

Validation Report
February 2020

Kyrgyz Republic: CAREC Corridor 1 (Bishkek–Torugart Road) Project 3

Reference Number: PVR-649
Project Number: 42399
Loan Number: 2755 and 3204
Grant Number: 0418

Independent
Evaluation  ADB

Raising development impact through evaluation

ABBREVIATIONS

ADB	–	Asian Development Bank
CAREC	–	Central Asia Regional Economic Cooperation
EIA	–	environmental impact assessment
EIRR	–	economic internal rate of return
IPIG	–	Investment Projects Implementation Group
IRI	–	international roughness index
KJSNR	–	Karatal-Japaryk State Nature Reserve
km	–	kilometer
MOTR	–	Ministry of Transport and Roads
PRC	–	People's Republic of China

NOTE

In this report, "\$" refers to United States dollars.

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PROJECT BASIC DATA

Project Numbers	42399-023 and 42399-024	PCR Circulation Date	29 March 2019	
Loan/Grant Numbers	2755, 3204 and 0418	PCR Validation Date	Feb 2020	
Project Name	CAREC Corridor 1 (Bishkek-Torugart Road) Project 3			
Sector and subsector	Transport and information and communication technology	Road transport (nonurban)		
Strategic agenda	Regional cooperation and integration, Inclusive Economic growth, and Environmentally sustainable growth			
Safeguard categories	Environment	A		
	Involuntary resettlement	C		
	Indigenous peoples	C		
Country	Kyrgyz Republic	Approved (\$ million)	Actual (\$ million)	
ADB Financing (\$ million)	ADF: 55.00 (L2755) 10.80 (L3204) 4.30 (G0418)	Total project costs	88.00	82.15
	OCR: 0.00	Loan/Grant	70.10	64.55
		L2755	55.00	51.05
		L3204	10.80	9.36
		G0418	4.30	4.14
		Borrower	17.90	17.60
		L2755	15.00	n.a.
	L3204/G0418	2.90	n.a.	
	Beneficiaries	0.00	0.00	
	Others	0.00	0.00	
Cofinancier	-	Total cofinancing	0.00	0.00
Approval date	19 Sep 2011 (L2755)	Effectiveness date	L2755	18 Nov 2011
	2 Dec 2014 (L3204/G0418)		L3204/G0418	26 Mar 2015
Signing date	19 Sep 2011 (L2755)	Closing date	L2755	31 Mar 2016
	26 Dec 2014 ^a (L3204/G0418)		L3204/G0418	31 Dec 2017
Project officers	P. Seneviratne	Location	From	To
	S. Mitra	ADB headquarters	Dec 2010	Jan 2012
	T. Fukayama	ADB headquarters	Sep 2011	Oct 2015
	M. Eshenaliev	ADB headquarters KYRM	Oct 2015 Mar 2016	Feb 2016 To date
IED Review Director Team leader	N. Subramaniam, IESP S. Shin, Senior Evaluation Specialist, IESP*			

ADB = Asian Development Bank, ADF = Asian Development Fund, IED = Independent Evaluation Department, IESP = Sector and Project Division, KYRM = Kyrgyz Resident Mission, n.a. = not available in PCR, OCR = ordinary capital resources, PCR = project completion report.

^a Date of financial agreement in the PCR Basic Data.

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I. PROJECT DESCRIPTION

A. Rationale

1. Landlocked and with 60% of the country dominated by the Tian Shan and Pamir mountain systems, the Kyrgyz Republic has depended on road transport through a road network that covers all seven *oblasts* (provinces) that connect remote communities, and the Kyrgyz Republic to neighboring countries. The road network spans nearly 35,000 kilometers (km)—about 16,000 km of urban, rural, agricultural, industrial, and other roads; and 19,000 km of state roads. About 15% of the roads fall under categories I, II, and III, with most at least 7 meters wide and paved. About 92% of passenger and 59% of freight traffic was carried by this road network in 2009.¹

2. Most network links have adequate capacity to carry the expected traffic volumes in the next 5–10 years with the exception of intermittent bottlenecks in some sections caused by constrained geometry (steep grades, short-radius curves, narrow bridges, and shoulders). The road surfaces, safety devices, bridges, culverts, drains, etc., in several state roads have deteriorated beyond repair and require reconstruction or repair. In some, the road category had to be raised to take into account their new functions.

