

1. Project Data:		Date Posted : 06/30/2014	
Country:	Georgia		
Project ID:	P083110	Appraisal	Actual
Project Name:	First East-West Highway Improvement Project	Project Costs (US\$M):	29.04 / 65.03
L/C Number:	C4248	Loan/Credit (US\$M):	19.00 / 48.15
Sector Board :	Transport	Cofinancing (US\$M):	
Cofinanciers :		Board Approval Date :	12/05/2006
		Closing Date :	02/28/2011 / 06/30/2013
Sector(s):	Roads and highways (94%); General transportation sector (3%); Central government administration (2%); Tertiary education (1%)		
Theme(s):	Infrastructure services for private sector development (33% - P); Administrative and civil service reform (33% - P); Injuries and non-communicable diseases (17% - S); Legal institutions for a market economy (17% - S)		
Prepared by :	Reviewed by :	ICR Review Coordinator :	Group:
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2. Project Objectives and Components:

a. Objectives:

The project development objectives in the Project Appraisal Document (PAD, p8) and the Financing Agreement (Schedule 1, p. 4) are: "to (a) contribute to the gradual reduction of road transport costs and improve access, ease of transit and safety along the central part of Georgia's East-West corridor through upgrading a segment of the East-West Highway from Tbilisi to Rikoti; and (b) strengthen the capacity of the Government, RDMED [the Roads Department] and the local road construction industry to plan and better manage the road network".

Additional Financing (AF) in the amount of US\$35 million was approved in October, 2009, in order to finance the rehabilitation of the Rikoti tunnel, which was added to the first sub-objective.

b. Were the project objectives/key associated outcome targets revised during implementation?

Yes

If yes, did the Board approve the revised objectives /key associated outcome targets?

Yes

Date of Board Approval: 11/10/2009

c. Components:

The project had three components. After restructuring, component 1 was modified to add works related to the Rikoti tunnel under the AF.

1. Upgrading the Agaiani to Igoeti Section of the E60 Highway and Rehabilitation of the Rikoti Tunnel (Appraisal Estimate: US\$54.90 Million, Actual Cost: US\$62.47 Million).

- This component was to upgrade the Agaiani to Igoeti section (approximately 13km) of the E60 highway from

two lanes to four lanes through the financing of works and consultant services for works supervision .

- Following the restructuring, the component was also to finance the works and provision of goods and consultant's services for: (1) the rehabilitation of the Rikoti tunnel in order to: (a) restore its structural integrity; (b) improve the ventilation system; (c) improve the lighting system; and (d) provide appropriate fire and traffic safety facilities; and (2) repairs to the Rikoti tunnel by-pass road.

2. Road Sector Institutional Development and Capacity Building (Appraisal Estimate: US\$2.88 million, Actual Cost: US\$2.11 million)

- This component was to strengthen the institutional capacity of the Government, the Road Department (RDMED) and the local road construction industry. In the PAD, the emphasis was made on (1) road investment and maintenance planning (i.e., establishment of road data base, use of the Highway Design and Maintenance model, Version 4 (HDM4)), (2) improving road sector capacity, (3) environmental and road safety management.

3. Project Management, Monitoring and Evaluation (Appraisal Estimate: US\$1.14 million, Actual Cost: US\$0.45 million)

- This component was to provide institutional support to the Road Department and the Transport Reform and Rehabilitation Center (TRRC) related to Project Implementation, audits and Project monitoring and evaluation .

d. Comments on Project Cost, Financing, Borrower Contribution, and Dates:

Project cost: The total project cost increased due to the Rikoti tunnel at restructuring, but the costs of the original components were only slightly more than the appraisal estimates (US\$31.71 million, compared to US\$29.04 million, both figures including the front end fee of US\$0.7 million) Of the additional financing of US\$35 million for the tunnel and bypass works, US\$34.72 million was actually spent.

Financing: The original IDA Credit was Special Drawing Rights (SDR) 12.9 million (US\$19 million equivalent). The AF was provided in the form of an IBRD Loan of US\$28 million, and with this the total planned Bank Group contribution became US\$47 million. At closure, the actual total Bank financing, in dollar terms, was US\$48.15 million (due to the appreciation of the SDR against the US dollar for the IDA Credit). There were no other external sources of financing.

