolleybus contract was canceled, while much more emphasis was placed on sector-wide reform. The latter case in turn placed more focus on the Moscow component as opposed to the federal/regional component. In both projects the opportunity to modify the objectives was presented when the restructuring proposals were sent for Board approval, and in both cases this was not

15. See for example letter dated December 2, 2003 from Yu Roslyak, Deputy Mayor, Moscow City Government.

followed-up. If the projects been evaluated against the requirement (to be introduced in the 2006 financial year) to the effect that changes in objectives must be formally approved at Board level, the rating for these projects would have been less positive.

5.2 **Need to budget sufficient Bank staff resources for projects with dispersed operations.** Russia is an enormous country and both projects had very widely-spread operations. The urban transport project operated across 14 widely dispersed cities up to 1,500 miles apart, while the bridge project had operations scattered over an even wider geographic area. Modest budgets prevented the task teams from supervising the project *in situ*. Thus the Bank was forced to rely heavily on information from the PIUs, which sometimes meant that inadequate attention was given to important local needs or concerns. The cities would have benefited from more contact with Bank staff, while in the bridge project the Bank relied too much on the PIU and did not recognize from the outset that the regional highway authorities had some valid concerns that needed to be addressed. Future similar dispersed projects in large countries need to give more attention at project design stage to the adequacy of supervisory budgets and practical guidance in handling logistical management.

5.3 **Covenant inconsistencies in the legal agreement.** Cities in the urban transport project were committed to undertake legal reforms which they did not necessarily have the legal power carry out. Moreover, in some cases the conditionality of the covenants was either weak or open-ended. An example is: "Cities should take *all the necessary* measures to support the provision of transport services by private individuals or companies…." The wording is vague and cannot be measured. This condition is also directly in conflict with the imperative to increase cost recovery for public sector passenger transport companies.

5.4 **Foreign exchange risk.** With the onset of the Russian financial crisis several cities in the urban project and the regional and federal components of the bridge rehabilitation project had to leave the project. The Bank's standard advice to client governments is not to pass foreign exchange risk of dollar-denominated loans to sub-national entities, whose revenue sources are limited to domestic currency. This principle was compromised in these projects on the insistence of the Russian Federation Ministry of Finance and ultimately led to large components of both projects being canceled.

5.5 The primary lessons learned from these projects are that:

- *The formulation of realistic and measurable project objectives is crucial and when there is a major restructuring of a project, the task team should take the opportunity to review the original objectives in the light of the changed circumstances.*

- *Bank supervision arrangements should be realistic and budgets should be higher when projects are decentralized or spread over a wide area involving more than one implementing authority. Project design should take this into account.*

- *Covenants should not be imposed on authorities that do not have the legal power to carry out the commitment. Weak or open-ended conditionality should be avoided and objectives should not be conflicting.*

- *It is unwise to let local sub-national borrowers carry foreign exchange risk in unstable macroeconomic conditions, especially when their revenues are in local currency.*

Annex A. Basic Data Sheet

URBAN TRANSPORT PROJECT (LOAN 3885-RU)

Key Project Data *(amounts in US$ million)*

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Original commitment	329.0	247.6	75.2%
Total project cost	391.0	308.7	79.0%
Cancellation	-	-	-

Project Dates

	Original	*Actual*
Departure of Appraisal Mission	-	05/13/1994
Board approval	-	05/16/1995
Signing	-	10/06/1995
Effectiveness	09/30/1995	03/28/1996
Closing date	06/30/2001	12/31/2002

Staff Inputs (staff weeks)

	Actual/Latest Estimate	
	N° Staff weeks	*USUS('000)*
Identification/Preparation	-	
Appraisal/Negotiation	-	660
Supervision	-	-
ICR	-	1114
Total	-	1774

Note: Trust Fund contribution to project preparation was $391,730.00 and to project supervision $695,860.00 a total of $1,087,590.00

