IMPLEMENTATION COMPLETION AND RESULTS REPORT
(IBRD-44370)

ON A

LOAN

IN THE AMOUNT OF US$100 MILLION

TO THE

REPUBLIC OF KAZAKHSTAN

FOR A

ROAD TRANSPORT SECTOR RESTRUCTURING PROJECT

July 31, 2008

Sustainable Development Department
Central Asia Country Management Unit
Europe Central Asia Region
CURRENCY EQUIVALENTS

(Exchange Rate Effective June 6, 2008)

Currency Unit = Kazakhstan Tenge (KZT)

KZT 1.00 = US$0.0083
US$1.00 = KZT 120.54

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ADB - Asian Development Bank
BIP - Board of Investment Projects
CAS - Country Assistance Strategy
CBA - Cost-benefit Analysis
CTID - Committee for Transport Infrastructure Development
DOR - Department of Roads
EBRD - European Bank for Reconstruction and Development
EMP - Environmental Management Plan
EN - European Norms
ERR - Economic Rate of Return
EU - European Union
FSU - Former Soviet Union
GNP - Gross National Product
HDM 4 - Highway Design and Maintenance Model, Version 4
IBRD - International Bank for Reconstruction and Development
ICR - Implementation Completion Report
IFIs - International Financing Institutions
IsDB - Islamic Development Bank
ISO - International Organization for Standardization
ISR - Implementation Status and Results Report
LOA - Loan Agreement
M&E - Monitoring and Evaluation
MOTC - Ministry of Transport and Communications
NPV - Net Present Value
PAD - Project Appraisal Document
PDO - Project Development Objective
PSR - Project Status Report
QAG - Quality Assurance Group
RC - Roads Committee
RSRE - Republican State Road Enterprise
RUC - Road User Charges
TA - Technical Assistance
TACIS - Technical Assistance for the Commonwealth of Independent States
TOR - Terms of Reference
TRACECA - Transport Corridor Europe Caucasus Asia
USSR - Union of Soviet Socialist Republics

Vice President: Shigeo Katsu, ECAVP
Country Director: Annette Dixon, ECCU8
Sector Manager: Motoo Konishi, ECSSD
Project Team Leader/ICR Team Leader: Henry G. R. Kerali, ECSSD
ICR Primary Author: Antti Talvitie (Consultant)
KAZAKHSTAN
Road Transport Sector Restructuring Project

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A. Basic Information

Country: Kazakhstan  Project Name: Road Transport Restructuring Project

Project ID: P008499  L/C/TF Number(s): IBRD-44370

ICR Date: 06/29/2008  ICR Type: Core ICR

Lending Instrument: SIL  Borrower: REPUBLIC OF KAZAKHSTAN

Original Total Commitment: USD 100.0M  Disbursed Amount: USD 95.6M

Environmental Category: B

Implementing Agencies:
Committee for Transport Infrastructure Development

Cofinanciers and Other External Partners:

B. Key Dates

<table>
<thead>
<tr>
<th>Process</th>
<th>Date</th>
<th>Process</th>
<th>Original Date</th>
<th>Revised / Actual Date(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept Review</td>
<td>06/25/1996</td>
<td>Effectiveness</td>
<td>01/14/2000</td>
<td>01/14/2000</td>
</tr>
<tr>
<td>Appraisal</td>
<td>06/28/1998</td>
<td>Restructuring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes: Satisfactory
Risk to Development Outcome: Moderate
Bank Performance: Satisfactory
Borrower Performance: Satisfactory

C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)

<table>
<thead>
<tr>
<th>Bank</th>
<th>Ratings</th>
<th>Borrower</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality at Entry</td>
<td>Moderately Satisfactory</td>
<td>Government:</td>
<td>Moderately Satisfactory</td>
</tr>
<tr>
<td>Quality of Supervision</td>
<td>Satisfactory</td>
<td>Implementing Agency/Agencies:</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>Overall Bank Performance</td>
<td>Satisfactory</td>
<td>Overall Borrower Performance:</td>
<td>Satisfactory</td>
</tr>
</tbody>
</table>

C.3 Quality at Entry and Implementation Performance Indicators

<table>
<thead>
<tr>
<th>Implementation Performance</th>
<th>Indicators</th>
<th>QAG Assessments (if any)</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential Problem Project</td>
<td>Yes</td>
<td>Quality at Entry</td>
<td>None</td>
</tr>
</tbody>
</table>
at any time (Yes/No):  (QEA):  
Problem Project at any time (Yes/No):  Yes Quality of Supervision (QSA):  None  
DO rating before Closing/Inactive status:  Satisfactory  

D. Sector and Theme Codes

<table>
<thead>
<tr>
<th>Sector Code (as % of total Bank financing)</th>
<th>Original</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central government administration</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Roads and highways</td>
<td>97</td>
<td>97</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Theme Code (Primary/Secondary)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to urban services and housing</td>
<td>Secondary</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>Infrastructure services for private sector development</td>
<td>Primary</td>
<td>Primary</td>
</tr>
<tr>
<td>Regulation and competition policy</td>
<td>Secondary</td>
<td>Secondary</td>
</tr>
<tr>
<td>Rural services and infrastructure</td>
<td>Secondary</td>
<td>Secondary</td>
</tr>
</tbody>
</table>

E. Bank Staff

<table>
<thead>
<tr>
<th>Positions</th>
<th>At ICR</th>
<th>At Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vice President:</td>
<td>Shigeo Katsu</td>
<td>Johannes F. Linn</td>
</tr>
<tr>
<td>Country Director:</td>
<td>Annette Dixon</td>
<td>Kiyoshi Kodera</td>
</tr>
<tr>
<td>Sector Manager:</td>
<td>Motoo Konishi</td>
<td>Eva Molnar</td>
</tr>
<tr>
<td>Project Team Leader:</td>
<td>Henry G. R. Kerali</td>
<td>Jean-Charles Crochet</td>
</tr>
<tr>
<td>ICR Team Leader:</td>
<td>Henry G. R. Kerali</td>
<td></td>
</tr>
<tr>
<td>ICR Primary Author:</td>
<td>Antti P. Talvitie</td>
<td></td>
</tr>
</tbody>
</table>

F. Results Framework Analysis

Project Development Objectives (from Project Appraisal Document)
The main development objective of the project is to achieve more efficient road and road transport sub-sectors in Kazakhstan mainly through:

(i) improvement of the Almaty-Astana national road;
(ii) development of routine road maintenance capability on the Almaty-Karaganda section of the Almaty-Astana road;
(iii) improvement of the institutional capability of the Kazakh road administration (the Roads Committee) and local road contractors; and
(iv) improvement of road transport regulations and road traffic safety.
Key development outcome/impact indicators:

(i) lower cost of road transport on Kazakhstan's main north-south national (Almaty-Astana) road;
(ii) increased capability of the RC to plan, budget, implement, and monitor road expenditures;
(iii) increased capability of the Kazakh road construction and maintenance industry;
(iv) increased efficiency of Kazakhstan's road transport sector; and
(v) reduced number and seriousness of accidents on the Almaty-Karaganda section of the Almaty-Astana road.

Revised Project Development Objectives (as approved by original approving authority)

(a) PDO Indicator(s)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline Value</th>
<th>Original Target Values (from approval documents)</th>
<th>Formally Revised Target Values</th>
<th>Actual Value Achieved at Completion or Target Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator 1:</td>
<td>Cost of road transport on Almaty-Astana road sections lower on average by 20% (by End Of Project).</td>
<td>80%</td>
<td>About 60%</td>
<td></td>
</tr>
<tr>
<td>Value quantitative or Qualitative</td>
<td>100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date achieved</td>
<td>12/31/1999</td>
<td>06/30/2006</td>
<td>12/31/2007</td>
<td></td>
</tr>
<tr>
<td>Comments (incl. % achievement)</td>
<td>The PDO was achieved. The cost of road transport (to users) has declined about 40%, including time and money. The travel time in the Northern section decreased from 3h30m to 2h30m (-30%) and in the Southern section from 7h to 5h30m (-22%).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator 2:</td>
<td>Budgets for national and Oblast roads are justified by sound analyses, and 75% of all projects have ERRs of at least 15%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value quantitative or Qualitative</td>
<td>40% (retrospective estimate)</td>
<td>75%</td>
<td>&gt;75%</td>
<td></td>
</tr>
<tr>
<td>Date achieved</td>
<td>12/31/1999</td>
<td>06/30/2006</td>
<td>12/31/2007</td>
<td></td>
</tr>
<tr>
<td>Comments (incl. % achievement)</td>
<td>The PDO was achieved. The road budget increased from US$165m in 2002 to 1120m in 2007. The budget analyses are based on professional engineering judgment. Based on review it was concluded that road investments undergo thorough scrutiny and have a high ERR.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator 3:</td>
<td>Reduction in the total number of road accidents and fatalities between Almaty and Karaganda by 20% in proportion to traffic (by EOP)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value quantitative or Qualitative</td>
<td>100%</td>
<td>80%</td>
<td>77%</td>
<td></td>
</tr>
<tr>
<td>Date achieved</td>
<td>12/31/1999</td>
<td>06/30/2006</td>
<td>12/31/2007</td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td>The PDO was achieved. The accident rate (fatal and injury accidents/ADT)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(incl. % achievement) reduced 20% in the Northern section and 27% in the Southern section. However, the total number of fatal and injury accidents doubled—but the traffic tripled.