Borrower contribution: The Borrower's actual contribution was US\$16.9 million compared to the appraisal estimate of US\$9.34 million; this significant increase is due to the Rikoti tunnel construction works .

Dates: Due to the additional tunnel works under the additional financing, the original closing date of February 28th, 2011, was extended by 28 months to June 30th, 2013.

3. Relevance of Objectives & Design:

a. Relevance of Objectives:

The project development objectives are relevant to the "Strategic 10-Point Plan of the Government of Georgia for Modernization and Employment 2011-2015," and road sections, including E60, are particularly highlighted for the development of high quality and safe road infrastructure. Given the geographical location of Georgia, connecting Europe and the Caspian sea at the shortest distance through improvement of the East-West Highway (E60), including the Rikoti tunnel, has a strategic importance for enhancing international trade and economic activities.

The objectives are also relevant to the World Bank Group's Country Partnership Strategy (CPS) for Georgia for the Fiscal Years 2010-13, which focuses on road infrastructure development to strengthen connectivity and exploit export potential for post-crisis growth. The transport corridor improvement was relevant to the World Bank Group's priorities at the time of appraisal in 2006. Specifically, the World Bank Group's CPS for the Fiscal Years 2006-2009 identified the poor conditions of the highway network as a major constraint to boosting business activities.

The relevance of the objectives is **High**.

b. Relevance of Design:

The statement of objectives is clear and monitorable. The project results framework is logical. Two project components (i.e., the upgrade of E60 including the Rikoti tunnel, and institutional capacity development) explicitly link two separate project outcomes. For instance, the upgrade of the poor condition of the E60 road section and rehabilitation of Rikoti tunnel would reasonably be expected to contribute to reduced travel time and vehicle operating costs. Given the initially weak capacity of the Road Department, developing or upgrading the technical specifications, procedures and regulatory framework are an important first step. One moderate shortcoming is that more attention might have been paid at the design stage to the issue of road safety. Although safety specifications and

establishment of a road safety unit are discussed, more concrete measures might have been appropriate given the fact that 'Georgia's 2005 traffic fatality rate of 12 per 10,000 vehicles was among the worst of eastern European countries' (ICR, p1), Moreover, except for assistance to the Technical University (which is discussed on page 9 of the PAD, but not included in its Results Framework), activities to strengthen the capacity of the local road construction industry could have been more clearly specified. Relevance of design is rated **Substantial**.

4. Achievement of Objectives (Efficacy):

(i) *Contribute to the gradual reduction of road transport costs and improve access, ease of transit and safety along the central part of Georgia's East-West corridor. Substantial.*

Outputs

- A two lane 13km road section was upgraded to four lanes between Agaiani and Igoeti along with the East-West Highway as planned.
- Safety specifications, such as the installation of New Jersey barriers and guardrails, provision of traffic marking and sign, were incorporated into this road section.
- The Rikoti tunnel and its bypass road were fully rehabilitated, although the testing and operationalization of additional unanticipated electro-mechanical equipment of the tunnel was yet to be done at project closure.

Outcomes

- Travel time between Agaiani and Igoeti was reduced from 10 minutes to 7 minutes, which meets the original target.
- Vehicle operating costs between Agaiani and Igoeti were reduced from US\$0.2/km to US\$0.17/km, exceeding the target of US\$0.18/km.
- The Rikoti tunnel facilitates transportation along the E60 and improves access to markets removing the necessity of a detour.
- The Rikoti tunnel was constructed in accordance with European Union tunnel safety standards. While baseline data for car accidents in the Rikoti tunnel are not available (since the police do not have accident data identifying the place of the accident), there was only one major (but not fatal) accident during the approximately six months between the tunnel opening and the completion of the ICR.
- Due to the unavailability of segregated road accidents data, it is hard to confirm whether there was an improvement of road safety on the specific road section between Agaiani and Igoeti. However, the ICR (p15) considers that "the [Road Department] mainstreamed incorporation of similar road safety engineering measures in all road construction and rehabilitation projects, which was one of the major contributing factors" for improving country-wide road safety. Statistics show that incidents of accidents, injury and death steadily declined after the approval of the project. Attribution, however, is likely only partial, since the road safety unit within the Road Department was established only in 2012, and most of the highway network had not yet fully been upgraded. The ICR acknowledges that measures beyond the scope of this project, such as the enforcement of seat belts usage, collectively contribute to the enhanced road safety.