Mission Data

	Date (month/year)	No. of persons	Speciality (e.g. 2 Economists, 1 FMS, etc.)	Performance rating Implementation Progress	Development Objective
Identification/ Preparation	March 1992	4	TL – Sr. Operations Officer Water Specialist District Heating Institutions		
	June 1992	4	TL – Sr. Operations Officer Urban Transport Planner Mike Buckel R McGarry		
	December 1992	2	McGarry Municipal Finance Specialist		
	July 1993	5	TL – Sr. Operations Officer Transport Operations Spec. Transport Policy Spec. Municipal Finance Spec. Privatization Spec.		
	December 1993	2	TL – Financial Analyst Environment Specialist		
Appraisal/Negotiation	March 1994	2	TL – Financial Analyst Environment Specialist		
	May 1994	12	TL – Financial Analyst Transport Economist Transport Policy Specialist Environment Specialist Legal Counsel UPT Operations Specialist Procurement Specialist 2 Financial Analysts 3 Mechanical Engineers		
	October 1994	2	TL – Financial Analyst Transport Economist		
	December 1995	1	TL – Financial Analyst		
Supervision	June 1996	2	TL – Financial Analyst Vehicle Rehab. Spec.		
	November 1996	2	Transport Economist	S	S
	May 1997	3	TL – Transport Economist Infrastructure Specialist Environment Specialist	S	S
	November 1997	2	TL – Transport Economist Infrastructure Specialist	S	S
	February 1998	2	TL – Transport Economist Infrastructure Spec.	S	S
	May 1998	3	TL – Transport Economist Infrastructure Specialist Procurement Specialist	S	S
	November 1998	2	TL – Transport Economist Procurement Specialist	S	U
	March 1999	1	TL – Sr. Operations Officer		
	December 1999	1	TL – Sr. Operations Officer	U	U
	March 2000	2	TL – Sr. Operations Officer Procurement Specialist	S	U
	July 2000	4	TL – Sr. Operations Officer Transport Specialist Urban Specialist Procurement Specialist	S	U
	December 2000	4	TL – Sr. Operations Officer Transport Specialist Urban Specialist	S	S

	Date (month/year)	No. of persons	Speciality (e.g. 2 Economists, 1 FMS, etc.)	Performance rating Implementation Progress	Development Objective
			Procurement Specialist		
	June 2001	1	TL – Sr. Operations Officer	S	S
	July 2001	2	Transport Economist Urban Specialist		
	February 2002	2	TL – Sr. Operations Officer Transport Economist	S	S
	June 2002	3	TL – Sr. Operations Officer 2 Transport Economists	S	S
	October 2002	5	TL – Transport Economist Sr. Operations Officer 3 Transport Economists	S	S
ICR	February 2002	1	Urban Transport Spec.		
	Jun 2002	1	Urban Transport Spec.		

BRIDGE REHABILITATION PROJECT (3990-RU)

Key Project Data *(amounts in US$ million)*

	Appraisal estimate	*Actual or current estimate*	*Actual as % of appraisal estimate*
Original commitment	350.0	153.86	44.0%
Total project cost	466.20	224.29	48.11%
Cancellation	-	-	

Project Dates

	Original	*Actual*
Departure of Appraisal Mission	-	06/19/1995
Board approval	-	03/28/1996
Signing	-	05/22/1996
Effectiveness	07/21/1996	08/19/1996
Closing date	12/31/2001	08/31/2003

Staff Inputs (staff weeks)

	Actual/Latest Estimate	
	N° Staff weeks	*USUS('000)*
Identification/Preparation		
Appraisal/Negotiation	-	571.44
Supervision	-	899.04
Other		
Total	-	1470.48

Mission Data

	Date (month/year)	No. of persons	Specializations represented	Performance rating Implementation Progress	Development Objective
Identification/ Preparation	03/94	1	Highway engineer/TTL		
	05/94	1	Highway Engineer/TTL		
		1	Transport Economist		
		1	Research Assistant		
	06/94	1	Highway Engineer/TTL		
		1	Bridge Engineer		
		2	Transport Economist		
		1	Research Assistant		
	11/94	1	Highway Engineer/TTL		
		1	Transport Economist		
		2	Highway Engineer		
		1	Bridge Engineer		
		1	Research Assistant		
	03/95	1	Highway Engineer/TTL		
		1	Procurement Specialist		
		1	Transport Economist		
		1	Bridge Engineer		
		1	Research Assistant		
	05/95	1	Highway Engineer/TTL		
		1	Transport Economist		
Appraisal/Negotiation	07/95	1	Highway Engineer/TTL		
		1	Bridge Engineer		
		1	Transport Economist		
		1	Procurement Engineer		
		1	Environment Spec		
		2	Counsel		
		1	Research Assistant		
		1	ECAVP representative		
	10/95	1	Highway Engineer/TTL		
		1	Procurement Engineer		
		1	Construction Engineer		
		1	Transport Economist		
		1	Research Assistant		
	11/95	1	Transport Economist		
		1	Bridge Engineer		
	12/95	1	Transport Economist		
Supervision	04/96	1	Highway Engineer/TTL	S	S
		1	Construction Engineer		
		1	Research Assistant		
	06/96	1	Highway Engineer/TTL	S	S
		1	Research Assistant		
		1	Procurement Expert		
		1	Transport Economist		
		1	Geological Engineer		
		1	Bridge Engineer		
		1	Construction Expert		
		1	Infrastructure Engineer (RM)		
	09/96	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer		

