



Completion Report

Project Number: 43439-023
Loan Number: 2728
September 2017

Kazakhstan: Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program, Project 1

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Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit – tenge (T)

		At Appraisal (27 August 2010)	At Project Completion (29 February 2016)
T1.00	=	\$0.006792	\$0.002853
\$1.00	=	T147.23	T350.56

ABBREVIATIONS

ADB	–	Asian Development Bank
CAREC	–	Central Asia Regional Economic Cooperation
COR	–	Committee of Roads
CPS	–	country partnership strategy
CSC	–	construction supervision consultant
CSRN	–	consulting services recruitment notice
DMF	–	design and monitoring framework
DNP	–	defects notification period
EIRR	–	economic internal rate of return
EOI	–	expression of interest
GDP	–	gross domestic product
GRM	–	grievance redress mechanism
ha	–	hectare
HDM	–	Highway and development maintenance
IEE	–	initial environmental examination
IRI	–	international roughness index
km	–	kilometer
LARP	–	land acquisition and resettlement plan
LLP	–	limited liability partnership
m	–	meter
MFF	–	multitranche financing facility
MID	–	Ministry of Investment and Development
MOF	–	Ministry of Finance
MOTC	–	Ministry of Transport and Communications
NPV	–	net present value
PMC	–	project management consultant
PMU	–	project management unit
RAMS	–	road asset management system
TIDP	–	Transport Infrastructure Development Program
TOR	–	terms of reference
VOC	–	vehicle operating cost

GLOSSARY

<i>Akim</i>	–	Head of an <i>akimat</i>
<i>Akimat</i>	–	A municipal, district, or provincial government
CAREC Corridor 2	–	International transit corridor running from Kazakhstan to Azerbaijan, and Europe through the Caspian Sea to the west; to the Russian Federation to the north; to Uzbekistan to the southeast; and to Turkmenistan to the south.
Facility	–	Multitranche financing facility provided by the Asian Development Bank (ADB) to finance projects under the investment program.
Investment Program	–	Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program, financed by ADB with government counterpart funding.
Oblast	–	A local administrative unit analogous to a province.
Project 1	–	Refers to the scope financed by first project of the Multitranche Financing Facility to the Republic of Kazakhstan for Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program with government counterpart funding.

NOTES

- (i) The fiscal year (FY) of the government and its agencies ends on 31 December.
- (ii) In this report, "\$" refers to United States dollars, "T" refers to Kazakhstan tenge.

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BASIC DATA

A. Loan Identification

1.	Country	Kazakhstan
2.	Loan Number	2728-KAZ
3.	Project Title	Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program, Project 1
4.	Borrower	Republic of Kazakhstan
5.	Executing Agency	Ministry of Investment and Development
6.	Amount of Loan	\$283,000,000
7.	Project Completion Report Number	1668

B. Loan Data

1.	Fact-finding ¹	
	– Date Started	16 June 2010
	– Date Completed	25 June 2010
2.	Loan Negotiations	
	– Date Started	2 September 2010
	– Date Completed	4 September 2010
3.	Date of Board Approval	20 December 2010
4.	Date of Loan Agreement	22 August 2011
5.	Date of Loan Effectiveness	
	– In Loan Agreement	21 October 2011; 60 days after the date of the Loan Agreement
	– Actual	18 May 2012
	– Number of Extensions	3
6.	Closing Date	
	– In Loan Agreement	31 January 2016
	– Actual	29 February 2016
	– Number of Extensions	Not applicable
7.	Terms of Loan	
	– Interest Rate	Sum of London interbank offered rate and 0.60% as provided by Section 3.02 of the Loan Regulations, less a credit of 0.30% as provided by Section 3.03 of the Loan Regulations
	– Commitment Charges	0.15% per annum
	– Maturity (number of years)	20 years
	– Grace Period (number of years)	5 years

8. Disbursements

¹ No further appraisal missions (OM D11/OP) were conducted after January 2010.

a. Dates

Initial Disbursement 19 July 2012	Final Disbursement 29 February 2016	Time Interval 43.4 months
Effective Date 18 May 2012	Actual Closing Date 29 February 2016	Time Interval 45.4 months

b. Amount (\$ million)

Category	Original Allocation	Last Revised Allocation	Amount Canceled	Net Amount Available	Amount Disbursed	Undisbursed Balance^a
1. Works	242.30	242.30	74.60	167.70	143.26	24.44
2. Consulting Services	16.00	16.00	4.70	11.30	7.85	3.45
3. Unallocated	24.70	24.70	24.70	0.00	0.00	0.00
Total	283.00	283.00	104.00	179.00	151.11	27.89

^a This amount was canceled at the loan closing date of 29 February 2016.