(ii) *Strengthen the capacity of the Government, the Road Department (RDMED) and the local road construction industry to plan and better manage the road network. Substantial*

Outputs

- A multi-year investment and maintenance programming is now used every year.
- Core technical manuals and teaching materials were revised. New technical standards, specifications for road pavements and new geometric design standards for road design were also adopted.
- An Environmental/Land acquisition team, as well as a safety unit within the Road Department, were set up and became operational.
- The curriculum and laboratory equipment of the Technical University were modernized to train road engineering experts in Georgia, and are used for teaching.
- Workshops for international and local consultants and contractors were held to share best practices in road engineering and construction.
- A rest area framework and feasibility study was completed and a business plan developed.
- Drafting the road and traffic safety law completed, but it had not been approved by the Government at project closure.
- The Road management system had not yet been procured by project closure because the procurement of the Geographical Information System (GIS)-based Road Asset Management System (RAMS) was cancelled twice due to unacceptable financial bids resulting from over-specification. The procurement design has been revised, and it is planned to support procurement under the Bank-financed Second Secondary and Local Road Project. However, the Road Department runs most of the main network annually through the Highway Development Management Model, which may be regarded as an initial proxy, and is an improvement compared to the situation prior to the project.
- New Road Department policies and procedures were not completed due to anticipated reforms (this is now being supported by the follow-up East West Highway Improvement Project 4).

Outcomes

- Full information concerning both the national and secondary road network in Georgia has been entered in the Road Data Bank (RDB). Information concerning only 30% of the national network was available at appraisal, while there was no information at all on the secondary network. This information was updated in 2010 and 2013.
- Road planning is conducted on a timely and multi-year basis using the RDB.
- Based upon a feasibility study and business plan, a pilot test was successfully conducted for the E60 rest areas and border crossings. As a result, several rest areas were created, financed out of the Government's budget, along the East-West highway.
- While there is little evidence in the ICR to demonstrate improved management capacity of the road network, the project task team informed IEG that, based upon the capacity development of this first E60 highway project, stronger and better road management practices are evident in subsequent Bank-financed projects based on the institution-building activities supported by this operation. These improved practices include the use of the international roughness index (IRI). The team's comments clarify that the Department has been able to plan, and is now simultaneously implementing, a number of large scale projects, including four further improvements to the East-West Highway, a regional roads improvement project, three secondary and local roads projects, and a number of other schemes, all financed in part by external partners. While not all this strengthening of capacity can be attributed to the project under review, it nonetheless played a significant part.
- There is also little evidence in the ICR concerning the enhanced capacity of the local road construction industry. The project team clarified that workshops under this project have contributed to the recent increased participation in international competitive bidding by the local road construction companies. In a recent pilot Design-Build contract, a local road company was a successful bidder. According to the team, there is increased competition among contractors, with local companies representing a significant majority of bidders for contracts financed by external partners requiring modern technologies. Again, these positive developments are not all directly attributable to this project, but it is reasonable to assume that the project activities made a contribution.

5. Efficiency:

The Economic Internal Rate of Return (EIRR) was calculated ex ante and ex post for (i) upgrading the E60 highway section between Agaiani to Igoeti (44.7% of the total actual project cost) and (ii) rehabilitation of the Rikoti tunnel including its bypass road (50.7% of the total actual project cost) respectively, by using HDM4. Both of the EIRRs were calculated based upon the comparison with the "without project" (i.e., "do nothing") scenario. The same key assumptions (e.g., 25 and 30 year evaluation periods for (i) and (ii) above respectively, and discount rate of 12% were used for ex-ante and ex-post EIRR calculations.

(i) Upgrading road section between Agaiani and Igoeti

The ex-post EIRR was 21.0%, slightly less than the ex-ante EIRR of 24.6%. The actual annual traffic growth rate is 10.6%, which is substantially higher than the estimated annual traffic growth of 6.3%, but actual construction costs (US\$26.9 million) were higher than the appraisal estimate (US\$25.1 million) and the construction period (more than two years between 2007 and 2009) was more than double the appraisal estimate of one year.