3. All routine maintenance and about half of the periodic and emergency works are undertaken by the Roads Maintenance Department's (RMD) provincial units (referred to as PLAUDs) and subregional units (DAIs), which report to the regional unit. The maintenance of the Bishkek–Osh and the Bishkek–Naryn–Torugart roads is managed by two separate departments under the RMD. Overall, 58 units are responsible for the maintenance of the state road network, with decision-making largely delegated to the PLAUDs. The RMD prepares the annual budget based on the regional requests, submits to the Ministry of Finance, and allocates the annual appropriation to the PLAUDS.

4. Traffic volume counts from various studies showed increased road usage year-on-year between 2007 and 2010, higher than the 5% average growth in the country's gross domestic product (GDP). This increased traffic volume is attributable to the number of registered private cars and to the increasing foreign-registered heavy goods vehicles from neighboring countries, especially the People's Republic of China (PRC). This growing road traffic could be a reflection of the rising vehicle-miles traveled as a result of better infrastructure.

5. The Kyrgyz Republic plays a crucial role in regional trade and transit traffic as its roads form part of Central Asia's transport network. However, several dilapidated network links and poor infrastructure management skills continue to hamper regional trade and economic growth (para. 2).

6. The Bishkek–Torugart road serves several important functions. It is part of the CAREC Corridor 1(c) extending from Troitsk in the Russian Federation to Kashi in Xinjiang Uygur Autonomous Region of the PRC, and is the shortest route from Bishkek to Kashi. It is the only north–south trunk road in the central Kyrgyz Republic connecting Naryn *oblast*, the poorest of the Kyrgyz Republic's seven *oblasts*, and the city of Naryn to the rest of the country.

¹ ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kyrgyz Republic for CAREC Corridor 1 (Bishkek-Torugart Road) Project 3—Sector Assessment (Summary): Roads* (accessible from the list of linked documents in Appendix 2). Manila.

It is the only road providing direct access to Issyk Kul Lake region, which is one of Central Asia's well-known tourist destinations. The costly, slow, unreliable, and unsafe travel caused by poor road conditions impedes the development of the entire corridor, particularly Naryn *oblast*.

7. In 2008–2009, the Asian Development Bank (ADB) financed the improvement of 114 km (Km 365 to Km 479) of the Bishkek–Torugart road. In 2010, the PRC government financed the improvement of 223 km (from Km 9 to Km 272), which was completed in 2014. In 2012, the Arab Coordination Group financed the improvement of 93 km (Km 272 to Km 365) of the road corridor. The proposed project would improve 60 km of the At Beit–Torugart section (Km 479 to Km 539) approaching the border between the Kyrgyz Republic and the PRC, the last unrehabilitated segment of the road corridor.²

B. Expected Impact, Outcome, and Outputs

8. The envisaged impact of the project by 2021 was increased regional trade, particularly between the Kyrgyz Republic and the PRC. The expected project outcome by 2017 was higher mobility for people and goods with origins and destinations in the road corridor between Naryn and Torugart.

9. The project's expected outputs by 2017 were (i) repaired, rehabilitated, or reconstructed 60 km section of the Bishkek–Torugart road (Km 479 to Km 539), meeting national category III road standards with special hydraulic features for protecting the environment and preserving the road structure; and (ii) improved infrastructure management skills of Ministry of Transport and Roads (MOTR) and other government agency staff.

10. The design and monitoring frameworks of the original financing, the additional loan, and grant financing were similar, except for the 1-year extension in timelines for achieving the impact, outcome, and first output targets.

C. Provision of Inputs

11. The original ADB financing was approved in June 2011, signed in September 2011, and became effective in February 2012. Loan closing was March 2016 although the actual closing date was in December 2017 with one extension. This coincided with the planned closing date of the additional loan and grant financing for the project. The additional loan and grant financing were approved and signed in December 2014 and became effective in April 2015. The actual closing date was in December 2017 as scheduled. The original loan and additional financing were all financially closed in May 2018.

12. At appraisal, the project cost was estimated at \$70 million equivalent inclusive of base cost, contingency, and loan financial charges. Of this amount, \$55 million (78.6%) was to be financed by ADB and \$15 million (21.4%) by the Kyrgyz government. The project incurred a cost overrun during implementation, which increased total project cost by \$18 million, or from \$70 million to \$88 million. The cost overrun was due to the revisions in the engineering design,³ increases in the cost of resource inputs such as the transport cost of materials,

² ADB. 2019. *Completion Report: CAREC Corridor 1 (Bishkek–Torugart Road) Project 3 in the Kyrgyz Republic*. Manila.