9. Local Costs (Financed): Not applicable

C. Project Data

1. Project Cost (\$ million)

Cost	Appraisal Estimate^a	Actual
Foreign Exchange Cost	333.00	173.45
Local Currency Cost	0.00	0.00
Total	333.00	173.45

^a The project cost was not split into foreign exchange and local currency categories at appraisal.

2. Financing Plan (\$ million)

Cost	Appraisal Estimate^a	Actual
Implementation Costs		
Financed by the borrower	50.00	22.34
Financed by ADB	283.00	151.11
Total	333.00	173.45

^a No interest during construction.

ADB = Asian Development Bank.

3. Cost Breakdown by Project Component (\$ million)

Component	Appraisal Estimate	Actual
A. Base Costs		
1. Civil works	271.40	163.51
2. Construction supervision	8.80	4.94
3. Project management and institutional support	8.20	5.00
4. Land acquisition and resettlement	17.20	0.00
Total Base Cost	305.60	173.45
B. Contingency		

Total Contingencies^a	27.00	0.00
Total Project Cost	333.00	173.45

4. Project Schedule

Item	Appraisal Estimate^a	Actual
Civil Works		
Km 372.6–422 (49.4 km)		
Invitation for Bids	October 2010	23 December 2011
Contract Award Date	February 2011	30 April 2012
Completion Date	December 2013	5 December 2014
Km 422–472.8 (50.8 km)		
Invitation for Bids	October 2010	23 December 2011
Contract Award Date	February 2011	30 April 2012
Completion Date	December 2013	17 November 2014
Km 472.8–514.4 (41.6 km)		
Invitation for Bids	October 2010	23 December 2011
Contract Award Date	February 2011	30 April 2012
Completion Date	December 2013	8 September 2014
Km 573.6–632.3 (58.7 km)		
Invitation for Bids	October 2010	23 December 2011
Contract Award Date	February 2011	9 August 2012
Completion Date	December 2013	17 November 2014
Consulting Services		
Construction Supervision Consultant		
Recruitment Notice	November 2010	26 January 2012
Contract Award Date	February 2011	15 November 2012
Completion Date	December 2013	31 January 2016
Project Management Consultant		
Recruitment Notice	November 2010	2 April 2012
Contract Award Date	February 2011	27 March 2013
Completion Date	December 2013	31 January 2016

km = kilometer.

^a Source: ADB. 2010. *Periodic Financing Request: Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program, Tranche 1*. Manila.

5. Project Performance Report Ratings

Implementation Period	Performance Indicator Ratings
From 18 May 2012 ^a to 31 December 2012	<i>Potential Problem</i>
From 1 January 2013 to 30 June 2013	<i>Potential Problem</i>
From 1 July 2013 to 31 December 2013	<i>On track</i>
From 1 January 2014 to 31 December 2014	<i>On track</i>
From 1 January 2015 to 31 December 2015	<i>On track</i>
From 1 January 2016 to 30 March 2016 ^b	<i>On track</i>

^a Effectiveness date.

^b Up to preparation of loan milestone event to close the loan account, which was sent to ADB Controller's Department with effective closing date of 29 February 2016, reflecting the disbursement date of the last withdrawal application.

D. Data on Asian Development Bank Missions

Name of Mission ^a	Date ^a	No. of Persons	No. of Person-Days ^b	Specialization of Members ^c
Fact-finding ^d	16–25 June 2010	6	30	a (2), e, f, g, i
Consultation	26–29 July 2010	2	8	a,
Special loan administration 1	4–11 October 2011	4	12	a (2), h (2), i
Project review 1	9–16 February 2012	6	12	a (2), c, h (2), i
Project review 2	25 September–9 October 2012	3	6	a (2), i
Special loan administration 2	3–12 April 2013	4	5	a (3), h, i
Midterm project review	3–11 June 2013	3	3	a, h, i
Project review 3	21–30 October 2013	5	10	a,b,g,h,i
Project review 4	19–24 May 2014	3	6	a, d, f
Project review 5	29 September–4 October 2014	5	5	a (2), b,h,i
Project review 6	2–9 March 2015	4	8	a,b, h, i
Project review 7	25–30 May 2015	5	20	b,f (2), g, h, i
Project review 8	12–22 October 2015	6	12	a (2), b,h (3)
Project completion review ^c	27 April–3 May 2017	2	10	h, i