(ii) Rehabilitation of Rikoti Tunnel and Bypass Road

The Ex-post EIRR for the rehabilitation of Rikoti tunnel and its bypass road was 28.6%, which is less than the ex-ante EIRR of 32.5%. The actual annual traffic growth rate is 8.4%, which is higher than the estimated annual traffic growth of 7.0%. However, actual construction costs (US\$36.5 million) and the construction period (between 2009 and 2013) took more than the appraisal estimate (US\$28.5 million and between 2009 and 2011).

There were some administrative or operational inefficiencies. Delivery of part of the technical assistance was delayed, although action taken after the mid-term review enabled most of this to be recovered. The construction cost of the Rikoti Tunnel was 28% higher than estimated because additional measures to ensure European Union safety standards were incorporated only after signature of the construction contract. This, together with unforeseen weather conditions and the unexpected collapse of the existing concrete arch and soil in the middle of the tunnel, also increased the time required for construction.

Efficiency is assessed as **Substantial**.

(The table below only describes the EIRR for the upgrading of the road section between Agaiani and Igoeti.)

a. If available, enter the Economic Rate of Return (ERR)/Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation :

Rate Available?

Point Value

Coverage/Scope*

Appraisal	Yes	24.6%	89%
ICR estimate	Yes	21%	89%

* Refers to percent of total project cost for which ERR/FRR was calculated.

6. Outcome:

Outcome is rated **Satisfactory**. The project objectives are highly relevant and relevance of design is substantial. The efficacy of the highway improvements between Agaiani and Igoeti, including the Rikoti tunnel and bypass, and that of the capacity development activities, is rated substantial, as is efficiency.

a. Outcome Rating: Satisfactory

7. Rationale for Risk to Development Outcome Rating:

The risk to development outcomes is moderate. The E60 highway section between Agaiani and Igoeti was constructed without major quality issues, and rehabilitation of the Rikoti tunnel was conducted in accordance with European Union safety standards. The multi-year investment and maintenance plan supported by the project will also facilitate the routine maintenance to sustain the project outcome provided the maintenance budget receives sufficient allocations from the Government, which is confronted with limited fiscal space.

The capacity of the Road Department may be expected to be further enhanced by on-going and future Bank assistances as well as support from other development partners, such as the Asian Development Bank (ADB) and Japan International Cooperation Agency (JICA). However, there is still scope for improving the Department's implementation capacity, and collective actions among different agencies need to be taken to improve nation-wide road safety.

a. Risk to Development Outcome Rating: Moderate

8. Assessment of Bank Performance:

a. Quality at entry:

The project was prepared and delivered to the Board within a year. The preparation team learned from the past lessons in the Europe and Central Asia (ECA) Region, such as the need to pay careful attention to road network, management and maintenance, institutional ownership, and a phased approach in project design (corridor and framework approach). The highway section between Agaiani and Igoeti is strategically important for market access given that it is located close to the capital city of Tbilisi, and the Bank team took a leadership role in identifying the priority section through consultation with the Government. The engineering design at appraisal for upgrading the highway did not include over-detailed and complex technical specifications, which facilitated the smooth and flexible implementation of the project. The environmental and social considerations were adequately analyzed at the preparation stage (see Section 11a below). The physical risks were well identified, and mitigating measures incorporated in project design.

While design was ambitious in terms of capacity development, the desirability of a holistic approach is acknowledged. The project aimed to strengthen simultaneously the capacity of three different actors; the Government, the implementing agency and the local road construction industry. Although expected outcomes related to the local road construction industry were not well articulated, in the PAD, the project team stated that the expected outcomes were a better understanding of modern technologies, and a more active presence of that industry in the domestic market.

Given the seriousness of road accidents in Georgia, project's road safety dimension could have benefited from a more careful design, including enhancing the accident monitoring and recording capacity of the police department.

There were weaknesses in M&E design (see Section 10 below). Preparations for compliance with safeguards and fiduciary compliance were appropriate.