(b) Intermediate Outcome Indicator(s)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Baseline Value</th>
<th>Original Target Values (from approval documents)</th>
<th>Formally Revised Target Values</th>
<th>Actual Value Achieved at Completion or Target Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator 1</td>
<td>Selected road sections are brought back to a high level of riding quality and structural soundness, and to satisfactory safety level.</td>
<td>0km rehabilitated</td>
<td>About 500 km rehabilitation</td>
<td>467.8 km rehabilitated</td>
</tr>
<tr>
<td>Value (quantitative or Qualitative)</td>
<td>Date achieved</td>
<td>12/31/1999</td>
<td>12/31/2004</td>
<td>12/31/2005</td>
</tr>
<tr>
<td>Comments (incl. % achievement)</td>
<td>The objective was achieved. Selected road sections were rehabilitated as planned. One optional section (the Karaganda &quot;pass-through&quot;) was canceled because of design issues and cost increase.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator 2</td>
<td>Sound systems established for planning/budgeting routine maintenance and supervision of its execution</td>
<td>Routine maintenance was carried out by labor force</td>
<td>Routine maintenance by contract</td>
<td>100% routine maintenance by contract</td>
</tr>
<tr>
<td>Value (quantitative or Qualitative)</td>
<td>Date achieved</td>
<td>12/31/1999</td>
<td>12/31/2004</td>
<td>12/29/2006</td>
</tr>
<tr>
<td>Comments (incl. % achievement)</td>
<td>The objective was fully achieved.</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>

G. Ratings of Project Performance in ISRs

<table>
<thead>
<tr>
<th>No.</th>
<th>Date ISR Archived</th>
<th>DO</th>
<th>IP</th>
<th>Actual Disbursements (USD millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>07/02/1999</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>12/27/1999</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>06/07/2000</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>2.81</td>
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<tr>
<td>4</td>
<td>08/03/2000</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>6.72</td>
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<tr>
<td>5</td>
<td>04/18/2001</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>18.65</td>
</tr>
<tr>
<td>6</td>
<td>11/28/2001</td>
<td>Satisfactory</td>
<td>Unsatisfactory</td>
<td>27.46</td>
</tr>
<tr>
<td>7</td>
<td>05/13/2002</td>
<td>Satisfactory</td>
<td>Unsatisfactory</td>
<td>48.52</td>
</tr>
<tr>
<td>8</td>
<td>12/20/2002</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>72.66</td>
</tr>
<tr>
<td>9</td>
<td>06/26/2003</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>82.72</td>
</tr>
<tr>
<td>10</td>
<td>12/30/2003</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>90.19</td>
</tr>
<tr>
<td>11</td>
<td>06/25/2004</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>90.19</td>
</tr>
<tr>
<td>12</td>
<td>12/17/2004</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>90.19</td>
</tr>
<tr>
<td>13</td>
<td>06/20/2005</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>90.19</td>
</tr>
<tr>
<td></td>
<td>Date</td>
<td>Rating1</td>
<td>Rating2</td>
<td>Score</td>
</tr>
<tr>
<td>---</td>
<td>------------</td>
<td>-----------</td>
<td>-----------</td>
<td>--------</td>
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<tr>
<td>14</td>
<td>12/24/2005</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>90.19</td>
</tr>
<tr>
<td>15</td>
<td>06/27/2006</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>92.41</td>
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<td>16</td>
<td>03/18/2007</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>93.88</td>
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<tr>
<td>17</td>
<td>12/26/2007</td>
<td>Satisfactory</td>
<td>Satisfactory</td>
<td>95.60</td>
</tr>
</tbody>
</table>

**H. Restructuring (if any)**
Not Applicable

**I. Disbursement Profile**

![Graph showing disbursement profile]

**US $ Millions**
1. Project Context, Development Objectives and Design

1.1 Context at Appraisal

Transport demand and supply. Kazakhstan is endowed with substantial but underdeveloped natural resources, consequently, her economic base remains narrow. At the time of project appraisal in 1998 the Kazakhstan economy had experienced a significant decline and hence neglected her infrastructure for several years. The Gross National Product (GNP) per capita was a mere US$1220 for the (declining) 16.5 million people occupying the vast territory of 2,720,000 sq. km (population density of only 6 persons/sq. km). There were reasons to believe that the economy had bottomed out in 1997 as a result of restructuring it toward greater openness and the emergence of demand-driven markets. Because of location, vastness of territory, and unique geographic features, Kazakhstan’s economy has relied heavily on transport. An efficient transport sector was an essential element for the development and growth of domestic and international trade, and for private sector economic activities. The disappearance of trade patterns associated with the centralized system of production and distribution had resulted, as in all the former Soviet Union (FSU) countries, in a dramatic drop in the demand for transport services, especially for rail, and it was not expected to revert to the high levels of the late 1980s in the foreseeable future.

Nonetheless, as a result of expected economic growth based on natural resources, over the decade following the appraisal of the project, demand for transport services was expected to experience a rapid shift towards road transport. Kazakhstan’s road transport system was little prepared to cope with the expected substantial increases in demand. There had been historical underinvestment in roads, and furthermore, the existing road network was of a low standard and unsafe. Although a large part of the road network was paved, it was badly deteriorated, and a large percentage of the rural population did not have access to all-weather roads.

Transport policy outlook and immediate priorities. The institutional framework for the transport sector was in flux during project preparation, and there was much instability about governance in general. The Government had recently restructured the road administration. The Department of Roads (DOR, later renamed the Roads Committee-RC) was established as a small policy-making unit in the Ministry of Transport and Communications (MOTC), and created a Board of Investment Projects (BIP) to tackle the expected demand-supply gap in the sector. As a result, the Government began to consider a major transport investment and improvement program.

The Government also separated the road maintenance and construction industry from road administration and either corporatized or privatized it, and resolved that all periodic maintenance and rehabilitation works were awarded competitively. The Government also decided to focus the available road sector funds on routine and periodic maintenance. However, there were no well articulated medium or long term programs at the national, oblast (regional) or local levels.
In order to jump start the transport sector to meet the emerging demands, a road improvement program focusing on the key corridors\(^1\) was considered to be the highest priority. This was to include institutional support to the roads administration to shore up planning, budgeting, and implementation systems, and procedures that would ensure that resources were used efficiently. Training of staff, to begin changing old attitudes and behavior patterns, was also considered to be important.

**Investment strategy.** Despite its vital importance to Kazakhstan's economy, most of the country's road network in all functional classes was in poor condition and deteriorating. This was primarily the result of the severe fiscal constraints, the inadequacy of road funding (US$100 million or less annually) for the national and regional roads—less than a third of the required amount—and, for numerous reasons, the low productivity of the road works. In addition, as in most other FSU countries, the level and structure of road user charges (RUCs) were significantly below the costs imposed on the road network by individual vehicles, especially the heavy vehicles. At the time of Appraisal, among the Government’s top priorities in the transport sector investment strategy, was working with International Financing Institutions (IFIs) - International Bank for Reconstruction and Development (IBRD), Asian Development Bank (ADB), and Islamic Development Bank (IsDB) - to develop and fund road modernization programs in key corridors, improving cost recovery, and securing steady funding for maintenance of transnational and national roads.

**The Bank had little prior experience in Kazakhstan transport sector.** The Bank undertook a Kazakhstan Transport Sector Review in 1996 (Report No. 15020-KZ, September 1996) and had begun financing an Urban Transport project in 1994. ADB had a slowly progressing road rehabilitation project under implementation, and IsDB was preparing a road rehabilitation project. There was little experiential knowledge of how the road sector worked in Kazakhstan. The Sector Review provided recommendations for action and shaped the approach for the Bank’s road sector assistance. Discussions between the Bank and the Government during preparation were structured along the lines of the report’s recommendations, and confirmed the major areas to be supported by the Bank, through which the eventual PDO was to be achieved: (i) improvement of road conditions (the Almaty-Astana national road); (ii) strengthening of routine road maintenance capability along the Almaty-Astana road; (iii) improvement of the institutional capacity of the Kazakhstan road administration and local road contractors; and (iv) improvement of road transport regulations and road traffic safety.

**1.2 Original Project Development Objectives (PDO) and Key Indicators (as approved)**

The project’s development objective was to **achieve more efficient road and road transport sub-sectors in Kazakhstan** mainly through the areas identified above:

\(^1\)North-south (Almaty to Astana, the new capital) and east-west (from the Chinese border via Almaty and Tashkent to the Russian border).
The PDO is identical in the Loan Agreement (LOA) and the Project Appraisal Document (PAD); the items specifying how the PDO were to be achieved are summarized below. Annex 2 of the PAD and the LOA give a detailed list of activities (outputs) to be undertaken under the following headings:

1. Rehabilitation of National Roads (about 600 km)\(^2\)
2. Strengthening of Routine Road Maintenance (through provision of equipment and parts)
3. Institutional Strengthening (itemized list of five tasks)
4. Road Transport Laws, Regulations and Policies (itemized list of five tasks)
5. Improvement in Road Safety (itemized list of seven tasks)
6. Project Management

Key development outcome/impact indicators were:

(i) lower cost of road transport on Kazakhstan's main north-south national (Almaty-Astana) road;
(ii) increased capability of the Roads Committee to plan, budget, implement, and monitor road expenditures;
(iii) increased capability of the Kazakhstan road construction and maintenance industry;
(iv) increased efficiency of Kazakhstan's road transport sector; and
(v) reduced number and seriousness of accidents on the Almaty-Karaganda section of the Almaty-Astana road.

These indicators basically addressed items (1) and (5) above, for which quantifiable indicators were possible. Indicators for items 2, 3, 4, and 6 consisted essentially of reports documenting progress, and are based on the Project Status Report (PSR, renamed Implementation Status and Results Report, ISR). The indicators are worded slightly differently in PAD Annex 1, but are essentially the same.

1.3 Revised PDO (as approved by original approving authority) and Key Indicators, and reasons/justification

The PDO and the key indicators were not modified.

1.4 Main Beneficiaries

The beneficiaries of this Project were the individuals and enterprises that are users of the national road network benefiting directly from lower vehicle operating costs. These beneficiaries included the shippers within Kazakhstan, and those exporting or importing

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\(^2\) In Annex 2, the PAD lists 470 km road rehabilitation as the output and construction or rehabilitation of (additional) 100 km (between Astana and Karaganda) subject to “further discussions with the government … [and to be] undertaken only if the ongoing feasibility studies show they would be justified.” The LOA does not have this caveat for the 100 km component (section 1.5 in the ICR; para 2 in PART A of the LOA). As it turned out this output was canceled for design reasons, but the LOA was not changed.
goods, and road users as passenger or operators of passenger vehicles. Consumers and producers were also expected to benefit from lower transport costs. Government institutions, such as MOTC, would benefit from the introduction of improved road administration and management practices, and transport policies and regulations; the traffic police, and public health organizations, which would see a reduction in the number of road accident victims requiring treatment; and the road transport industry, Kazakhstan road consulting, maintenance and construction firms, would benefit from modern design practices and a stable road budget and road work schedule. The beneficiaries did not change during the project.