a = transport specialist, b = public–private partnership specialist, c = advisor, d = portfolio management specialist, e = legal, f = environmental safeguards specialist, g = resettlement safeguards specialist, h = project administration officer, i = operations officer.

^a All missions for this project were combined with other projects in Kazakhstan. The mission dates cover all Asian Development Bank projects in Kazakhstan.

^b Number of person-days allotted for the project.

^c Specialization of members and not position titles.

^d No appraisal missions took place after January 2010 following the *Operations Manual* on Policies and Procedures (OM D11/OP).



KAZAKHSTAN CENTRAL ASIA REGIONAL ECONOMIC COOPERATION CORRIDOR 2 (MANGYSTAU OBLAST SECTIONS) INVESTMENT PROGRAM, PROJECT 1



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I. PROJECT DESCRIPTION

1. The Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program, Project 1¹ was intended to increase transport connectivity and efficiency in Kazakhstan's Mangystau Oblast through shorter travel time, lower freight costs, and lower road crash rates. Road efficiency improvements and safety along the corridor would contribute to sustainable economic development and regional cooperation among Central Asia Regional Economic Cooperation (CAREC) neighboring countries. To realize this objective, the project constructed 200.5 kilometers (km) of road along the Manasha–Shetpe highway in Mangystau Oblast. Construction was completed in December 2014. The project design and monitoring framework (DMF) is in Appendix 1.

2. The Asian Development Bank (ADB) approved a loan of \$283 million on 20 December 2010 to finance the project. Kazakhstan's Ministry of Transport and Communications (MOTC) was the executing agency of the project at appraisal, and the Committee of Roads (COR) under MOTC was the implementing agency. During project implementation, the government reorganization in August 2014, among others, abolished MOTC and created the Ministry of Investment and Development (MID) that absorbed its functions. MID became the executing agency. COR retained its role as the project implementing agency under MID.

3. The project was the first under the CAREC Corridor 2 (Mangystau Oblast Sections) Investment Program,² which covers the reconstruction of 790 km of unpaved roads in Mangystau Oblast. The investment program roads connect Kazakhstan to Azerbaijan, and Europe through the Caspian Sea to the west; to the Russian Federation to the north; to Uzbekistan to the southeast; and to Turkmenistan to the south. Mangystau Oblast is Kazakhstan's major oil- and mineral-producing region. Aktau, its capital city, acts as a regional hub for transporting oil and minerals to Europe and Asia as well as for dry cargoes, and for transit traffic connecting the surrounding oil field developments to other countries. Volume of cargoes traveled over gravel or dirt roads in Mangystau, or over highways that were partially paved with severely deteriorated and impassable sections is increasing. Travel along these roads was slow, expensive, and dangerous. The investment program aimed to mitigate these bottlenecks and risks, to help realize the economic potential of the country and the region.

4. ADB approved a multitranche financing facility (MFF) on 28 September 2010, for an amount not exceeding \$800 million, to contribute to financing this investment program. The loan for this project was tranche 1 of the MFF. Appendix 2 presents the summary of the projects under the investment program that the MFF financed.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

5. The project's overall design was relevant at appraisal. It addressed poor quality of road assets, high transport costs, road safety issue, longer travel time, and other transport issues. The project objective of increasing transport connectivity and efficiency in Mangystau Oblast to contribute to sustainable economic development and regional cooperation of countries under

¹ ADB. 2010. *Periodic Financing Request: Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program, Tranche 1*. Manila.

² ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranche Financing Facility to the Republic of Kazakhstan for Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program*. Manila.