Quality-at-Entry Rating: Moderately Satisfactory

b. Quality of supervision:

The Bank supervision team was well staffed with the appropriate degree of technical expertise and included, as well as transport and engineering specialists, a senior social development expert . There were 13 supervision missions over the project's six-and-a-half year implementation period. Although there were five Task Team Leaders (TTLs), this did not affect continuity since the new TTLs were drawn from inside the team, and most of them had been involved from the preparation stage . The team took generally prompt measures to address issues such as delays and accidents in close collaboration with the Road Department . The highway section between Agaiani and Igoeti confronted no major construction problems . Environmental and social safeguard policies were well implemented (see Section 11a below) and fiduciary requirements complied with .

With respect to the Rikoti tunnel rehabilitation, the ICR states that expert advice and close supervision were supplied by the Bank. In July 2012, nearly three years after restructuring, the Government amended the construction contract to incorporate European Union (EU) tunnel safety standards (regarding the ventilation system, lighting, firefighting, etc.). This reflected the realization that, given their likely lifespan, the structures would require upgrading to meet EU standards . The supervision team was proactive in mobilizing a well-regarded tunnel expert to advise on the application of the new standards. Nevertheless, the incorporation of EU standards into the construction contract, together with other factors, led to the contract being extended several times and to a cost increase of 28%.

There were initial delays in carrying out some of the planned technical assistance activities to strengthen capacity in the Government, implementing agency and the local road construction industry. Just before and following the mid-term review, the Bank team was proactive in developing and implementing a detailed action plan to recuperate the time lost. Nonetheless, some activities did not generate their intended outcomes -- for example, a new Road Law -- while others (such as the procurement of the Road Asset Management System) had to be postponed until they could be supported by future Bank assistance .

Most M&E design weaknesses were remedied during the implementation of this project (see Section 10b below).

Quality of Supervision Rating : Satisfactory

Overall Bank Performance Rating : Satisfactory

9. Assessment of Borrower Performance:

a. Government Performance:

The ICR reports (page 22) that Government demonstrated strong commitment to the project . The short preparation period of less than one year was made possible through the understanding and cooperation of the Government. The Borrower contributed counterpart funding 81% in excess of that foreseen at appraisal, it financed the whole of Component 3 (Project Management, Monitoring and Evaluation), and 30% of components 1 and 2. These contributions are all the more noteworthy in that they took place during a period of economic slowdown. According to the ICR (page 22) the Government ensured smooth implementation of the project during the transfer of the Road Department from the Ministry of Economic Development to the Ministry of Regional Development and Infrastructure as part of the administrative reform and reorganization in 2009.

However, Government support in establishing the legal and regulatory framework for road management was less effective. The draft of a Road and Traffic Safety Law had been prepared under the project, but the Government which took office in 2009 did not adopt it (although, as the project team explained to IEG, the draft law was utilized to prepare a Road Safety Strategy). The fact that the need for European Union safety standards for the Rikoti tunnel was not foreseen by the Authorities increased the cost and time of the tunnel's rehabilitation.

Government Performance Rating Moderately Satisfactory

b. Implementing Agency Performance:

The implementing agency of the project was the Road Department . The institutional capacity of the Department was initially weak, and project management as well as communication skills were limited . The Department's capacity, however, increased significantly during project implementation, aided by the fact that the same team was maintained throughout. Technical specifications were updated and a road safety unit became operational. The rehabilitation of the Rikoti tunnel was challenging for the Department, due to the complexity of its design and lack of familiarity with European Tunnel Safety Standards . The Department relied on advice from international tunnel experts and the Bank missions when required .

Not all M&E design weaknesses were remedied during the implementation of this project (see Section 10b below). Compliance with safeguards policies was reportedly adequate, although the ICR does not contain a specific statement confirming compliance (see Section 11a below). There were no major or unresolved fiduciary issues (see Section 11b below).