³ Government of the Kyrgyz Republic, Ministry of Transport and Roads. 2017. *Completion Report: Kyrgyz Republic CAREC Transport Corridor 1 (Bishkek–Naryn–Torugart Road) Project 3 Km 479–539*. Bishkek. The consultants and contractor initiated a review and analysis of the frost heave cracks that appeared on BNT Projects 1 and 2 during April–May 2013, which led to improved road designs and upgraded drainage systems.

and increase in the price of bitumen due to the additional tax on Kazakh bitumen. To finance the increased project cost, ADB provided additional financing of \$15.1 million (\$4.3 million as a grant and \$10.8 million as a loan). The additional government counterpart was \$2.9 million. At completion, the actual project cost was \$82.2 million, or 6.6% less than estimated at additional financing due to the savings generated from the following: (i) cost of supervision consultant (\$3.4 million); (ii) project management costs (\$0.7 million); (iii) capacity development costs (\$0.69 million); and (iv) financial charges (\$1.0 million). Civil works cost increased to \$76.4 million or about 10.7% higher than estimated in the additional financing, and 38.8% higher than estimated at appraisal (footnote 2).

13. At appraisal, approximately 885 person-months of consulting services would be required, with 435 person-months for construction supervision; 404 person-months for project management; and 46 person-months for capacity development. No breakdown by international or national consultant person-months was given. At completion, the construction supervision consultant provided 327.8 person-months of consulting services, comprised of 84.7 person-months international and 243.1 person-months national consultant services. No information was available on the type of consultants mobilized and the person-months consumed by type for project management and capacity development.

14. In the report and recommendation of the President (RRP) (footnote 1), the project was classified environmental category A, as a 35-km road section is in close proximity to the Chatyr Kul Lake protected area. The protected area is considered a critical habitat due to its designation under the Convention on Wetlands of International Importance or the Ramsar Convention (hence it is referred to as a "Ramsar site"). A full environmental impact assessment (EIA) was required, with ADB assisting the government in its conduct and preparation. The EIA showed that (i) the impacts during construction were temporary and reversible except for possible hazardous material spills; (ii) potential impacts during operations were greater as the road had a design life of 20 or more years, and pollutants entering the Chatyr Kul aquatic ecosystem could accumulate as the lake has no outlet; and (iii) long-term impacts due to increased traffic, vehicle emissions, and possible hazardous materials spills pose potential risks to the Chatyr Kul ecosystem.

15. The project did not require land acquisition or involuntary resettlement and was initially classified resettlement category C. It was later changed to category B to include provisions for potential resettlement of some kiosks with the establishment of a parking area. A resettlement plan was prepared for the relocation of 11 roadside mobile trailer kiosks, to provide rudimentary accommodation and refreshment facilities at the border holding area. This was located 100 meters from the road alignment at km 530 and 532. During implementation, there was a slight shift in project road alignment to avoid impact on people and structure. Subsequently, the resettlement category was reverted to C. The project was classified indigenous people's category C as there were no indigenous peoples in the project area.

The design of the BNT 3 Project was dramatically changed. As noted, the height of the alignment was 1.8 meters. Drainage was greatly increased in terms of both length and depth, and importantly, the drainage was put in place along the newly paved areas before winter. This was done for the Km 503 to Km 539 sections and there had been no significant cracking. The "fines" content was up to 10% for fill and up to 6% for subgrade. Collectively, these had substantially increased costs. There will still be some cracking, but the potential for cracking has been greatly reduced.

D. Implementation Arrangements

16. As envisaged at appraisal, the MOTR was the executing agency with its Investment Projects Implementation Group (IPIG) as implementing agency responsible for the day-to-day administration of project activities. The project completion report (PCR) had noted that the IPIG has experience in the delivery of various projects including ADB-funded projects. The IPIG was led by an experienced director and the office provided the needed expertise in various aspects of project planning, implementation, supervision, and monitoring including safeguards monitoring. The IPIG was able to complete the project in a timely manner. This validation assesses the project's implementation arrangements adequate and satisfactory. All 16 loan covenants were complied with.