CAREC was strategically aligned with (i) the Government of Kazakhstan's Transport Infrastructure Development Program (TIDP) for 2010–2014,³ which develops an efficient transport system to be integrated into the international transport system; (ii) ADB's Strategy 2020,⁴ which identifies transport infrastructure as a core area of ADB operations; and (iii) CAREC Transport and Trade Facilitation Strategy,⁵ which includes CAREC Corridor 2 (the project road being part of it) among the identified six corridors.

6. The project's overall design remained relevant at completion. It continues to be consistent with (i) Kazakhstan's Transport Strategy 2020⁶ and Nurly Zhol Program for 2015–2019;⁷ (ii) ADB's Strategy 2020 and country partnership strategy (CPS), 2012–2016 for Kazakhstan,⁸ which supports modernizing the country's transport and logistics system; and (iii) updated CAREC Transport and Trade Facilitation Strategy 2020,⁹ which emphasizes a more integrated approach to improving transport and logistics infrastructure and promoting trade facilitation.

7. The project preparation was adequate. It has demonstrated the government's ownership of the project (para. 47). MOTC's Mangystau Oblast Roads Department assigned the road design preparation to the state design institutes, such as KazNIIPI Dortrans Limited Liability Partnership (LLP) and KazDorProect LLP. The road designs¹⁰ complied with the country's requirements. The state project examination authority, GosExpertisa, reviewed the preliminary design, and the state Agency of Construction Affairs approved them in February 2011. MOTC prepared the preliminary environmental assessment and basic surveys for land acquisition and resettlement plans. MOTC's active involvement continued during implementation until project completion, as it monitored the project progress, visited the project sites, and assessed the quality of the roads before taking over road operations and before the issuance of the performance certificates at the end of defects notification period (DNP) (para. 12).

8. The project preparation was consultative. As part of technical and safeguards due diligence, the project management unit (PMU) conducted consultations with the key stakeholders, including villagers, affected persons, local nongovernment organizations, local authorities, and government agencies. In addition to public consultations, the project team conducted socioeconomic surveys to ensure that local residents' needs were incorporated in the project design. Consultations continued during implementation up to project completion. ADB financed the services of individual consultants to update the safeguards reports and to conduct economic analysis for the project.

9. At appraisal, the project adopted for its DMF the impact and outcome statements and performance indicators of the overall investment program. At project completion, the project DMF remained valid. Its overall project output-outcome results chain remained logical. The completed

³ Government of Kazakhstan. 2010. *Transport Infrastructure Development Program (TIDP) for 2010–2014*. Astana.

⁴ ADB. 2008. *Strategy 2020: The Long-Term Strategic Framework of the Asian Development Bank, 2008–2020*. Manila.

⁵ Central Asia Regional Economic Cooperation. 2007. *CAREC Transport and Trade Facilitation Strategy*. Manila.

⁶ Government of Kazakhstan. 2014. *State Program for the Development and Integration of the Infrastructure of the Transport System of the Republic of Kazakhstan until 2020*. Astana.

⁷ Government of Kazakhstan. 2015. *State Program for Infrastructure Development "Nurly Zhol" for 2015–2019*. Astana. The main direction is to develop the transport network and integrate into the world transport system.

⁸ ADB. 2012. *Country Partnership Strategy: Kazakhstan, 2012–2016*. Manila. There was no country strategy and program or country partnership strategy between 2006 and 2012 for Kazakhstan.

⁹ ADB. 2014. *CAREC Transport and Trade Facilitation Strategy 2020*. Manila. This was endorsed by all 10 CAREC countries at the 12th CAREC Ministerial Conference held in Astana, Kazakhstan in October 2013.

¹⁰ The design followed the Russian national standard construction codes and regulations (GOST-SNiP), harmonized with the American Association of State Highway and Transportation Officials design standards.

200.5 km of road contributed to the achievement of the intended outcome of increased connectivity and efficiency, such as reduced average travel time, reduced vehicle operating costs (VOCs), and reduced incidence of road crashes (paras. 46-50, Appendix 1).

B. Project Outputs

10. The project reconstructed 200.5 km of the Manasha–Shetpe road section (Km 372.6–514.4 and Km 573.6–632.3) in Mangystau Oblast. It also strengthened the capacity of MOTC and subsequently MID for project management (Appendix 1).