Implementing Agency Performance Rating :	Satisfactory
Overall Borrower Performance Rating :	Moderately Satisfactory

10. M&E Design, Implementation, & Utilization:

a. M&E Design:

The M&E framework contains several output-oriented indicators, but few that could be used to measure outcomes or the quality of construction. Baseline data were available at appraisal for travel time and vehicle operating costs. However, M&E design (PAD, Annex 3) did not capture road safety or capacity development for the local road construction industry. Nor were there indicators to measure improved access resulting from project investments. Road accident statistics were not available by road segment despite the high rate of accidents in Georgia. The collection of such statistics was not within the remit of the agency responsible for implementing M&E (see below), but should have been done by the police. The Bank team could have been more proactive in exploring whether such information could have been obtained from other sources such as the insurance companies. The absence of internationally recognized indicators for road improvement projects - for example, the International Roughness Index - is also noteworthy.

b. M&E Implementation:

M&E implementation was, until 2009, the responsibility of the Transport Reform and Rehabilitation Center, housed in the Ministry of Economic Development. Following the reform and reorganization of 2009, this responsibility was shifted to the Road Department. The ICR contains almost no information on M&E implementation, except to note the addition of meeting safety standards in the Rikoti tunnel.

c. M&E Utilization:

No information is provided in the ICR on M&E utilization except to say (page 11) that "The outcome indicators of reduction in transit time and reduction in vehicle operating costs along Bank-funded road segments are used to monitor progress towards achievement of the CPS's Strategic Objective 2: Strengthening Competitiveness for Post-Crisis growth."

M&E Quality Rating : Modest

11. Other Issues

a. Safeguards:

The environmental category for this project is "B", and this category remains the same for the Additional Financing. In addition to Environmental Assessment (OP 4.01), the following safeguard policies were provisionally triggered at appraisal: Natural Habitats (OP/BP4.04), Pest Management (OP 4.09), Cultural Property (OPN 4 11.03, later revised to Physical Cultural Resources, OP/BP 4.11), and Forests (OP/BP 4.36).

Environmental Safeguards and Management: According to the ICR, an Environmental Assessment (EA) and an Environmental Management Plan (EMP) were prepared in compliance with OP 4.01, to mitigate and manage direct and indirect impacts of the construction activities. The EA and EMP were publicly disclosed in Georgia on September 15, 2006, and through the Bank's InfoShop on September 14, 2006. The final Environmental Impact Assessment (EIA) for the Additional Financing was disclosed on October 1, 2009.

The Road Department was charged with reviewing EAs and EMPs for all projects under the Department's remit, monitoring the compliance of construction works and associated contractors with approved EAs, EMPs, environmental standards and other environmental commitments, and supervision of the practical implementation of EMPs. A new environmental specialist was hired in the early years of the project and received relevant training. The Resettlement and Environmental Units were separated from their parent Divisions and merged into a separate

Environmental and Resettlement Division in the Road Department on April 1, 2013.

All environmental safeguards documentation was prepared, consulted upon and disclosed in compliance with environmental regulations, policies and procedures of the Government and the Bank (ICR, page 12). “No significant environmental adverse impacts were identified” (ICR, page 11). The most sensitive areas were in the vicinity of two villages where 11 monuments and archaeological sites had been identified during the desk-studies and site visits, and near another village in the flood plain of the river Ksani where there are fragments of riparian forests protected under the Forestry Code. Specific EAs and EMPs were prepared for these areas, enabling compliance with all triggered safeguards in order to mitigate and manage direct and indirect impacts of the construction activity .

Safety and health issues for the Rikoti tunnel construction workers were also identified during implementation. These included lack of appropriate clothing and protective gear, asbestos roofing used for shelters in the construction camp, and accumulation of polluted water during the washing of the tunnel. The ICR (page 12) reports that these issues were gradually resolved through the close supervision of the Bank and Road Department teams. A serious environmental hazard arose from the dumping of asbestos pipes together with the reinforced concrete waste, an action which was not in compliance with the Environmental Management Plan. The ICR reports that this issue was addressed by hiring a certified sub-contractor and through consultations with the local municipality and Environmental Protection Agency in Georgia. The contractor designated an area where the material containing asbestos was buried, and properly informed the general public. By project closure, the Road Department had received a letter from the Ministry of Environment and Natural Resources confirming compliance of the burial location with the national legislation.

There is no direct statement in the ICR that all environmental and related safeguards policies were satisfactorily complied with.