1.5 Original Components (as approved)

(i) Rehabilitation of Priority Sections of National Roads – (US$123.2 million), including: (a) Civil works for the rehabilitation of several priority sections, including bridges and limited improvements in road geometry, of the national road network, totaling about 500 km, located along the country's principal North-South transport corridor, the Almaty-Karaganda-Astana road. The subcomponents were: (i) Rehabilitation of the 215 km-long Akchatau-Karaganda section; (ii) Rehabilitation of sections of road between Almaty and Gulshad, totaling 255 km; (iii) Bridge reconstruction or replacement; (iv) Possible construction of a bypass at Shemolgan, the “Karaganda throughput” the relocation of the Kurty Bridge and the rehabilitation of sections of roads between Karaganda and Astana totaling about 100 km. (b) Consultant services for supervision of the road works, training, technical assistance to the BIP, and those engineering and procurement services for the Project not funded by either the PPF advance or from local resources.

(ii) Strengthening of Routine Road Maintenance – (US$5.8 million) to improve maintenance capability of DOR and the (corporatized) Oblast road maintenance companies on the Almaty-Astana road. Contingent on the establishment of maintenance planning and implementation processes satisfactory to the Bank, the component would provide equipment and spare parts to complement training provided under the on-going ADB project.

(iii) Institutional Strengthening of the Department of Roads and Development of the Kazakhstan Road Maintenance and Construction Industry – (US$1.7 million), including: (a) establishment of planning, budgeting and monitoring procedures for the national and regional road network, based on the assessment of road condition and economic analysis of alternative solutions, as well as the training of staff for the preparation of budgets; (b) establishment of procedures for the supervision of road works carried out under contracts on national and regional roads, and training of staff; (c) preparation of training programs for Kazakhstan contractors in bid preparation, contract administration, cost control, management, and quality control; and (d) strengthening of DOR's training capability in the above three areas.

(iv) Improvement in Road Transport Policies and Regulations and in their Implementation (US$0.7 million) including: (a) development of laws and
regulations pertinent to road transport; (b) strengthening of enforcement agencies and improvement of public information; (c) improvement of road data systems; and (d) development of a competitive market for the provision of inter-city and rural passenger transport services, including the development of independent bus stations. The component also included provision of consultancy services and training.

(v) Improvement in Road Safety – (US$1.0 million), including: (a) setting up of a temporary road safety task force and the preparation of a preliminary National Road Safety Action Plan and Local Safety Plans with monitorable objectives; (b) improvements in road accident data for identifying black spots; (c) development of road safety research in Kazakhstan, including liaisons between Kazakhstan institutes and international road safety institutes; (d) improved enforcement of road safety rules and regulations, including the provision of appropriate equipment; (e) development of a better understanding of road safety problems; and (f) review of the existing emergency services. The component included the provision of consultancy services, training, study tours, and equipment.

(vi) Project Management – (US$.2 million) for the incremental project management costs, including office space, equipment and supplies, auditing services, training, communication, and travel.

1.6 Revised Components
The components were not revised. However, as noted earlier one contract in the first project component, the ‘Karaganda through-pass’, item (iv) in Section 1.5(1) was canceled for design reasons.

1.7 Other significant changes
Because of accelerated deterioration of road segments under very heavy traffic, several of the road segments had to be redesigned to meet the expected traffic load and design standard of the road class.

A loan covenant required increased road user charges to gradually cover 100 percent of the road maintenance costs due to road use. In the first year of implementation, the Government indicated that the increase in road user charges was not warranted and that it would cover the agreed road funding targets from the general tax revenues.

The loan was extended two times for a total of three years, mostly to complete the institutional components (components 3-5) of the loan.
2. Key Factors Affecting Implementation and Outcomes

2.1 Project Preparation, Design and Quality at Entry

*Lessons taken into account.* As mentioned, this was the Bank’s first project in the Kazakhstan road sector. The project design reflected the Bank’s Country Assistance Strategy (CAS) strategy in Kazakhstan and lessons from road projects elsewhere in the region. More importantly, the design reflected the Bank’s change of emphasis from simply funding road construction and maintenance of the 1970s and 1980s to institutional development. The guiding principles for the Bank’s road projects in the 1990s had to do with sector governance frameworks, sustainability through greater funding and coverage of road costs from road user charges, through (environmental) quality assurance of works, inclusion of road users and affected interests’ viewpoints in setting priorities and in road management, and attention to competitive procurement and private sector development both in consultancy and implementation.

The project design embraced these broad, institutional concerns. This was not without risks and drawbacks. Introduction of new concepts for road administration and management and for road safety, found useful in the developed countries, in the midst of badly deteriorated infrastructure and governance turmoil, is a difficult and lengthy undertaking. It can easily overload a fledgling domestic sector capacity and result in a lack of interest to institutional development when the practice had emphasized “material” aspects of building and occasionally maintaining roads—often with outdated standards and equipment. Experiential knowledge about institutional issues, and creating interest for it, can only be developed gradually during the change process itself.

*Risks.* The risks, outlined above, were not ignored in project design, although concrete measures to deal with intangible issues turned out to be difficult. Substantial risks were anticipated in the Government’s unwillingness to adopt new laws, regulations and enforcement mechanisms, and the lack of cooperation between different ministries. Several others were identified as modest risks: (i) insufficient funding; (ii) institutional inertia to put newly learned concepts and capabilities to work; (iii) disruptive reorganization within Government; and (iv) disappointing use of technical assistance (as was being experienced in the ADB-financed road maintenance component). On the other hand, and somewhat in contradiction to the above, (un)willingness of management and staff to learn and implement and use new procedures was rated as a negligible risk. Mitigation measures included the customary: (i) effective consultative process between the road users and the Government, (ii) continued dialogue between the Bank and the Government, (iii) dissemination of best practice information, (iv) monitoring of road sector performance, and (v) Technical Assistance (TA) coordination with other IFIs.

Only six months after Effectiveness the risks materialized and were all rated ‘substantial’, with the exception of willingness to learn and implement new activities, which was upgraded to ‘modest’ from negligible.
**Quality at Entry.** There was no Quality Assurance Group (QAG) quality at entry review of the project. The project experience confirms that this first transport sector project in Kazakhstan attempted too much and had too many institutional development components, focusing on details for which there was little experiential knowledge and capacity in Kazakhstan. There is little doubt that wide-ranging and far-reaching institutional restructuring and capacity building was necessary; some of it had already been initiated before the project start. Many of the tasks were logically interrelated making concurrent change seem attractive. But to undertake everything simultaneously made the restructuring task seem even harder, inviting reform-fatigue. The change in key management personnel, the lack continuity and consequent lack of information and understanding of the client’s capacity and intentions for change made the institution-building components too ambitious. For example, in institutional strengthening, “…developing planning, budgeting and monitoring procedures for the national and regional road network, based on the assessment of road condition and economic analysis of alternative solutions…” (PAD p. 24) requires at least a rudimentary transport policy, a medium term plan, a road condition data register, or at least capacity and equipment for data collection, and use of quantitative information in programming of projects. All of this had to be rethought with the new staff where there was little or no experiential knowledge, and required (disruptive) reorganization of the road administration. On the regulatory side, an early introduction of new “…laws and regulations pertinent to road transport; and, [strengthening] of enforcement agencies and improvement of public information…” [PAD p. 24] was also an extremely complicated and challenging task involving many interests. A gradual approach through amendments to current laws and regulations would have been more appropriate.

On the other hand, many aspects of the project were appropriate and within the experience and understanding of the client, including: the project’s road works in one of the country’s most important transport corridors; adoption of new, contract based routine maintenance procedures with new equipment; recasting the supervision of road works under contracts, training of staff in their application and in contract administration; and training Kazakhstan contractors in bid preparation, cost control, management, and quality control.

In sum, the road works—95 per cent of the loan—and the consultancies relating to the implementation of the works were well thought-out and were also implemented with motivation. Their quality of entry was good. The institutional component dealt with good issues, but there is a question about the right entry point and timing to address them. Experience elsewhere has shown that the policy, planning, road data collection, and road laws and regulations should be started slowly, and cannot be completed in one project, let alone in the first one. However, as mentioned in the Lessons section, at the time of project preparation, Bank management regarded infrastructure as a sunset activity and if an infrastructure project were to be approved, its justification had to rest on governance reform and restructuring of the organization and its operating practices. This ethos makes understandable the institution development component of the loan, which in retrospect was too ambitious and risky at the start.
2.2 Implementation

**Implementation Schedule of the Road Works.** The road works started briskly and nine of the ten road rehabilitation contracts were signed and started within six months from Effectiveness. Delays and cost increases were experienced in the execution of most contracts. The delays derived from outdated equipment or the lack of equipment, inexperience of local (sub)contractors, and uncertainties about the detailed engineering designs. The cost increases—in one case 50 per cent—were caused by two main factors: worldwide increase in the bitumen price, and variation orders for the redesign (of five of the nine contracts) of badly deteriorated roads under unexpectedly heavy truck traffic. The redesign also occasioned disputes and contract increases with the foreign supervision consultants, which eventually were resolved. Nonetheless, despite all the changes, intermittent disarray and inexperience in modern contracting, the road works were completed before the original closing date.

Although the bid prices were lower than the engineering estimates, the sum of the cost increases was higher than the available loan proceeds, including contingencies. To close the financing gap, a reallocation of funds from the TA component was contemplated. Somewhat fortuitously, however, it had been earlier decided to cancel one contract in the Astana-Karaganda segment, the ‘Karaganda through-pass’, for design reasons. With the cancellation no reallocation was necessary (as discussed in sections 1.2, 1.5, and 1.6).

Early signs of deterioration developed in one of the contract segments (Saryshagan – Burubaital). The contractor failed to do the remedial works and the contract was terminated. A consultant was contracted to assess the required remedial works to be carried out, and estimated it at approximately US$3 million. However, the project closed before the contract for the remedial works was completed by another contractor\(^3\), and are now being undertaken at Government expense.

**Implementation of Routine Maintenance.** The procurement of equipment to improve routine maintenance, which was contingent on the establishment of satisfactory routine maintenance planning and implementation processes, prepared under ADB consultancy, were found to be incompatible with efficient (winter) maintenance operations. Much work was required in terms of division of responsibility between the Roads Committee and the Oblast branches of the Republican State Road Enterprise (RSRE, or Kazakhvotodor), and the work procedures and standards before acceptance for procurement and disbursement could be made. The lack of progress in the routine maintenance component frustrated intensely the Bank supervision missions and, at one point, the Bank suggested canceling the entire component. Eventually, a pilot plan for

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\(^3\) It is normal in Bank supported projects that the retention monies (5-10%) are subtracted from the invoices and the accumulated retention is returned to the contractor at the conclusion of the warranty period—or used to pay for the remedial works. The retention monies are subtracted from the Government’s counterpart funds while the Bank’s share is paid in full. In this way the project can be closed before the remedial works are completed.
one maintenance depot was developed and implemented that incorporated a better contractual and technical approach before scaling it up throughout the maintenance organization. At long last a much improved maintenance plan evolved and the component was completed satisfactorily.