II. EVALUATION OF PERFORMANCE AND RATINGS

A. Relevance of Design and Formulation

17. The PCR rated the project relevant. The project was consistent with the government's strategy in prioritizing the improvement of national and international transport links to increase trade, enhance economic growth and alleviate poverty. The project was also aligned with the National Strategy of Sustainable Development for the Kyrgyz Republic;⁴ ADB's Country Partnership Strategy 2013–2017; and Strategy 2020.⁵

18. This validation notes that in the government's Road Sector Development Strategy for 2007–2010, the Bishkek–Torugart road improvement was an action item but the government lacked the resources to implement the strategy.⁶ The project was part of the CAREC Corridor 1(c) (para. 6) and subsequently, with the assistance of multilateral and bilateral funding institutions, approximately 430 km of the Bishkek–Torugart road had been rehabilitated. The project road was the last segment to be rehabilitated to complete the Bishkek–Torugart road portion of the corridor.

19. On the project design, the PCR had noted the weaknesses in the original road design standards applied to the project. These same standards had been used in previous ADB-financed projects in the rehabilitation of adjacent road sections, and resulted in the cracking of the road surface due to the extreme low temperatures and freeze–thaw cycles. The project road would also exhibit the same weaknesses unless the design was immediately rectified before implementation (footnote 3). The improvement and correction in the design was one of the causes for the cost overrun and delay, hence the need for additional financing. However, this validation notes that by realigning the project road at Km 530 and Km 532, the need for the relocation of 11 trailers was avoided (para. 15). Based on the above discussions, this validation assesses the project relevant.

⁴ President of the Kyrgyz Republic. 2013. *National Strategy of Sustainable Development for the Kyrgyz Republic 2013–2017*. Bishkek.

⁵ ADB. 2013. *Country Partnership Strategy: Kyrgyz Republic, 2013–2017*. Manila; and ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank 2008–2020*. Manila.

⁶ Government of the Kyrgyz Republic, Ministry of Transport and Communications. 2007. *Road Sector Development Strategy for 2007–2010*. Bishkek.

B. Effectiveness in Achieving Project Outcome and Outputs

20. The PCR rated the project effective in achieving its outcome and outputs. The project at completion resulted in the higher mobility of people and goods between Naryn and Torugart. The road condition was improved with an International Roughness Index (IRI) 2, which was a significant improvement from IRI 12-14 before the project and better than the anticipated IRI 4 at appraisal. This resulted in a higher design speed of 90 km/hour, road safety facilities as designed and environmental protection measures implemented. There was a reduction in travel time between Naryn and Torugart of 2.5 hours better than the 4 hours expected at appraisal from the 2010 baseline of 6 hours. This validation notes that, as planned, a road safety audit was conducted wherein at least 90% of road safety recommendations were implemented.

21. The PCR noted that due to the improved project road conditions, vehicle operating cost and travel time cost savings would be on average about \$12 million per year during the project's economic life. By 2016, more than five companies were providing freight transport services in Naryn as targeted at appraisal with a 2010 baseline of two companies. The PCR noted the increasing traffic in the project road in line with the rapid socioeconomic and trade development. However, this validation takes exception to the finding that the actual traffic level is lower than the baseline figure developed at appraisal for the original loan in 2010 for the Ak Beit Pass–Torugart Pass road section. This was prior to the establishment of the Customs Union in July 2010, when trade between the PRC and the Kyrgyz Republic was at its peak.⁷ To ensure consistency in the analysis, the PCR noted that the traffic count from the 2011 survey was used as the baseline for the economic reevaluation.

22. The PCR noted that the capacity development component delivered training to MOTR staff on various topics not limited to environmental management, FIDIC contracts, road operation and maintenance, road project financing, and procurement and information system. The project assisted MOTR with institutional reforms and preparation of key legal acts subsequently enacted by the government. This included helping the government draft a new road sector development strategy, which was subsequently approved on 1 July 2016 by government Resolution No. 372. This validation determines that the project assistance on MOTR institutional reforms, preparation of legal acts, and drafting of the road sector development strategy were not anticipated activities under the capacity development component, which was intended primarily to (i) train and educate MOTR staff in the field; (ii) assist MOTR in the installation, delivery, and maintenance of regular training for road engineers and middle-managers; and (iii) to increase the capacity of the Kyrgyz Republic to transfer and adapt international technologies in the road sector (footnote 3). This could therefore be considered as additional outputs of the project over and above what was planned or intended.

23. The implementation of the environmental safeguards for the project was rated satisfactory.⁸ The project was category A, which was appropriate considering that 30 km of the upgraded road was in close proximity to a Ramsar protected wetland site of global importance. The EIA prepared and updated during project implementation, which considered the key risks and impacts, was adequate. Based on the monitoring reports, implementation performance was considered adequate although minor nonconformities linked to contractor performance were noted and subsequently addressed. As expected, even with the appropriate road safety facilities, road accidents were observed to have increased at project operation and as expected over the

⁷ Footnote 1, Appendix 12.