11. **Road Development.** The 200.5-km road works were substantially completed by December 2014 for less than the original estimated cost while meeting the international roughness index (IRI) requirement of less than 4 m/km as intended at appraisal. The pavement category was improved from category III to category II (two-lane asphalt concrete pavement with 3.75-m lane width and 3.75-m shoulder width). The pavement design provided for 13-ton axle loads from the original 8 tons loading, and a speed of 120 km/hour from the original 60 km/hour as designed at appraisal (Appendix 3). Road safety facilities were in place. Additional roadside facilities, such as seven gender-sensitive toilets, eight sheltered bus stops, five rest areas, 14 cattle crossings, and five pedestrian overpasses were constructed.

12. The works contracts had final variation to adjust the actual works quantities compared with the quantities set out in the original bidding documents. These minor variations, e.g., road traffic markings, further enhanced the technical design. Price adjustment was done due to price escalation of road construction inputs, particularly labor inputs, as provided for in the contracts. Construction Supervision Consultant (CSC) issued the taking-over certificates for all contracts upon its approval and the approval of the working commission,¹¹ after works were substantially completed. CSC issued performance certificates to the contractors of the three road sections after all defects were rectified, at the end of the DNP. CSC will issue the performance certificate for the first road section once outstanding defects have been rectified by the end of this contract's extended DNP in 2017. Appendix 4 provides the details for each works contract.

13. As required by the contracts, the contractors prepared and implemented the HIV and human trafficking awareness programs in early 2014. The medical firm engaged by the contractors prepared the materials on HIV and conducted training programs for workers in the contractors' camp sites.

14. **Capacity Strengthening.** The project strengthened the capacity of MID (MOTC) on project management. The PMU was established and effectively functioning (para. 25).¹² MOTC delivered the design of tranche 2 project on time.¹³ On the road asset management, the World Bank-financed road asset management system (RAMS) was developed and will be pilot-tested by end of 2017. Software and hardware tools were purchased; inventory of road assets was completed; and database building, preparation of planning tools for appropriate maintenance and

¹¹ The working commission consisted of representatives from the Committee of Roads, Zhol Laboratory, KazAvtoZhol, Kazakhavtodor, PMC, contractors, and CSC. This commission inspected the quality of completed roads compared with technical specifications, and identified outstanding defects to be rectified during DNP.

¹² Although MOTC had gained the needed experience in managing externally funded projects, its staff turnover required ADB's and PMC's assistance. ADB staff coached on works procurement and consultant recruitment. The PMC conducted the on-the-job training on project administration for MOTC staff—this training was cost-effective and productive as the staff was involved in actual work processes, and further improved the working relationship among staff within the main office and in the oblast.

¹³ Tranche 3 project is currently not a government priority project.

rehabilitation decisions, and manual preparation are ongoing. The RAMS will be implemented at central level (COR and KazAvtoZhol JSC) and in 14 oblasts—training is ongoing. On performance-based contract for routine maintenance, the project preparatory TA is ongoing to prepare the ensuing project to be funded by ADB.

C. Project Costs

15. At appraisal, the total project cost was estimated at \$333.00 million: \$271.40 million (81.5%) for civil works, \$17.00 million (5.1%) for consulting services, \$17.20 million (5.2%) for land acquisition and resettlement, and \$27.40 million (8.2%) for contingency. ADB provided a loan for \$283 million to finance the 200.5 km of road works and consulting services, while the government provided the counterpart funds of \$50 million to finance taxes and land resettlement and acquisition costs. The contingency was for physical and price adjustments. No cost on interest during construction was included in the project cost following loan agreement. The cost by component and the financing plan are in Appendix 5.

16. During project implementation, loan proceeds of \$104 million were canceled at the government's request in July 2014. These were savings in works contract amounts which were derived primarily from the lowest evaluated bid prices of all four contract packages that were lower than the engineer's estimated costs (para. 33). The available financing, after partial loan cancellation, was adequate to finance the works and the services of the consultants.

17. At completion, the project cost was \$173.45 million, 52% of the total project cost estimated at appraisal in nominal terms, with \$163.52 million (94%) for civil works and \$9.93 million (6%) for consulting services. There was no cost incurred for land acquisition and resettlement since the land was state-owned and the affected leaseholders were provided with replacement plots with complete land transfer documents (para. 68). There was an average downward adjustment of 7.3% to the total contract value of all four works contracts due to variations, and a 2% upward adjustment due to price escalation (para. 12). For consulting services, the CSC contract amount remained the same at completion; its contract variations had no cost implications. The program management consultant (PMC) contract amount increased by 10% for additional tasks¹⁴—the increase was within the budget allocation for consulting services. Unutilized amount at closing was cancelled (Appendixes 3–4).