**Most Institutional Strengthening Funded by the Government.** The consultancies for the procedures for the supervision of road works, training of staff and preparation of training programs for Kazakhstan contractors in bid preparation, contract administration, cost control, management, and quality control were done promptly and proved to be of useful service during the project.

However, the institutional strengthening tasks and the road safety component experienced delays, and after initial enthusiasm and support from MOTC and the preparation of Terms of Reference (TORs), the Government decided not to use loan monies for the remaining technical assistance tasks. The Government proposed instead to cancel the rest of the institutional and road safety component from the loan, but agreed to pay for these TA tasks from the state budget, to be carried out by local consultants, and from the concurrent European Union (EU) Transport Corridor Europe Caucasus Asia (TRACECA)/ Technical Assistance for the Commonwealth of Independent States (TACIS) programs on the road laws and road safety regulations. The Bank, initially suspicious, negotiated a *modus vivendi* according to which the TORs would require the Bank’s ‘no objection’ and the Bank team would supervise them as if the Bank financed them. The use of local consultants and Bank supervision turned out to be a good compromise and perhaps the only way to complete the institutional component.

**Risk Status.** The achievement of the PDO was never at risk. However, due to unsatisfactory progress in the TA components, the implementation progress was rated at risk from late 2001 until government financing of the TA components was secured a year later.

**2.3 Monitoring and Evaluation (M&E) Design, Implementation and Utilization**

The Project was monitored through a limited number of output and outcome indicators that could be measured using existing data collection mechanisms, such as traffic counts, or easily organized data collection activity. The values for the indicators were provided by the RC during the supervision missions. The output indicators were complemented with the more detailed reports provided by RC on the progress of the road components. Overall the indicators have allowed the confirmation of the achievement of the PDO. The values of the indicators are reported in Part F of the Summary Data Sheet at the beginning of this Implementation Completion Report (ICR).

The outcome indicator on road user costs in the corridor shows the extent to which rehabilitation of the Astana-Almaty corridor has improved the road user service, and the Economic Rate of Returns (ERRs), embodying both the traffic volumes and the improvements, and reflects the increase in economic activity and mobility of the population along the corridor. The reduction in accident rates shows the extent to which the Project has contributed to improved road safety in the corridor. These indicators were
collected from traffic counts, the benefit-cost analysis, and the reports issued by the Traffic Police.

The output indicators were a mixture of numerical indicators and reports. Those related to the progress in the road works were based on the monthly progress reports by the supervision teams. The institutional capacity strengthening was measured through the completion of the training of the Oblast staff, and restructuring of the maintenance activities leading to the acquisition of maintenance equipment.

The choice of indicators was reasonable. They allowed adequate measurement of the level of achievement of the PDO. In hindsight, however, the project’s Monitoring and Evaluation (M&E) was too parsimonious. It could have been improved with the inclusion of more specific indicators (such as a measure of transport tariffs along the corridor, road condition, increased allocation of resources to maintenance, and reduction of truck overloading incidents) to provide a stronger focus on outcomes. The indicators relating to the institutional strengthening actions could also have been enhanced through variables reflecting improvements in specific areas (such as Information Security Office (ISO) certification of contractors, use of a road management system in planning and programming, and the number of responsive bids by Kazakhstan contractors to replace “sound analysis” and “sound systems” in place). Nonetheless, the Bank supervision missions exchanged views with the Roads Committee and Oblast highway authorities (as described in the Aide Memoirs) to provide an assessment of institutional processes and capacities related to the policies being partially supported or supervised under the project.

The RC and the Oblasts should also have adopted systematic road condition measurements to supplement the twice yearly visual inspections. Even though the visual inspection system, conducted by a trained engineer, who also is responsible for proposing and planning actions on his road segment⁴, is valuable in terms of local knowledge and historical engineering knowledge about the road and adequate, and perhaps consistent with the level of computerization in the RC Oblast road administration, it cannot replace mechanized road condition measurements, registered in a road data system with a geographic referencing system. The development of such data systems, as was prescribed in one of the TORs for technical assistance, would have been consistent with the project objectives and underpin engineering-economic analyses and prioritizing of road improvements.

2.4 Safeguard and Fiduciary Compliance

Environment and Social. This was a Category B project. There was no land acquisition, the Project's main negative impacts were limited to the road works (from the construction equipment, the asphalt mixing plants, quarries, erosion and run-offs, traffic safety at construction sites, etc.). The Environmental Management Plan (EMP) was prepared and included in the contract documents as part of the final engineering. The

⁴ In the Oblasts, each road segment is assigned a responsible engineer who collects the road data information, makes recommendations for improvements, and is an ‘advocate’ for the road’s condition.
contractors were also required to employ environmentally sound work methods and equipment, all of which were monitored by the supervision engineers. Overall, the project had positive impact on the environment through improved road condition resulting in less wear and tear on the vehicles, less pollution, less dust, and a more appealing appearance.

**Participatory approach.** The corridor connects important cities and serves primarily long distance traffic (see map). Lacking a consultative culture, only a limited number of direct beneficiaries could be identified and consulted. The transport companies and the Truckers' Association were consulted with regard to the road transport regulations—such as overloading—and road safety. Important stakeholders included government departments and staffs from DOR, MOTC, and the Kazakhstan technical and research institutes for roads and road transport. They were involved in project identification and in the review of priority expenditures. Preparation of the proposed Project was coordinated with other international donors and financing entities active in Kazakhstan, the Asian Development Bank, the Islamic Development Bank, EBRD, and the European Union (TACIS). As a result, the economically justified road rehabilitation works between Almaty and Karaganda (almost 1000 km) were carried out through mutually-coordinated projects. For example, the Islamic Development Bank financed the rehabilitation of an 88-km long road section (originally planned to be part of the Bank project) for which the pre-engineering work was financed from the Project Preparation Facility the Bank made available to the Kazakhstan Government.

**Fiduciary compliance.** The financial management system during implementation had no significant changes from the one agreed at appraisal. The project continued to maintain the financial management system that was acceptable to the Bank and provided reasonable assurances that the proceeds of the loan were used for the purposes for which the loan was granted. While that was true in general, there was one prolonged financial management issue that was resolved through the joint efforts of the Bank and the Ministry of Finance. In one consulting contract a disbursement over a two year period was made using the inverse of the exchange rate (to Australian dollars). This resulted in an overpayment of about US$400,000. The error had also escaped the external project auditors’ examination of the financial records in project audits for two consecutive years. The Bank’s disbursement system could not reconcile the payments made with the invoices presented for payment. After numerous requests for rectification with no results, the Bank suspended the replenishment of the Designated Account until all the issues having to do with price escalation, variation orders, and account reconciliation were resolved. The Bank sent a fiduciary mission to carry out a Joint Fiduciary Review with the Ministry of Finance. The error was found and the commercial bank where the error was made returned the overpayment to the Bank’s designated account. The MOF and the Bank agreed that the implementing entity—now called the Committee for Transport Infrastructure Development (CTID), after the Project Implementation Unit was integrated within the Roads Committee—had not met the financial management obligations specified in the Loan Agreement. An action plan was developed and carried out for the CTID finance team to satisfy the LOA requirement.
Regarding audit compliance, the Government complied with the legal agreement to submit annual audit reports to the Bank before deadlines up to and including 2005 (when the project’s road works were completed); the remaining audit is being processed. With the exceptions noted above and after corrections, the audit reports were considered acceptable to the Bank.

**Procurement.** Although procurement of the road works and consultants went smoothly, there were several procurement issues during the contracts that required Bank attention. These included lapses in having variation orders approved by the Bank, delays for signing the contract for remedial works, and unauthorized payments for incidental services. As noted earlier a segment in the Almaty-Gulshad road needed remedial repairs. There were delays in the finalization of that contract due to the inability of the selected contractor to obtain performance security and advance payment guarantee from a local bank. Eventually the delays exceeded the project closing date and the repair works had to be done outside the project as the Ministry of Finance did not approve a request for the third extension of the closing date. The CTID also overpaid from its own funds the suppliers of road maintenance equipment to cover incidental services. The practice was, nonetheless, unacceptable in Bank financed projects. The Bank requested changes in procurement practice by designating a senior CTID staff to be responsible for procurement and, when necessary, consult senior management for advice.

### 2.5 Post-completion Operation/Next Phase

The Astana Almaty road is being maintained by the (two) Oblast Kazakhavtodor state owned enterprises under separate contracts. Maintenance activities, restructured as part of the project’s equipment purchase component, are being supported with the new maintenance equipment and three axle load weigh stations. Fines are issued to overloaded trucks. In addition, in order to prevent premature rutting, heavy trucks with over 8 ton axle loads are excluded during the daylight hours in the summer time. These latter actions are helping reduce the substantial negative impacts to the pavement that come from high temperatures during the summer time and heavy trucks.

As a result of technical assistance to structure road maintenance in a new way, including the acquisition of modern road maintenance equipment, the road is likely to be well maintained. Field observation and discussions with the road engineers supported this judgment. The repair of the defects in one contract in the Gulshad-Almaty section is underway and would be in maintainable condition at the end of this construction season.

The Kazakhstan road experts within the RC believe, nonetheless, that maintenance funding is not fully at the level required. This is a complex problem. The capital funding needs in Kazakhstan road sector are large. Maintaining a few roads in excellent condition when other roads are deteriorating even more rapidly, or already are in poor condition, not to mention the needs of the other sectors, present a challenge to formulating equitable prioritization criteria.

The lack of money is not the only problem. Maintenance work itself also faces challenges and complex problems with no quick solutions. Kazakhstan does not have its own production of good quality bitumen and good aggregate material is often several hundred
kilometers away. Most bitumen comes from Russia, which bitumen, as is well known, has a high sulphur and paraffin content making the asphalt brittle and subject to rapid aging. Use of hard bitumen to counteract rutting magnifies the problem of transverse cracking caused by the high sulphur and paraffin content. Additives that are often used to counteract the problem associated with hard bitumen make the asphalt mix plastic that ruts easily in high temperature.

Yet, as noted earlier, improvements in maintenance techniques, new equipment, twice-yearly data collection, trained staff, the emergence of ISO certified contractors, improved programming of maintenance works, and the emphasis being given to maintenance are expected to enhance the allocation of resources and effectiveness of upkeep of the republican road assets.