⁸ ADB (Independent Evaluation Department). 2019. Project Safeguard Assessment: CAREC Corridor 1 (Bishkek–Torugart Road) Project 3 in the Kyrgyz Republic. 20 August (internal).

life of the project due to higher travel speeds. The EIA and monitoring reports were appropriately disclosed on the ADB website and key stakeholder consultations were considered adequate and inclusive.

24. On resettlement, project performance was considered satisfactory although changes in its categorization (originally category C since no resettlement or land acquisition was expected at appraisal) occurred during implementation. Due to the resettlement of some roadside trailer kiosks (para. 15), the classification was changed to category B. A resettlement plan was prepared to the standards of ADB policy; however, this remained unimplemented for a year. With the realignment of the project road, the resettlement plan was not implemented, and the project was reclassified back to category C. No indigenous peoples were identified in the area before and during project implementation. On the whole, this validation assesses the project effective.

C. Efficiency of Resource Use

25. The PCR rated the project efficient as the recomputed economic internal rate of return (EIRR) of 12.1% at completion was only slightly higher than the 12% hurdle rate. At appraisal, the EIRR on the project road was estimated to be very low although no actual figure was given. Instead, the EIRR for the entire Bishkek–Torugart road corridor was estimated at 34%. This validation notes that at appraisal, the EIRR for specific road sections was computed, but the results were only descriptive, and no actual value was given. For the sections between Bishkek and the Kuvaki Pass (at Km 214) for example, the EIRR was considered robust and exceeded the 12% benchmark, although no value was given. For the Kuvaki Pass to Torugart pass (at Km 539) the computed EIRR was probably at least 12%. The methodology used for the computations of the EIRR was not described.

26. The PCR noted that at appraisal for the additional loan and grant financing, the recalculated EIRR was 12.3% using a different methodology than at original loan appraisal. The methodology used for the additional loan and grant financing was also utilized at PCR. This validation notes that there was no discussion on the difference between the two methodologies used. Given the higher actual project cost, delay in project completion, and the lower 2017 traffic volume as compared to the 2010 baseline traffic data, the recomputed project EIRR higher than 12% would not be valid. It is also noted that the estimates of vehicle operating cost and travel time cost savings were not satisfactorily explained although these are standard road project benefits.

27. On process efficiency, the project incurred delay in the project completion date by about 25 months and cost overrun of approximately \$12.1 million (para. 12). Based on the findings as discussed especially the unreliable EIRR recomputation, project delay, and cost overrun, this validation assesses the project less than efficient.

D. Preliminary Assessment of Sustainability

28. The PCR rated the project likely sustainable. The steady increase in the total state road maintenance budget of 6.6% on average per year was compliant with the loan covenant requirement. However, the allocated funds were insufficient to maintain all the roads to international standards considering the country's increasing road length. The government has been exploring other funding sources such as introduction of user charges and increase in the fuel excise tax, but there seems to be no government commitment on implementing such options.

29. The piloting of the first performance-based maintenance contract and its implementation under another ADB-funded project, and a hybrid rehabilitation and performance-based maintenance contract planned under another ADB-funded project, were noted. The MOTR has established a computer-based Road Asset Management System using a geographic information system platform. This validation finds MOTR's efforts toward ensuring that the country's roads infrastructures are properly maintained to be commendable. However, these efforts do not ensure that proper maintenance of roads will be attained. Government assurance is needed that the required road maintenance funding would be made available. The PCR itself acknowledged this funding insufficiency (para. 35).

30. Possible methods for improved road maintenance are being considered and piloted, including the development of a road asset management system and capacity building of MOTR and RMD staff. However, this validation assesses the project less than likely sustainable unless the core issue of sufficient road maintenance funding is resolved.⁹

III. OTHER PERFORMANCE ASSESSMENTS

A. Preliminary Assessment of Development Impact

31. The PCR rated the project's preliminary development impact highly satisfactory. The project generated significant economic benefits and stimulated local socioeconomic development. Data provided by the National Statistics Committee showed that in 2016, 1,167 businesses were registered and active in the Naryn region, with more than five companies providing freight transport services. The number of shops and/or kiosks in At-Bashy Rayon had increased from 110 in 2010 to 158 by 2015. The 11 trailer kiosks that provided services to truck drivers in the border areas became more active with the increase in traffic. The newly constructed customs building housed a cafeteria and duty-free shops. These developments show that the project had provided more income-earning and employment opportunities to local people, with incomes rising by approximately 50% in At-Bashy town from 2012 to 2016. This could be attributed to the increased income from salaries, agricultural production, and working opportunities (PCR, Appendix 13).