D. Disbursements

18. Disbursement of the ADB loan proceeds followed ADB's *Loan Disbursement Handbook* (2015). The direct payment procedure was applied for works and consulting services contracts. An imprest account was not required.

19. The PMU had an assigned qualified staff to facilitate prompt disbursements in coordination with the Ministry of Finance (MOF) and ADB. The project team used eStar¹⁵ to upload applications for loan withdrawals, which expedited disbursements. The PMU's access to the ADB Loan Financial Information System website assisted its staff in monitoring disbursement achievement against projections.

¹⁴ Additional tasks include the preparation of due diligence reports for the additional Zhetybay–Zhanaozen road section under Tranche 2 project and the conduct of environment audit of the government-financed road construction near the Kyzylsai State Regional Nature Park in Mangystau Oblast.

¹⁵ eStar stands for electronic storage and retrieval. It is an electronic document repository and sharing system for ADB documents.

20. Loan disbursement was late due to delayed contract awards as the loan was declared effective 1.4 years after approval. After the advance payments were made in July 2012, disbursements did not progress well, as the mobilization of materials was delayed (paras. 22-23). The low disbursements resulted in a project performance rating of *potential problem* until the second quarter of 2013. After resolving the mobilization delays, disbursement progressed smoothly from the third quarter of 2013 until loan closing, consistently resulting in an *on track* project performance rating. The loan account was financially closed on 29 February 2016, within the winding-up period, with total disbursements of \$151.11 million (53% of the approved loan amount). Contract awards and disbursement of the loan proceeds are presented in Appendix 6.

E. Project Schedule

21. The loan was approved on 20 December 2010, but it became effective only after 1.4 years. The internal governmental procedures delayed the loan effectiveness as it required the (i) issuance of a Presidential Decree before signing a loan, (ii) ratification of the signed loan agreement by the Parliament of Kazakhstan before declaring the loan effective, and (iii) compliance to the new requirement for legal, scientific, and linguistic review. The loan was finally declared effective on 18 May 2012, with loan closing scheduled on 31 January 2016. The government initiated some measures to streamline procedures in 2014, which reduced the number of months for loan signing to 4 months after loan approval and effectiveness to 5 months after loan signing for subsequent projects.

22. At appraisal, the works contracts were expected to be awarded by February 2011 and completed by December 2013. During implementation, due to delayed loan effectiveness, the contracts of the three road sections from Manasha to Say-Utes (Km 372.6–514.4) were awarded in May 2012 while that of the fourth road section (Km 573.6–632.3) was awarded in August 2012. Each works contract period was about 750 days, on average, with 730-day DNPs.

23. The overall commencement of works was delayed due to the slow mobilization of equipment, machinery, and materials as well as the need to obtain permits. The works in the fourth section started on time in September 2012 as the Station 13 campsite had readily available equipment and a quarry, which the contractor used for its previous project. However, it took about 1 year for the contractors to complete its mobilization for the three road sections due to lack of efficient transport, particularly for materials from the quarry in the Station 13 campsite to the Station 5 campsite where the three road sections are located. To speed up the transport of materials, the contractors built a 1.6 km rail siding, connecting Station 13 campsite to the main railway, and a 1.5 km rail siding connecting the main railway to Station 5 campsite. However, the permit to link the rail sidings to the main railway line was delayed due to the procedural requirements of the national railway agency, Kazakhstan Termir Zholy. The latter issued the permits on 6 June 2013. When the rail sidings were connected, works proceeded without further difficulty until completion. The contractors revised the work program to meet the original completion schedule, so it could complete the works ahead of or on schedule.

24. At completion, the outputs were delivered within the scheduled work program and prior to the loan closing date despite initial delays. The project implementation schedule is in Appendix 7 and the chronology of major events is in Appendix 8.