The Government is aware of the bitumen and asphalt mix design issues and is pursuing a longer-term solution by building a bitumen production facility, acquiring bitumen from other sources (Iran), adopting (USA’s) Superpave or European EN standard design mix methods, and pursuing research on the subject. Some roads which have a high percentage of long distance truck traffic are also being built with concrete pavement. The follow-on project, now under preparation, should pursue further improvements in the maintenance function, including mix design, bitumen additives, use of harder aggregate to prevent rutting, and long term performance and cost comparisons of asphalt and concrete pavements.

Finally, this project—and probably the projects financed by other IFIs—has clearly had a positive effect on the Roads Committee’s functioning. The Committee has now articulated in writing the key issues and the general priorities of the road sector. This is a significant advance and is serving well the ongoing preparation of the new project.

3. Assessment of Outcomes

3.1 Relevance of Objectives, Design and Implementation

The project development objective was consistent with the Bank’s assistance strategy and the new Kazakhstan’s transport development strategy. The project’s main component, the Almaty-Astana corridor, is part of the National Highway System and the top road sector priority of the Ministry of Transport. The Ministry has recently articulated the sector’s priorities, international corridors topping the list, followed by improvements of other republican roads, and improvement of other oblast and local road networks. Improving maintenance to provide year-round access are the priorities at the Oblast and local levels also has a high priority.

The Project was fully consistent with the CAS then and now. One of the pillars in both documents, among other objectives, is to support private sector-led growth and improve the competitiveness of the various regions of Kazakhstan, and address the needs of disadvantaged groups and underdeveloped regions through the financing of infrastructure in key corridors. The Project would make road transport cheaper and more reliable, thus promoting international and domestic trade, an essential element of private sector-led
growth. The Project would also facilitate the development of an important Kazakhstan industry (the road maintenance and construction industry, now fully corporatized or privatized), and help modernize the State in a sector (transport) that requires large government expenditures, thus also supporting those important CAS objectives.

**Well selected project components.** On the physical infrastructure side, the corridor was well chosen and supported the integration of the country and long-distance transport to facilitate domestic and international trade, and also, the needs for mobility of the corridor population and for facilitating commerce by the local producers in its area of influence. The institutional components were also appropriate, although, as already discussed, some of them were introduced too early to be truly of value and effective.

### 3.2 Achievement of Project Development Objectives

**The project development objectives were largely achieved.** As shown below, the objectives relating to improving the Almaty-Astana national road and the routine maintenance capacity in the corridor were achieved. Achievement of the other objectives, strengthening the capacity of the Kazakhstan road administration and local contractors, improving road transport regulations and traffic safety is more difficult to assess. There are strong indications that the strengthening of the Kazakhstan road administration and local contractors was fully achieved. The weakest achievement relates to the expected improvement in the road transport regulations and traffic safety, although even in these areas progress was made.

(a) **Improvement of the Almaty-Astana national road.** Since the completion of the rehabilitation works traffic on the road has increased and serves the increased trade flows in the corridor. Save one segment between Almaty and Gulshad, which is being repaired, the road is in good condition.

(b) **Development of routine road maintenance capability on the Almaty-Karaganda section of the Almaty-Astana road.** The acquisition of modern maintenance equipment was conditioned on developing an acceptable road (routine) maintenance plan and program for the Almaty-Astana road segment, based on prior technical assistance and training on the matter in an ADB loan. After determined efforts, and good supervision from the Bank, this finally succeeded, although the nature of the problems is unclear and there were no performance indicators relating to this matter -- excepting the successful procurement of the maintenance equipment, conditioned on satisfactory maintenance plan. The new equipment and technology in maintenance and rehabilitation spawned the introduction of new curriculums in regional educational centers for road organizations in Almaty, Kostanay, Uralsk, and Ust-Kameogorsk for training staff.

In addition, the RC made progress in controlling truck overloading, which is a serious issue in Kazakhstan’s roads. The excess weight that a truck carries beyond the allowed axle load significantly damages the road pavement structure, requiring more frequent and more expensive road maintenance interventions. A proactive management approach is in effect. Load controls
at the three points and restricting summertime axle loads to 8 tons during the
day and 10 tons at night has led to a reduction in overloading and the rate of
rutting of the asphalt pavement.

(c) Improvement of the institutional capability of the Kazakhstan road
administration (the Roads Committee) and local road contractors. Although
the Ministry of Finance withdrew loan support for the institutional
development component, the Kazakhstan road administration evolved through
many stages during the project, and is currently, as an organization structure,
synchronous with Western road administrations with separated client and
supplier functions. A Road Sector Development Program for 2006-2012 was
developed with clear priorities. In the project context there was a successful
(and quickly implemented) training in supervision, contract management and
cost estimation. There are also other indications of progress with institutional
capacity. The establishment of modernized education programs has already
been mentioned. Procurement and financial management functions improved
through trial and error and diligent supervision by the Bank. The tender
commission has provided an incentive for domestic contractors to obtain an
ISO certificate in “Quality Management System” (9001) with a certified
private road laboratory. Of the 80 road construction companies in Kazakhstan,
49 have so far obtained the ISO certificate. Finally, but belatedly, a partially
automated road data collection system has recently been set up as part of the
agreed technical assistance program.

(d) Improvement of road transport regulations and road traffic safety. The
Ministry of Finance also withdrew loan support to studies on regulations and
traffic safety, but agreed to fund them from the budget using local consultants.
The Bank consented to this approach provided it approved the TORs and
could supervise the consultancy work. Three studies were completed on the
following: (i) the establishment of a system for planning, budgeting and
monitoring road maintenance; (ii) development of policies and regulations for
road transport; and (iii) preparation of guidelines for road safety management.
The outcomes of these studies are not completely clear. According to RC, a
system for planning, budgeting and monitoring road maintenance that covers
the entire country has been established. This system relies on visual inspection,
with some automated support. Time-bound preparation of budgets and
justified proposals for actions are approved/modified centrally by the RC to
maintain consistency throughout the country. There has also been much
activity in the policy and regulatory areas. Between 2003 and 2005, eighty-
four “normative documents” and standards were revised and, where
appropriate, harmonized according to international requirements.
Road safety is receiving attention, but the situation has not significantly improved, although the accident rate, measured as injury and fatal accidents per ten million veh-km\(^5\), has gone down due to increased traffic and the target was achieved as shown by the indicator values in table. However, in actual numbers the number of injuries and fatalities has increased from 124 to 248, a hundred percent increase.

<table>
<thead>
<tr>
<th>Monitoring Indicator (injury and fatal accident/ten million veh-km)</th>
<th>Road Section</th>
<th>1998 Baseline</th>
<th>2007 Target</th>
<th>2007 Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accident rate</td>
<td>Karaganda – Akchatau</td>
<td>1.49</td>
<td>1.20</td>
<td>1.21</td>
</tr>
<tr>
<td>Accident rate</td>
<td>Almaty-Gulshad</td>
<td>2.42</td>
<td>1.90</td>
<td>1.71</td>
</tr>
</tbody>
</table>

### 3.3 Efficiency

**Economic efficiency.** An ex post cost-benefit analysis (CBA) was conducted for the rehabilitation works of the road sections between Almaty and Karaganda included in the project. The evaluation was done using the Highway Development and Management Model (HDM-4), which simulates life cycle conditions and costs and provides economic decision criteria for road construction and maintenance activities. The results of this CBA show the road sections perform well with regard to the standard criteria for measuring the performance of an investment: The project yields an Net Present Value (NPV) of US$269.1 million, and an Economic Rate of Return (ERR) of 290.1 percent. All road sections lie well above the 12 percent rate of return threshold, with positive NPV values confirming the suitability of the project. Details of the economic analysis are included in Annex 3.

### 3.4 Justification of Overall Outcome Rating

**Rating:** Satisfactory

This rating derives from the high relevance of project objectives, the choice of the road corridor to be rehabilitated, and reaching of the indicator values chosen to measure the achievement of the PDO. The road corridor was rehabilitated as planned; there was a satisfactory achievement of the highway maintenance objective; the Kazakhstan road administration was restructured and modernized; there was modest achievement in strengthening institutional capacity and traffic safety improvements; and highly satisfactory economic efficiency of the project-financed investments.

### 3.5 Overarching Themes, Other Outcomes and Impacts

(a) **Poverty Impacts, Gender Aspects, and Social Development**

There were no objectives or indicators relating to these themes.

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\(^5\) A more appropriate measure in Kazakhstan context would be accidents per population or per vehicle park, but due to difficulty to establish the relevant area for such numbers, the measure used in the developed countries was employed.
(b) Institutional Change/Strengthening
Institutional change and strengthening identified, in the PAD and the LOA, numerous activities to be studied and implemented under three headings:

- Institutional Strengthening of the Department of Roads and Development of the Kazakhstan Road Maintenance and Construction Industry
- Improvement in Road Transport Policies and Regulations and in their Implementation
- Improvement in Road Safety

However, the Ministry of Finance decided not to employ foreign consultants for technical assistance and proposed to cancel most of the TA activities from the loan. The Bank persisted, however. Some training activities were carried out as part of the supervision consultancy and the rest were carried out by local consultants supervised by the Bank under revised TORs approved by the Bank during supervision. These TORs, three in number, matched the headings of the activity in the PAD and the LOA. However, the precise content of the TORs included most but not all the activities described in the PAD and the LOA. Some of the results of these studies are still under implementation, but for reasons discussed earlier the ambitious institutional development goals of the project were only moderately achieved.

A well-designed training program to strengthen RC capacity in construction supervision was successfully carried out. Contractor capacity to carry out road rehabilitations and routine maintenance was improved with the emergence of a substantial number of ISO certified domestic contractors. In routine maintenance, a sustainable maintenance organization, institutionally separated from the client organization, was adapted from the existing force account throughout the country as a corporatized state owned enterprise working for the RC under contract.

The project’s other institutional strengthening themes: articulation of priorities for the sector, improvements for road administration and highway maintenance management, recommendations for fund allocation, and a sustainable system for planning and programming of maintenance activities were also achieved.

Improvement in Road Transport Policies and Regulations lacks precise documentation. The most noteworthy is the control of overloading at the Oblasts, and ranks high as an institutional accomplishment. Eighty-four regulations and norms were modernized. Road data collection has been improved and partially mechanized. However, the PAD objectives for this component were expressed vaguely as “improvements”. On the whole, progress is being made on this theme, which probably also was the original intention.