32. This validation notes that the number of businesses registered in the Naryn Region exceeded the target of 350 from the baseline figure of 250 for 2021. This indicates that the project road has contributed substantially to the increased economic activity in the Naryn Region considering the increase in the number of registered businesses as an impact performance indicator.

33. There was also a significant increase in foreign trade between the Kyrgyz Republic and the PRC, with the total value of imports and exports increasing from \$81 million in 2000 to \$5,677 million by 2017. By volume, trade between the Kyrgyz Republic and the PRC increased from 0.2 million tons in 2006 to about 1.8 million tons by 2016. This upsurge in foreign trade has resulted in road traffic growth by, on average, 14% per year. This validation notes, however, that the PCR did not provide cross-border traffic data to show whether the targeted average daily traffic increase from 100 vehicles at baseline to 310 by 2021 is achievable.¹⁰

⁹ Management remains firm on the PCR findings and assessment on project sustainability (see Appendix 1).

¹⁰ In the design and monitoring framework for the original loan, the targeted increase in average daily cross-border traffic by 2020 was 400.

34. As the number of registered businesses in 2016 has already exceeded the 2021 target number, and based on the growth in trade volume between the Kyrgyz Republic and the PRC, the cross-border average daily traffic may reach the target by 2021 of 310 average daily traffic. Thus, this validation assesses the project's development impact satisfactory.

B. Performance of the Borrower and Executing Agency

35. The PCR assessed the performance of the borrower and MOTR as executing agency satisfactory. The MOTR ensured that loan effectiveness requirements were met, and it closely coordinated and monitored project progress. The IPIG as implementing agency was responsible for day-to-day project management, and with the assistance of the supervision and other consultants, successfully facilitated project implementation and prepared timely monthly and quarterly progress reports. The PCR acknowledged that project implementation was delayed prior to the start of civil works due to the delay in the availability of counterpart funds. Subsequently, the government met all its financing obligations during project implementation. MOTR facilitated ADB's inception and review missions before and up to completion of the project.

36. This validation notes that the project experienced delays in mobilization due to the nonavailability of counterpart funds (paras. 29 and 35) and the government not being able to provide clearance of the site to the contractor. Also, the resettlement plan was not implemented within the 1-year period, which required updating of the compensation package for the affected peoples. Subsequently, with the realignment of the road, the resettlement of the 11 trailer kiosks was avoided. Counterpart funds were made available in a timely manner, except for the delay in its allocation prior to the start of civil works implementation. The government's counterpart funds for the additional loan and grant financing were made available in a timely manner as well, as no other problems were raised, based on the ADB mission back-to-office reports. In view of the above, this validation rates the performance of the borrower, and executing and implementing agencies satisfactory.

C. Performance of the Asian Development Bank

37. The PCR assessed the overall performance of ADB satisfactory. ADB support during project preparation and consideration of additional loan and grant financing was adequate. The project was administered and supervised from ADB headquarters with assistance from the Kyrgyz Resident Mission. In October 2015, overall project administration was delegated to the resident mission, which resulted in closer coordination with MOTR and enhanced project monitoring and administration. ADB conducted 16 project review and administration missions, including the inception and midterm review missions. Overall, ADB extended the required guidance and timely support to the government and MOTR in project implementation and responding to the government's requests.

38. This validation notes that during the fact-finding mission, ADB identified weaknesses in the detailed design of the civil works, which required improvements such as increasing environmental protection for the project road sections close to the Chatyr Kul lake. ADB also noted the increase in road construction costs and flagged the design omissions and errors of past projects that had caused cost overruns and delays. ADB agreed to procure the civil works on a design-build basis at a fixed price.

39. ADB approved the MOTR proposal for the preparation of the Road Sector Strategy and the legal documents related to institutional reforms and revising the road design standards. The protection measures for the Chatyr Kul Lake wetlands included an integrated system of

drainage ditches and spill retention ponds. Training on spill management was provided to the Karatal–Japaryk State Nature Reserve (KJSNR), the agency responsible for overseeing the lake and the surrounding area, as well as the local Road Maintenance Unit. The KJSNR also received equipment and land and water vehicles to facilitate their oversight role. ADB recognized the comprehensive efforts to protect the environment by hosting a site visit for regional environmental staff, during which presentations on on-site measures were provided as a model for environmental management of a pristine environment in a high-altitude cold climate.