	Date (month/year)	No. of persons	Specializations represented	Performance rating Implementation Progress	Development Objective
		1	Procurement Expert		
		1	Economist		
		1	Construction Expert		
		1	Environment Specialist		
		1	Research Assistant		
	02/97	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer		
		1	Procurement Specialist		
		1	Research Assistant		
		1	Infrastructure Engineer (RM)		
	06/97	1	Highway Engineer/TTL	S	S
		1	Procurement Specialist		
		2	Transport Economist		
		1	Bridge Engineer		
		1	Construction Engineer		
		1	Geological Specialist		
		1	Infrastructure Engineer (RM)		
		1	Research Assistant		
	09/97	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer		
		1	Geological Engineer		
		1	Construction Engineer		
		1	Procurement Specialist		
		1	Transport Economist		
		1	Org & Management Specialist		
		1	Construction Industry Specialist		
		1	Infrastructure Engineer (RM)		
		1	Research Assistant		
	03/98	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer		
		1	Geological Specialist		
		1	Procurement Specialist		
		1	Infrastructure Engineer (RM)		
		1	Research Assistant		
	06/98	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer		
		1	Construction Engineer		
		1	Infrastructure Engineer (RM)		
		1	Sector Manager		
	11/98	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer		
		1	Construction Engineer		
		1	Environment Specialist		
		1	Infrastructure Engineer (RM)		
		1	Road Safety Specialist		
		1	Research Assistant		
	03/99	1	Highway Engineer/TTL	U	U
		1	Bridge Engineer		
		1	Infrastructure Engineer (RM)		
		1	Procurement Specialist		
		1	Environment Specialist		
		1	Research Assistant		

	Date (month/year)	No. of persons	Specializations represented	Performance rating Implementation Progress	Development Objective
	07/99	1	Highway Engineer/TTL	U	U
		1	Bridge Engineer		
		1	Procurement Specialist		
		1	Infrastructure Engineer (RM)		
		1	Counsel		
		1	Transport Specialist		
	09/99	1	Highway Engineer/TTL	U	U
		1	Bridge Engineer		
		1	Procurement Specialist		
		1	Environment Specialist		
		1	Transport Specialist		
		1	Highway Engineer		
	12/99	1	Highway Engineer/TTL	U	U
		1	Bridge Engineer		
		1	Procurement Specialist		
		1	Environment Specialist		
		1	Infrastructure Engineer (RM)		
		1	Financial Specialist		
	09/00	1	Highway Engineer/TTL	S	S
		1	Bridge Engineer/TTL		
		1	Procurement Specialist		
		1	Financial Specialist (RM)		
		1	Infrastructure Engineer (RM)		
		1	Sector Manager		
	12/00	1	Operations Specialist/TTL		
		1	Infrastructure Engineer (RM)		
		1	Highway Engineer		
	02/01	1	Highway Engineer	S	S
	07/01	1	Bridge Engineer	S	S
	02/02	1	Highway Engineer	S	S
		1	Procurement Specialist (RM)		
	06/02	1	Operations Specialist/TTL	S	S
		1	Transport Economist		
		1	Bridge Engineer		
	11/02	1	Bridge Engineer	S	S
		1	Sr. Operations Officer		
	03/03	1	Bridge Engineer	S	S
		1	Sr. Transport Specialist		
ICR	02/2002	1	Transport Specialist		
	06/2002	1	Transport Specialist		
	07/2003	1	Bridge Engineer		