On traffic safety, the scope of the planned institutional development was broad. Again, the results are not well documented (at least in English). The target for accident rate reduction was achieved, there is an accident data base, and police surveillance was observed on the roads.
It would have been desirable to have one or two performance indicators for the consultancies even if they were funded by the Government.

(c) Other Unintended Outcomes and Impacts (positive or negative)
There were no unintended outcomes or impacts.

3.6 Summary of Findings of Beneficiary Survey and/or Stakeholder Workshops
N/A

4. Assessment of Risk to Development Outcome
Rating: Moderate
The project's main component, Almaty-Astana road and the benefits it generates are not subject to risk. The traffic is growing, the road is in good condition, and maintenance funding has increased. There is proactive control of overloading and good engineering surveillance of road condition, which forms the basis for maintenance recommendations. However, in view of projected traffic growth, an increase in road capacity is likely to be needed in the foreseeable future.

There is a risk that traffic safety will deteriorate unless steps are taken to remove selected black spots, maintain enforcement of traffic rules, and increase awareness about traffic safety. Although the road is on level terrain, there are a few black-spots due to inferior road geometry and slow-moving vehicles. As mentioned, traffic growth will require the construction of another carriageway in the foreseeable future to mitigate congestion and increased accident risk.

On the institutional side the organization structure and separation of administrator/manager and supplier functions will remain. Improvements in staff skills resulting from the institutionalized regional training programs are likely to remain in the road sector entities even if there is staff turnover. Also certain is the sustainability of improvements in the management of highway maintenance, and of improvements in standards and norms, whose implementation will continue in the coming years.

5. Assessment of Bank and Borrower Performance

5.1 Bank Performance
(a) Bank Performance in Ensuring Quality at Entry
Rating: Moderately Satisfactory
The project objectives related to rehabilitation of an important corridor, improving maintenance and road safety, strengthening the institutional capacity in the road sector, and modernizing road traffic regulations and policies were in line with the country’s and the Bank’s priorities. They were highly relevant. However, the institutional objectives were clearly too ambitious for the first road project in Kazakhstan. The activities to achieve the objectives were broad in scope, worded vaguely and difficult to monitor. There was too much reliance on “sound practices” without specifying what that meant in the Kazakhstan context, instead of specific and monitorable indicators.
The marginally satisfactory rating must, however, be qualified as it may be viewed unfair. It should be noted that, in addition to the reasons given above, the project was in line with the Bank ethos at the time of preparation. Its design reflected the values, methods, and objectives of the Bank at the time. There were no proven techniques to bring about institutional change and no tangible indicators had been developed to monitor or measure the result. Furthermore, the changes in key personnel and the Government’s refusal to accept foreign consultants, was totally unexpected. Under the circumstances, the Bank did as well as was possible. A prudent and slower course with a more modest institution development program, likely more effective in the long run, would have been advisable.

(b) Quality of Supervision
Rating: Satisfactory

Bank supervision was instrumental in the achievement of the PDO given the turbulent governance environment. The missions followed project implementation closely, with an average of two supervision missions per year. The missions gave practical and useful advice, upheld the Bank’s high standards, and saw to it that training of local professionals in supervision and contract management was done promptly. Supervision missions insisted on a satisfactory routine maintenance plan before permitting the procurement of modern equipment.

The missions were also concerned with enhancing the impact of institutional development activities. While consenting to the Government’s decision not to fund TA from the loan but from the budget, the missions insisted that the Bank approve the TOR and supervise the consultancy work. This approach ensured that the institutional components were carried out, although in traffic safety the progress was marginal.

Finally, missions paid close attention to financial management and procurement and corrective actions were taken to provide for learning and to ensure that the Bank’s safeguards were diligently observed.

(c) Justification of Rating for Overall Bank Performance
Rating: Satisfactory
The satisfactory rating for overall Bank performance results from highly satisfactory implementation of the project’s infrastructure component with a high ERR, satisfactory ratings for Bank performance ensuring a reasonable quality at entry for the first road project in Kazakhstan and from well-performed supervision.

5.2 Borrower Performance
(a) Government Performance
Rating: Moderately satisfactory
The Government took active interest in the project, especially its civil works components, from start to finish. The central government agencies provided satisfactory support for the project, and worked cooperatively with the Bank to fix problems to achieve results agreed in the Loan Agreement. Funding for road sector maintenance has increased as agreed during preparation. In general, funding for project execution was satisfactory,
although funding for technical assistance activities was in doubt for a while and slowed project implementation.

There are three exceptions to this positive evaluation. The Government was committed through a loan covenant to increase road user charges gradually to 100 percent of the cost of road use by the end of the project. The Ministry of Economy and Budget Planning decided, however, that increased taxation of road users was not desirable and increased the annual allocation for road maintenance from the state budget, but the covenant was never fulfilled although the increased road sector funding was. The second concerns the approach to implementing several of the institution building components of the project, which necessitated two project extensions. Although most of the institution building components were completed at Government expense and key Borrower actors during implementation were not the same as during project preparation, it is not clear why resistance to institution building (assistance by foreign consultants) arose. The third exception is the most troubling one: The Government is still negotiating with the auditors the payment terms of the final project audit.

(b) Implementing Agency Performance
Rating: Satisfactory
The implementing agency was very effective from the start of the project with regard to the road rehabilitation works, which were completed by the original closing date. In one segment, defects appeared and correction was slow because of the contractor’s refusal to undertake them. Nonetheless, the implementing agency was persistent and the defects were corrected after project completion. On the institutional side, the training program to supervise road works and improve contractor capacity was carried out swiftly, and terms of references were prepared for the Bank’s approval for the remaining technical assistance activities.

The implementing agency had a learning curve in preparing an acceptable maintenance plan for the project road. This resulted in a late start for procuring the maintenance equipment. The implementing agency was also eager to undertake the institutional consultancy studies until the Government decided not to fund them from the loan. Once Government funding was obtained, the consultancies were carried out, although sluggishly and according to the original plans (which may explain the seeming lack of interest), and requiring project extensions. The implementing agency needs to improve its contract archiving function.

(c) Justification of Rating for Overall Borrower Performance
Rating: Satisfactory
The overall Borrower performance is rated as satisfactory. This is based on the ratings of the Government and the implementing agency and also considering that the project outcome is satisfactory and is deemed to be sustainable.

6. Lessons Learned

1. The country’s administrative culture is an important determinant of success in institutional development. The project had an ambitious and broad institutional
development program. This was undoubtedly influenced by the awareness and technical competence of the key managers in the sector during preparation. However, the development program tottered and eventually was implemented only in part. This result came about because the institutional development program depended on many entities other than the road administration. These other entities may not have understood the planned program, or had other objectives, and this had an effect on the final process and outcome. Therefore, it is important that all involved actors are ‘on the same page’, or that the program goes forward slowly so that experiential understanding has time to develop among all affected interests.

2. When undertaking the first project in a sector, components for which there is experiential knowledge can be implemented quickly and well. In Kazakhstan the road sector had experience in road rehabilitation. These components were implemented quickly even with a method that was new to the Kazakh professionals. A corollary is that a related activity, which does not involve outside entities, such as road maintenance, can adopt and learn new approaches and practices.

3. Local consultants are preferred and can be more effective and better accepted than foreign consultants for technical assistance. This preference for local consultants derives from the awareness that technical assistance is not purely technical but also depends on understanding the local administrative culture, important actors, and informal connections. A corollary is that use of local consultants should become more widespread but this would require that the Bank increases its supervision work as supervision teams must train and supervise the local consultant. The cost of this type of supervision should be considered, and also the possibility that the cost of all supervision could be paid by the Borrower and made explicit in the Loan Agreement.

7. Comments on Issues Raised by Borrower/Implementing Agencies/Partners
   (a) Borrower/implementing agencies
   The Borrower/Implementing Agencies have raised no issues.

   (b) Cofinanciers
   N/A

   (c) Other partners and stakeholders
   N/A
Annex 1. Project Costs and Financing

(a) Project Cost by Component (in USD Million equivalent)

<table>
<thead>
<tr>
<th>Components</th>
<th>Appraisal Estimate (USD millions)</th>
<th>Actual/Latest Estimate (USD millions)</th>
<th>Percentage of Appraisal</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPROVEMENT NATIONAL ROAD NETWORK</td>
<td>113.4</td>
<td>118.8</td>
<td>104.7</td>
</tr>
<tr>
<td>STRENGTHENING OF MAINTENANCE AND EQUIPMENT</td>
<td>5.8</td>
<td>4.4</td>
<td>75</td>
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<tr>
<td>INST. STRENGTHENING OF DOR AND CONSTRUCTION INDUSTRY</td>
<td>1.7</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>CONSULTANT SERVICES AND TRAINING</td>
<td>6.3</td>
<td>6.3</td>
<td>100</td>
</tr>
<tr>
<td>ROAD POLICIES AND REGULATIONS</td>
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<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>IMPROVEMENT OF ROAD SAFETY</td>
<td>1.0</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>PROJECT MANAGEMENT BY PIU</td>
<td>1.2</td>
<td>0.31</td>
<td>0.26</td>
</tr>
<tr>
<td><strong>Total Baseline Cost</strong></td>
<td><strong>131.2</strong></td>
<td><strong>129.81</strong></td>
<td><strong>98.9</strong></td>
</tr>
<tr>
<td>Contingencies</td>
<td>9.8</td>
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<td>0.00</td>
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<tr>
<td><strong>Total Project Costs</strong></td>
<td><strong>141.0</strong></td>
<td><strong>129.81</strong></td>
<td><strong>90.2</strong></td>
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<td>Front-end fee PPF</td>
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<td>1.1</td>
<td>100.0</td>
</tr>
<tr>
<td>Front-end fee IBRD</td>
<td>1.0</td>
<td>1.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total Financing Required</strong></td>
<td><strong>143.8</strong></td>
<td><strong>131.91</strong></td>
<td><strong>91.7</strong></td>
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</table>

(b) Financing

<table>
<thead>
<tr>
<th>Source of Funds</th>
<th>Type of Cofinancing</th>
<th>Appraisal Estimate (USD millions)</th>
<th>Actual/Latest Estimate (USD millions)</th>
<th>Percentage of Appraisal</th>
</tr>
</thead>
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<tr>
<td>Government</td>
<td></td>
<td>35.70</td>
<td>36.8</td>
<td>103.08</td>
</tr>
<tr>
<td>International Bank for Reconstruction and Development</td>
<td></td>
<td>100.00</td>
<td>95.6</td>
<td>95.6</td>
</tr>
</tbody>
</table>
## Annex 2. Outputs by Component