Involuntary Resettlement: Based upon the Resettlement Policy Framework and the Resettlement Action Plan together with public consultation, 18 private land plots (approximately 3 hectares in total) were identified for land appropriation, which is less than the appraisal estimate. Based upon a request by local residents, three additional plots of private land were identified during the project implementation. According to the ICR (pages 12-13), all due compensations was paid to the project affected people and no complaints were received .

There is no direct statement in the ICR that social safeguard policies were satisfactorily complied with .

b. Fiduciary Compliance:

Procurement: The major civil works for road and tunnel rehabilitations were procured through international competitive bidding. The tardiness of the decision to incorporate European Union Tunnel Safety Standards for Rikoti necessitated the mobilization of a sub-contractor, but the ICR (page 13) reports that all procurements, including those arising from unexpected issues, were carried out in accordance with Bank guidelines. No unresolved procurement issues remained at project closure, and there were no reported cases of misprocurement .

Financial Management: The ICR (page 13) reports that “There were no major issues in financial management....The interim financial reports submitted to and reviewed by the Bank during project implementation were found satisfactory, in a format acceptable to the Bank, and with minor or no issues identified . Annual audit reports were received on time and the auditor’s opinions were unqualified.”

c. Unintended Impacts (positive or negative):

d. Other:

12. Ratings:	ICR	IEG Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Satisfactory	
Risk to Development Outcome:	Moderate	Moderate	
Bank Performance :	Satisfactory	Satisfactory	

Borrower Performance :	Satisfactory	Moderately Satisfactory	The Government's support for the necessary reforms to the enabling legal and regulatory framework was limited, a moderate shortcoming.
Quality of ICR :		Satisfactory	

NOTES:

- When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.
- The "Reason for Disagreement/Comments" column could cross-reference other sections of the ICR Review, as appropriate.

13. Lessons:

The ICR has identified six lessons learnt from this project. The five most important these are listed below with some adaptation of language.

- **A phased approach with appropriate technical controls facilitates the construction of complex structures such as large bridges and tunnels.** In order not to underestimate the technical complexity of highway or tunnel construction, and hence to avoid substantial cost and time overruns, the Road Department is implementing a phased approach to road and tunnel construction in Georgia's East-West Highway Program. Each phase is supported by an interactive process in designing alignment alternatives, assessing technical, environmental and social impacts and cross-validation of design results by a design review from engineering firms
- **Updated safety standards enshrined in a national regulatory framework can help to avoid additional costs and delays.** Such costs and delays in the case of the Rikoti tunnel were caused by ad hoc standards such as those prevailing in Georgia.
- **Technical assistance activities aimed at modernizing legal frameworks, national standards, and human resource management are likely to be more effective if they benefit from a joint design by international and local experts.** In this case, several outputs turned out to be inapplicable, or have only limited applicability, because their design was not based on sufficient local knowledge.
- **The design of sophisticated information management system in the absence of a competitive local product market can lead to over-specification resulting in cost overruns.** In this case, the procurement of GIS-based Road Asset Management System (RAMS) was cancelled twice due to over-expensive financial bids in the first round and lack of responsive bids in the second round.

IEG adds a further lesson with respect to road safety.

- **Upgrading technical highway specification is a necessary, rather than a sufficient condition, to improve road safety.** Improved road safety requires concerted efforts among different agencies, including the legislature and the police force. It also requires adequate road accident statistics broken down by road segment. Such coordination and research can be expected to require considerable time, and is best initiated early in the project preparation stage.

14. Assessment Recommended?

Yes No

15. Comments on Quality of ICR:

The ICR is rated satisfactory overall, but with some important caveats. It provides a reasonably complete narrative of the project's physical investments and of the issues which arose during implementation. It also provides an evidence-based analysis of the impact of the investments on travel time and vehicle operating costs. However, the analysis of road safety and of capacity building (especially of the local road construction industry), both part of the development objectives, is relatively weak (though it is acknowledged that this is partly due to the ineffective monitoring of these dimensions during implementation as well as to design weaknesses in the M&E framework). The discussion of Bank and Borrower Performance could usefully have been expanded and deepened. Although the

coverage of safeguards policies is fairly thorough, there is no specific statement concerning compliance with the policies.

a.Quality of ICR Rating : Satisfactory