40. The government recognized ADB's role in promptly providing advisories on project implementation and technical issues, and rated ADB's performance satisfactory. In view of the above, this validation assesses ADB performance satisfactory.

D. Others

41. In its PCR, the government assessed the project to be highly relevant, effective, efficient and sustainable. It recognized that the project realized its main objectives of improving transport conditions on the Bishkek–Torugart road corridor, facilitating regional trade between the Kyrgyz Republic and the PRC, and enhancing institutional capacity of the MOTR. The project has brought significant socioeconomic benefits to local residents, especially the poor. The government rated the project highly successful.

IV. OVERALL ASSESSMENT, LESSONS, AND RECOMMENDATIONS

A. Overall Assessment and Ratings

42. The PCR rated the project successful overall. The project was relevant as it was consistent with the government's strategy prioritizing the improvement of national and international transport links to increase trade, enhance economic growth, and alleviate poverty. The project was also aligned with the National Strategy of Sustainable Development for the Kyrgyz Republic (footnote 4) and ADB's Country Partnership Strategy, 2013–2017 and Strategy 2020 (footnote 5). Weaknesses in the original road design standards applied in the project were noted, as were the improvement and correction in the design that contributed to the cost overrun and delay. The project was effective, with the road condition improvement resulting in an IRI 2 and a higher design speed of 90 km/hour. Reduction in travel time between Naryn and Torugart to 2.5 hours was better than envisaged. The capacity development component delivered training to MOTR staff on various topics, and assisted MOTR with institutional reforms and preparation of key legal acts subsequently enacted by the government. The project was efficient, as the recomputed EIRR of 12.1% at completion was only slightly higher than the 12% hurdle rate. As to process efficiency, the project completion date was delayed by 25 months, and cost overrun was approximately \$12.2 million. The project was sustainable although the PCR noted the allocated funds to be insufficient to maintain all the roads to international standards considering the country's increasing road length.

43. Overall, this validation assesses the project less than successful. This validation has similar assessments with the PCR on the ratings on relevance and effectiveness. However, this validation assesses the project less than efficient as the recomputed EIRR was only marginally higher than the hurdle rate. Traffic volume at completion was lower than at baseline; the actual project cost was higher than envisaged; and there was a delay of approximately 25 months before project completion. The EIRR could in fact be lower than recomputed. This validation assesses the project less than likely sustainable, as there was no

assurance that the funding requirements for the maintenance of the project would be provided, although a 6.6% annual increase in the total state budget for road maintenance was noted (footnote 9). The table below summarizes the overall ratings of the PCR and this validation report.

Overall Ratings

Validation Criteria	PCR	IED Review	Reason for Disagreement and/or Comments
Relevance	Relevant	Relevant	
Effectiveness	Effective	Effective	
Efficiency	Efficient	Less than efficient	The recomputed EIRR was only marginally higher than the hurdle rate. With the traffic volume at completion lower than at baseline, and with the higher actual project cost and delay in project completion, the recomputed EIRR could in fact be lower than 12%.
Sustainability	Likely sustainable	Less than likely sustainable	There was no assurance from the government that the required funding for the project road maintenance would be available.
Overall Assessment	Successful	Less than successful	
Preliminary assessment of impact	Highly satisfactory	Satisfactory	
Borrower and executing agency	Satisfactory	Satisfactory	
Performance of ADB	Satisfactory	Satisfactory	
Quality of PCR		Less than satisfactory	Paras. 52–53.

ADB = Asian Development Bank, EIRR = economic internal rate of return, IED = Independent Evaluation Department, PCR = project completion report.
Source: ADB (IED).

B. Lessons

44. The PCR identified two major lessons from the project. The first is that the engineering design of the road during project preparation should be enhanced based on sufficient technical, geological, and climate surveys. The second is to provide additional incentives, such as adequate hardship compensation mechanism in the consultant remuneration, to resident engineers of the supervision consultant team who work permanently in remote, high-altitude areas with extreme climatic conditions that lack basic conveniences.

45. This validation identifies three specific lessons at the **project level**. First, the project road alignment should be fixed at project inception so that environmental, land acquisition and resettlement, and indigenous peoples' safeguards could be prepared more comprehensively. Poor design affects the conduct of environmental and other social safeguards studies, and their categorization according to ADB guidelines. Also, any revision in alignment that results in cost overrun and implementation delays connotes that the design at appraisal had not been thoroughly studied.