<table>
<thead>
<tr>
<th>Component</th>
<th>Output</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitation of the Almaty – Astana Road (US$113.4 million appraised)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical Components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Karaganda- Almaty segment</td>
<td>500 km</td>
<td>Rehabilitation completed as planned</td>
</tr>
<tr>
<td>Garaganda-Astana segment</td>
<td>100 km</td>
<td>Provisional component, canceled</td>
</tr>
<tr>
<td>Engineering services</td>
<td></td>
<td>Completed</td>
</tr>
<tr>
<td>Strengthening routine maintenance (US$5.8 million appraised)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>Equipment purchased</td>
<td>Completed as planned</td>
</tr>
<tr>
<td>Institutional Strengthening (US$1.7 million – appraised)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) Planning, budgeting and monitoring procedures</td>
<td>Done</td>
<td>Canceled from loan financing, but completed at Government expense</td>
</tr>
<tr>
<td>(ii) Establishment of procedures for the supervision, and training</td>
<td>Done</td>
<td>Part of engineering services, foreign consultant</td>
</tr>
<tr>
<td>(iii) Training programs for Kazakhstan contractors</td>
<td>Done</td>
<td>Part of engineering services, foreign consultant</td>
</tr>
<tr>
<td>(iv) Strengthening of MOTC training capacity</td>
<td>Done</td>
<td>Canceled from loan financing, but completed at Government expense</td>
</tr>
<tr>
<td>(v) Study tours, equipment for road condition surveys, traffic surveys, on-site laboratory</td>
<td>Partially completed</td>
<td>Canceled from loan financing, but completed at Government expense. (There were no study tours).</td>
</tr>
<tr>
<td>Road Transport Laws, Regulations and Policies (US$0.7 million appraised)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Studies/Activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation of road transport policies and regulations</td>
<td>Partially completed</td>
<td>Canceled from the loan, but completed partially at Government expense. (Regulations on axle load control implemented. Several norms and standards were revised. Data collection partially automated)</td>
</tr>
<tr>
<td>Improvement in Road Safety (US$1.0 million appraised)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Studies/Activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of policies on road safety</td>
<td>Completed only to a minor degree</td>
<td>Canceled from the loan, but partially completed at Government expense. (A study and an action plan was prepared by consultant.)</td>
</tr>
</tbody>
</table>

Annex 2 of the PAD and the LOA give a detailed list of activities to be undertaken. These are reproduced below:

1. Rehabilitation of Priority Sections of National Roads - US$113.4 million, consisting of:
Rehabilitation of several selected segments of the national road network, totaling about 500 kilometers,

Rehabilitation of several selected segments of the national road network between the cities of Karaganda and Astana (this segment was subject to discussions with the Government and justification on economic and environmental grounds and was later deleted).

Provision of engineering, procurement and other consultants’ services and training for the rehabilitation of national roads and supervision of construction of road works.

2. Strengthening of Routine Road Maintenance - US$5.8 million, consisting of:
   (a) Provision of equipment and spare parts for improving routine road maintenance.

3. Institutional Strengthening of the Department of Roads and Development of the Kazakhstan road Maintenance and Construction Industry - US$1.7 million, consisting of:
   (a) the establishment of planning, budgeting and monitoring procedures for the national and regional road network
   (b) the establishment of procedures for the supervision of road works carried out under contracts on the national and regional road network, as well as the training of staff of MOTC and local specialists in these procedures;
   (c) the preparation of training programs for Kazakhstan contractors in subjects such as bid preparation, contract administration, cost control, management, and quality control;
   (d) the strengthening of MOTC training capacity in the above three subjects; and
   (e) provision of consultants’ services, training, study tours, and equipment for road condition surveys, traffic surveys, data processing, on-site and laboratory tests, and office use.

4. Improvement in Road Transport Policies and Regulations and in their Implementation - US$0.7 million, consisting of:
   (a) the improvement and development of laws and regulations pertinent to roads and road transport,
   (b) the improvement of enforcement activities,
   (c) the improvement of systems to collect and process data on the road transport subsector
   (d) the development of a more competitive market for the provision of inter-city and rural passenger transport services,

5. Improvement in Road Safety - US$1.0 million, consisting of:
   (a) Temporary road safety task force and the preparation of a preliminary National Road Safety Action Plan and Local Safety Plans
   (b) Improvements in the collection and processing of road accident data
   (c) Development of road safety research in Kazakhstan
(d) Improved enforcement of road safety regulations by law enforcement entities
(e) Development of a better understanding of road safety problems among young people and the population at large
(f) Review of the state of existing, and possible provision of additional, emergency medical and other equipment.

As explained in the main text, the activities in components 3, 4 and 5 were lumped together and carried out by Kazakh consultants at Government expense. The studies were completed and the results partially implemented.

Summary of Project Costs and Benefits (in constant dollars):

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total financial cost at appraisal</td>
<td>US$113.4 million</td>
</tr>
<tr>
<td>Total financial cost at completion</td>
<td>US$118.8 million</td>
</tr>
<tr>
<td>Economic Net benefits at appraisal</td>
<td>US$69.1 million, ERR 31.8 %</td>
</tr>
<tr>
<td>Economic Net benefits at completion</td>
<td>US$269.1 million, ERR 290.1%</td>
</tr>
</tbody>
</table>

An ex post cost-benefit analysis (CBA) was conducted for the rehabilitation works of the road sections between Almaty and Karaganda included in the project. The evaluation was done using the Highway Development and Management Model (HDM-4), which simulates life cycle conditions and costs and provides economic decision criteria for road construction and maintenance activities. HDM-4 estimates the net discounted benefits of each proposed intervention, in terms of the associated reduction in vehicle operating costs, passenger travel time, and road maintenance expenditures.

The economic analysis was undertaken by comparing the economic costs and benefits from the project to a base, or ‘deferred’, scenario. The deferred project scenario resembles the project scenario in most aspects except timing and the rationale is that without the proposed project, adequate funds would be unavailable for the road agency until much later on to carry rehabilitation activities beyond the minimum annual routine maintenance requirements.

The results of this CBA show the road sections perform well with regard to the standard criteria for measuring the performance of an investment: All road sections lie well above the 12% rate of return threshold, with positive NPV values confirming the suitability of the project.

Data and Main Assumptions:

The appraisal period was defined at 15 years, which best accounts for the economic life of the rehabilitation activities undertaken under the project and base scenarios. A discount rate of 12% was assumed.

The financial costs are the actual costs of contracts. Maintenance costs are based on the current maintenance contracts. At appraisal the projected average costs were US$169,000 per kilometer includes bridge repairs, shoulder widening, culvert repairs, and design requirements stipulated by the Kazakhstan standards. At completion the experienced costs were US$255,000 (rounded to the nearest ‘000)—a 50% percent increase. Economic costs represent the real costs, net of all transfer payments, and amount to about 80% of financial costs.
The current traffic, as well as traffic at appraisal, is shown in table 1 for the Northern and Southern segments. Traffic growth rates at appraisal were assumed at 5.5 and 5 percent for passenger and freight traffic respectively over the initial 6 years, after which these rates were assumed at 4.2 and 4 percent respectively, for the remaining years of the analysis period. The actual growth rates, used in this analysis, were 10% for both freight and passenger.

Economic Analysis Results

The results of this CBA show the road sections perform well with regard to the standard criteria for measuring the performance of an investment: The project yields a NPV of US$269.1 million, and an ERR of 290.1%. All road sections lie well above the 12% rate of return threshold, with positive NPV values confirming the suitability of the project.

Although the risk of cost overrun materialized, mostly due increases in the material costs and more durable design, the benefits were robust, as anticipated at appraisal. Another result at appraisal was that the ERR was sensitive to (lower) traffic growth. This turned out to be true, but in reverse: the traffic grew at twice the rate estimated at appraisal.

As anticipated, the Project's main direct beneficiaries are individual car users and owners of trucks and buses traveling on the Project road sections. They would benefit from reduced vehicle operating costs, shorter traveling time, more reliable conditions, and higher perceived traffic safety. The lowering of freight transport costs on one of the main transport corridors of Kazakhstan has stimulated development of internal and external trade and the growth of the economy. This is shown by the strong traffic growth in the corridor. The Project's main components are therefore expected to benefit all income groups in Kazakhstan.

Table A4:1

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger cars and minibuses</td>
<td>2470</td>
<td>5576</td>
<td>4840</td>
<td>11459</td>
</tr>
<tr>
<td>Midibuses</td>
<td>n/a</td>
<td>14</td>
<td>n/a</td>
<td>162</td>
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<tr>
<td>Heavy buses</td>
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<td>n/a</td>
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<tr>
<td>Trucks</td>
<td>90</td>
<td>202</td>
<td>903</td>
<td>2037</td>
</tr>
<tr>
<td>Trailers trucks</td>
<td>90</td>
<td>87</td>
<td>903</td>
<td>2037</td>
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<tr>
<td>Articulated trucks</td>
<td>n/a</td>
<td>118</td>
<td>n/a</td>
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<td>Motorcycles</td>
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<tr>
<td>Total</td>
<td>2560</td>
<td>6033</td>
<td>5743</td>
<td>16050</td>
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</table>
Annex 4. Bank Lending and Implementation Support/Supervision Processes

(a) Task Team members

<table>
<thead>
<tr>
<th>Names</th>
<th>Title</th>
<th>Unit</th>
<th>Responsibility/ Specialty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jean-Charles Crochet</td>
<td>Sr Transport Economist</td>
<td>MNSSD</td>
<td>Team Leader</td>
</tr>
<tr>
<td>Henry Kerali</td>
<td>Lead Transport Specialist</td>
<td>ECSSD</td>
<td>Team Leader</td>
</tr>
<tr>
<td>Jacques Bure</td>
<td>Sr Highway Engineer</td>
<td>ECSSD</td>
<td></td>
</tr>
<tr>
<td>Norpulat Daniyarov</td>
<td>Financial Management Specialist</td>
<td>ECSPS</td>
<td></td>
</tr>
<tr>
<td>Nurbek Kurmanaliev</td>
<td>Procurement Spec.</td>
<td>ECSPS</td>
<td></td>
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<tr>
<td>Martha B. Lawrence</td>
<td>Sr Transport. Spec.</td>
<td>ECSSD</td>
<td></td>
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<tr>
<td>Navaid A. Qureshi</td>
<td>Senior Infrastructure Specialist</td>
<td>CSFSD</td>
<td></td>
</tr>
<tr>
<td>Saltanat Sulaimanova</td>
<td>Consultant</td>
<td>ECAVP</td>
<td></td>
</tr>
</tbody>
</table>
(b) Staff Time and Cost

<table>
<thead>
<tr>
<th>Stage of Project Cycle</th>
<th>Staff Time and Cost (Bank Budget Only)</th>
<th>No. of staff weeks</th>
<th>USD Thousands (including travel and consultant costs)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lending</strong></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>FY93</td>
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<td>8</td>
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<td>155</td>
<td>911.71</td>
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Annex 5. Beneficiary Survey Results
N/A
Annex 6. Stakeholder Workshop Report and Results
N/A
Annex 7. Summary of Borrower's ICR and/or Comments on Draft ICR

Road Transport Restructuring Project
Project Completion Report

The beginning of the Road Transport Restructuring Project realization (International Bank for Reconstruction and Development Loan No 44370) coincided with the period of Kazakhstan economy formation after the collapse of the USSR.