F. Implementation Arrangements

25. MOTC was assigned as the executing agency at appraisal, with COR as its implementing agency. MOTC established a PMU and appointed the COR's deputy chairman as the program

director to head the PMU. The PMU consisted of the MOTC staff with specific tasks on technical, legal, financial management and auditing, procurement, safeguards, and project administration. The PMU was assisted by (i) Mangystau Oblast Road Department, which represented the COR in the field sites to ensure smooth project implementation; (ii) the Zhol (road) laboratory, which monitored laboratory test results related to road construction; (iii) the PMC,¹⁶ which assisted in managing the investment program and its projects; (iv) individual consultants, who assisted in preparing the due diligence reports for tranche 2 project; and (v) the CSC, which administered the works contracts as the engineer supervised the works progress, quality, and schedule.

26. On 6 August 2014, the government established the MID,¹⁷ which absorbed MOTC's functions. COR remained the project implementing agency¹⁸ until project completion (para.2). KazAvtoZhol JSC¹⁹ became involved during project implementation in 2013 to provide technical support to the COR following COR chairman's instruction. Later in 2014, its role was limited to monitoring safeguards compliance, and the Zhol (road) laboratory was appointed the COR's representative in the field. During the DNP, Kazakhavtodor²⁰ in Mangystau Oblast assisted in identifying further defects and monitoring the rectification of the outstanding defects.

27. These implementation arrangements were adequate to monitor and deliver the project outputs and achieve the project purpose. Appendix 9 shows the project's institutional arrangements.

G. Conditions and Covenants

28. The details of compliance with loan covenants²¹ are in Appendix 10. No conditions or covenants were modified, suspended, or waived. All covenants relating to sector, implementation arrangements, audit and finance, safeguards, social, and anticorruption were complied with.

H. Consultant Recruitment and Procurement

29. The project contract packages listed in Appendix 4 were procured as planned at appraisal. The general procurement notice was posted on 13 August 2010 on the ADB website. This was followed by advertising invitations for bids in December 2011 and consulting services recruitment notices (CSRNs) in January 2011 for the CSC and in April 2012 for the PMC.

30. Both the CSC and PMC recruitment used the quality- and cost-based selection method with a quality–cost ratio of 90:10 and full technical proposals, following ADB Guidelines on the Use of Consultants (2013) and the procurement plan developed for the project. The terms of reference (TOR) incorporated required safeguards reports and relevant loan covenants. The

¹⁶ The PMC assisted in the entire investment program, not only the tranche 1 project.

¹⁷ Decree of the President of Kazakhstan No. 875. 2014. *Reform of the Public Administration System of the Republic of Kazakhstan*. Kazakhstan.

¹⁸ As advised by the ADB Office of the General Counsel on 16 September 2014, there was no need to formally amend the loan agreement as the definition of MOTC included any successor, in this case the MID.

¹⁹ KazAvtoZhol JSC was established in February 2013 as the national operator for all republican roads. On 27 October 2015, the law on the national road operator was amended declaring KazAvtoZhol JSC as the sole operator for the (i) repair and maintenance of national highways, as well as project management; and (ii) development of road infrastructure. <http://kazautozhol.kz/>.

²⁰ Kazakhavtodor, a republican state enterprise, was created by Decree #1266 on 9 December 1998 to manage international and republican roads. In 2000, its responsibility has been limited to the supply of maintenance services; the management functions were transferred to CTID and later COR.

²¹ ADB and the Government of Kazakhstan. 2011. *Loan Agreement between the Republic of Kazakhstan and the Asian Development Bank*. Astana (Loan 2728-KAZ).

procurement of works followed ADB's Procurement Guidelines (2007) and the procurement plan for the project. Works contracts were procured using international competitive bidding under one-stage and one-envelope procedure without prequalification. ADB's prior review procedures were followed. The bidding documents consisted of four contract packages, representing the four road sections. The ADB project team ensured that the bidding documents and the contracts incorporated relevant sections of ADB's Anticorruption Policy (1998) and environment management plans, as well as road safety features and relevant loan covenants.

31. The contract for the CSC was awarded to Dohwa Consulting Engineers Co. Ltd. (Republic of Korea) in association with Astana Engineering Centre LLP (Kazakhstan) in November 2012. COR, as agreed with ADB, appointed a representative of the Mangystau Oblast Road Department to serve as the interim engineer until the CSC had mobilized to reduce delays in issuing notices to commence to the contractors. The CSC recruitment was delayed because of CSRN reposting in January 2012 due to delayed submission of the evaluation of expressions of interest (EOIs) and the list of shortlisted firms.²² This required firms that submitted EOIs to reconfirm their interest either to submit new EOIs or to signify that the EOIs submitted earlier were still valid.