46. Second, the results of the prefeasibility analysis at appraisal should be clearly presented in the RRP, including information on traffic surveys and forecast; and the estimate of the project EIRR, including sensitivity analysis results. In this project, the result of the estimate of the EIRR for the project road was only descriptive, and the actual value was not given. It is crucial for the information to be presented, including how the EIRR for the project was computed.

47. Third, the capacity building component seems to have not been well planned. It focused primarily on the requirements of MOTR, while capacity building assistance including provision of necessary facilities and equipment assistance to the KJSNR was not initially considered. Considering its importance in protecting the Chatyr-Kul lake wetlands, this should have been included in the beginning to mitigate the negative environmental impacts of the project road section traversing the protected area.

C. Recommendations for Follow-Up

48. The PCR gave recommendations on trade facilitation, tourism development, and economic corridor development. This validation considers the provision of sufficient road maintenance funding paramount to ensure the sustainability of the project road. It is important that the Kyrgyz government consider and implement revenue-generating measures to ensure sufficient funding for road maintenance. This should be over and above various options in physically undertaking road maintenance such as performance-based management contracts.

49. With increased speeds and traffic volumes including heavy trucks, it is recommended that mitigation measures such as installation of road safety furniture in identified accident blackspots be considered. Traffic police should exert more efforts on traffic education of the community. This would require close monitoring and reporting on the occurrence of traffic accidents.

50. The revision of the country's road design standards should be considered especially for roads located in difficult areas where existing design standards may not be applicable. ADB could assist in this undertaking by developing a knowledge resource on road design standards, taking off from its experiences in the implementation of road projects in Central Asia. This would be invaluable in ensuring that the economic life of the road as designed is met.

V. OTHER CONSIDERATIONS AND FOLLOW-UP

A. Monitoring and Reporting

51. Given that traffic data on the Bishkek–Torugart road corridor seems inadequate, the MOTR should ensure that classified traffic counts and vehicle origin–destination surveys are undertaken periodically to monitor road usage. One of the difficulties cited in forecasting traffic volumes for the project road was the overall impact of road corridor traffic. Considering that the rehabilitation of the whole road corridor has been completed, road traffic behavior can be determined more accurately with newly generated data from traffic counts and origin–destination surveys.

B. Comments on Project Completion Report Quality

52. The PCR provided a detailed description of project design and implementation, the problems encountered, and the performance of the various stakeholders in the whole process. However, a number of inconsistencies were observed. The PCR observed that traffic on the project road was increasing (PCR, para. 33; and Appendix 12, para. 2) but subsequently

determined that actual traffic level was lower than the baseline figure of 151 vehicles. On the EIRR recomputation, the PCR determined that the resulting value of 12.1% was higher than the hurdle rate, which was true. However, further analysis showed that the recomputed EIRR seemed to be inconsistent with the PCR findings of lower traffic volumes, higher actual project cost, and delays in project implementation, which should imply a lower recomputed EIRR. With an EIRR that was already low at appraisal and at additional financing, the results were highly questionable. The increase in travel time cost savings seemed also disproportionate to the increase in traffic volumes.

53. On the rating for sustainability, the PCR assessed the project likely sustainable. However, it subsequently stated that even with the increase in the total state budget for road maintenance, the allocated funds were still insufficient to maintain all roads to international standards (para. 35). Based on the above evaluation, this validation assesses the PCR quality less than satisfactory.

C. Data Sources for Validation

54. The data sources for the validation included the project's RRP, PCR, and back-to-office report, including attached Aide Memoires of ADB missions, country strategy, project safeguard assessment, and CAREC Transport and Trade Facilitation Strategy 2020.

D. Recommendation for Independent Evaluation Department Follow-Up

55. The PCR recommended the preparation of the project performance evaluation report in 2019, while the government PCR recommended 2018. This validation recommends that the project performance evaluation report be prepared not earlier than 2020 to ensure that project benefits and traffic volumes are already stable and measurable.

APPENDIX 1: LINKED DOCUMENTS

PCR Validation Report: Kyrgyz Republic: CAREC Corridor 1 (Bishkek-Torugart Road) Project 3

1. CWRD Comments on Final PVR

Document available upon request.

2. IED Clarifications to CWRD Comments

<https://www.adb.org/sites/default/files/evaluation-document/563536/files/ied-response-cwr-d12755.pdf>