Due to the fact that volumes of works executed every year and availability of equipment of local contractors were not high, and Bank’s requirements to suppliers were very tough local companies were not able to participate in tender and foreign companies acted as general contractors.

Though the International Bank for Reconstruction and Development sets rather tough requirements for Borrowers and Executing Agencies, quality of supervision and services and also approach to projects realization are quite satisfactory from our point of view.

Budgetary funds assigned for road sector development increase every year in Kazakhstan. Thus, in year 2002, 20 bln. KZT was assigned for this purpose and in year 2007 – 120 bln. KZT.

All the employees of the Committee for Roads and its regional offices are qualified specialists with higher education.

In view of new equipment import and new technologies implementation regional educational centers were established in Almaty, Kostanay, Uralsk and Ust-Kamenogorsk on the basis of existing schools, research institutions and road organization for training and retraining of personnel.

Tak ing into consideration the experience of international contracts Engineer Service was established in Kazakhstan in accordance with the Government decree. This Service deals with technological maintenance and technical control during construction, reconstruction and major repairs.

Public institutions Oblzhollaboratoriiya were established in each region which are completed with special laboratory equipment and machinery for quality control of road construction works.

In years 2003-2005 in accordance with Activity Plan for harmonization of normative documents with international requirements 62 standards used in road sector of Kazakhstan were revised and harmonized. During the mentioned period 8
instructions, 6 technical specifications, 24 recommendations on the implementation of new technologies and materials had been worked out.

Tender commissions reduce bid value of potential supplier if one has ISO certificate 9000:2001 “Quality Management System” and private certified road construction laboratory. This gave impetus for the implementation of international quality management system in the organizations of this sector.

At the meantime there is approximately 80 road construction companies in Kazakhstan. 49 of them possess ISO certificates. Altogether more than 20000 people work in the sector. Taking into consideration volumes of road construction works by the year 2012 the quantity of workers in the sector is expected to reach 40000 mostly at the expense of extension of staff in contracting agencies.

With the implementation of Automated Management System of data collection the process of data collection has been partially automated. In the meantime this system requires improvement. Within technical assistance, provided by the European Bank for Reconstruction and Development, this question was considered by the Consultant – “Finnroad” Ltd. On the basis of research “Finnroad” Ltd. in association with “SK Engineering” LLP the report “Assistance to improving maintenance of roads In Kazakhstan” was prepared. The report comprises three components: road maintenance, pavement management system, concession and PPP.

Road Sector Development Program for years 2006-2012 provides for the following priorities: priority reconstruction of basic international transit corridors; stage-by-stage liquidation of destrucions on roads network; elimination of ground cracks at republican roads; keeping and reconstruction of oblast and regional roads; all-the-year-round traffic availability in rural areas; construction, reconstruction and repair of roads with low cost price in rural areas and others (see Road Sector Development Program for years 2006-2012, chapter 4, clause 4.1)

Taking into account increasing road traffic and growing quantity of heavy-duty trucks since year 2006 under the development of new roads reconstruction project the requirements of the revised construction norms and rules providing transition of international roads to II technical category with strengthening of road structure on axle load not less than 13 tons are to be taken into account.

The quantity of road construction companies participating in big state projects (about 80) including those enabled to participate in international bids (about 15 - “K-Dorstroy”, “Akmola Kurylys Materialdary”, “Kazakhdorstroy”, “Avtodorservis”, “Progress”, “Kazpako”, “Karagandazholdary” and others) is growing every year.

At the meantime due to the increase of road traffic and speed the number of traffic accidents is growing and the consequences are getting worse.
The main works implemented on the sections of Almaty - Karaganda road were rehabilitation works.

As of now the condition of road sections rehabilitated at the expense of the World Bank funds (except the section km 343-509) requires periodical repairs. Now average costs for road works and maintenance in Kazakhstan are the following:
- capital repair of 1 km of road - 100 mln. KZT;
- middle repair of 1 km of road - 5 mln. KZT;
- routine repairs of 1 km of road - 300 thousand KZT.

In order to unload republican budget the search of alternative financial sources including public private partnership model are being constantly implemented.

Average daily traffic on Almaty – Karaganda road according to the data for the 4th quarter of year 2007 is the following:

<table>
<thead>
<tr>
<th>Vehicle type (units)</th>
<th>Almaty region</th>
<th>Karaganda region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger cars and minibuses (units)</td>
<td>5576</td>
<td>11459</td>
</tr>
<tr>
<td>Midibuses (units)</td>
<td>14</td>
<td>162</td>
</tr>
<tr>
<td>Heavy buses (units)</td>
<td>30</td>
<td>528</td>
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<tr>
<td>Trucks (units)</td>
<td>202</td>
<td>2037</td>
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<td>Trailers trucks (units)</td>
<td>87</td>
<td>588</td>
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<tr>
<td>Articulated vehicles (units)</td>
<td>118</td>
<td>1276</td>
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<tr>
<td>Tractors (units)</td>
<td>5</td>
<td>8</td>
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<tr>
<td>Motorcycles (units)</td>
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<td>0</td>
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<tr>
<td>Total (units)</td>
<td>6038</td>
<td>16058</td>
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</table>

**Implementation of civil works contracts**

The Road Transport Restructuring Project was implemented in accordance with Loan Agreement (LA) entered into by and between the Republic of Kazakhstan and the International Bank of Reconstruction and Development on 14 April 1999, which came into effect on 14 January 2000, in the amount of USD100.0 million with co-financing by the Government of Kazakhstan in the amount of USD 35,7 million. Loan Agreement ratified by the Law of Republic of Kazakhstan No 446-I dated July 20, 1999.
All of the Project components have been completed with the exception of the remedial road works on the Almaty-Gulshad section, km 343-509.

**Almaty-Gulshad section (km 27-509)**

The supervision Engineer – SMEC Company (Australia)
Contracts No 005, 006, 007, 008 and 009 - WB/CW have been completed, the objects have been put into operation.

Contract 004-WB/CW was signed by and between the Committee of Roads of the Ministry of Transport and Communications and JV Holding Energoproject – Kazakhstan Zholdary on December 22, 2000.

The main construction works within the Contract have been completed in 2003. Due to the fact that the Contractor had delayed on elimination of defects found out in August-September, 2004, the Client has terminated the Contract.

The tender for procurement of remedial works on the Almaty-Gulshad section, km 343-509 was conducted on August 11, 2006. According to the result of tender, the Contract 004Ar-WB/CW for remedial works valued at KZT 845,793,760.20 was awarded to Tarazzholkurylys LLP.

The Contract 004Ar-WB/CW, the length of the section is 166 km (km 343-509) The Contract works include the rectification of defects on various sections of existing pavement at 166 km length including all investigations, geometrical design and drawings, testing, excavation, milling and reconstruction of pavement; preparation of existing pavement, asphalt overlays, buildup of shoulders, earthworks, demolition and restoration of traffic marking and furniture.

The Advance payment in the amount of 211,488,440 KZT was paid to the Contractor and also Interim Payment Certificate No 1 in the amount of 41.7 mln. KZT and the Certificate No. 2 in the amount of 33.7 mln. KZT.

Due to the fact that the Loan was closed on December 31, 2007 but construction works on the section have not been completed yet further financing of the project will be effectuated at the expense of the Republican Budget.
Akchatau – Karaganda Section (km 788-1003)

The Supervision Engineer – «Scott Wilson» (Great Britain)
Contracts No 001, 002, 003 - WB/CW have been completed, the objects have been put into operation

Considering that validation time of Contract 002-WB/CS expired and representatives of Scott Wilson Company refused to come Kazakhstan, the Nippon Koei Company was involved to prepare the Final certificate for Contract 003-WB/CW – Contractor “IRDO” Company. The Nippon Koei Company in person of Mr. D. Carmichael has prepared the Final Payment Certificate for Contract 003-WB/CW at agreed amount USD 891,459.24. Unpaid sum is amounted to USD 528,211 and KZT 12,947,800. The question concerning payment to “IRDO” Company is now under consideration.

**Procurement of Equipment**

Within the Road Transport Restructuring Project the following Equipment Procurement Contracts for the total amount of 5.2 mln. KZT were signed:

**Within the lot 2.** “Heavy Grader” (14 units) - with «Xinjiang Yema Economy and Trade Co. Ltd.».

**Within the lot 3.** “Road repair and service vehicle” (28 units) – with “Medintech” LLP.

**Within the lot 4.** “Front-End loader” (14 units) – with JSC VPK “ChelProm”.

**Within the lot 5.** “Wheeled tractor with attachments” (40 units) – with “MTZ Kazservice” LLP.

**Within the lot 6.** “Universal multigrade vehicle” (14 units) – with “Limited Partnership “Commercial-Production firm “Zake”

All the procured equipment was supplied and the payments within all Contracts have been realized in full.
Annex 8. Comments of Cofinanciers and Other Partners/Stakeholders

N/A (none)
Annex 9. List of Supporting Documents

1. Aide-Memoires, Back-to-Office Reports, and Implementation Status Reports
2. Quarterly Reports prepared by Borrower
5. Supplementary Economic Analysis of Akchatau-Karaganda Road Rehabilitation dated January 1998
7. Report of Ian Jenkins (Road Transport Review) dated October 1997
8. Improvement in Road Transport and Road Policies, Regulations and in their Implementation
9. Study to Develop and Implement a Road Planning, Budgeting and Monitoring System (Highway Management System)
10. Improvement of Road Safety