32. The contract for the PMC was awarded to Zhol-Sapa LLP (Kazakhstan), a consulting firm, in March 2013. The recruitment was delayed because (i) MOTC had to decide whether to recruit a firm or individuals, and appropriate TOR still had to be developed; and (ii) MOTC reduced the budget during Submission 1 stage, which required reconfirmation from those firms who submitted EOIs if they were still interested in providing services with a reduced budget. Part of the PMC's scope of work was to prepare submissions for the subsequent MFF tranche 2 periodic financing request. As the recruitment had been delayed, individual consultants²³ were engaged to assist the PMU prepare due diligence reports for tranche 2 of the MFF.

33. The first three contracts for the Manasha to Say-Utes sections (Km 372.6–514.4) were awarded to the winning bidder, Alsim Alarko Sanayi Tesisleri Ve Ticaret A. S. (Italy) in May 2012 (Appendix 4). The bid evaluation results showed the lowest evaluated bid prices below the engineer's estimates for contract 1 with 9 bidders, contract 2 with 9 bidders, and contract 3 with 10 bidders. COR prepared a separate bid evaluation report for the fourth contract because more time was needed to further evaluate the bid price offered by Alsim Alarko²⁴ at 49.34% below the estimate. The evaluation did not affect the other three contracts since the discount offered by a bidder was on a lot basis and not based on a combination of contracts. MOTC accepted the bidder's clarification on its bid price, and recommended the award of contract to Alsim Alarko. The bidder satisfied the capacity aggregated requirements of financial, technical and experience for the four contracts. ADB approved the award of the fourth contract to Alsim Alarko in August 2012. In summary, all four contracts were awarded to the same contracting firm (Appendix 4).

I. Performance of Consultants, Contractors, and Suppliers

34. **Consultants.** The CSC's overall performance was rated *less satisfactory*. The consultant carried out the key tasks indicated in the TOR, including (i) administering the four civil works contracts; (ii) supervising the contractors' works quality and schedule; (iii) monitoring

²² There was a submission lag due to the turn-over of PMU staff.

²³ In addition to the CSC and PMC, three individual consultants were recruited on social development and resettlement, environment, and economics using individual consultant selection method to assist the PMU in preparing the due diligence reports for the tranche 2 project.

²⁴ Alsim Alarko offered discounts to each of the four lots. Its bid prices were the lowest evaluated prices to each of the four lots. However, its bid price to the fourth lot was significantly low compared to the engineer's estimate and other bid prices. Hence, further evaluation was needed.

implementation of the environmental management plan and land acquisition and resettlement plan (LARPs); (iv) monitoring traffic and camp safety during implementation; and (v) preparing the required reports, such as a traffic management plan, monthly and quarterly progress reports, environmental monitoring reports, works completion report for each road section, and the project performance monitoring system report. To carry out the tasks, CSC had a site personnel structure in place—a head team (consisting of the resident engineer, pavement and artificial construction engineer, and quality and materials engineer) and a team for each of the four road sections (consisting of an assistant resident engineer, quantity engineer, quality and materials engineer, and a site inspector). However, frequent personnel changes affected timely submission of project progress and safeguards reports and efficient monitoring of works quality and progress.

35. The PMC's overall performance was rated *satisfactory*. The consultant carried out the key tasks indicated in the TOR, including (i) program and project management, (ii) procurement activities, and (iii) project preparation for the subsequent projects. The PMC ensured (i) quality outputs and timely completion within budget for projects, and (ii) compliance of each project with the loan covenants. The PMC submitted the required reports, such as progress reports, the inception report, 12 quarterly progress reports, and 24 monthly progress reports; and updated two environmental monitoring audit reports for the project. The PMC also prepared the environmental audit report on the road section at Kyzylsai Nature Park,²⁵ and the due diligence reports for the additional Zhetybay–Zhanaozen section under the tranche 2 project, and its subsequent procurement of works and recruitment of the CSC for that project.

36. The three individual consultants performed satisfactorily. They delivered quality due diligence reports on environment, resettlement, and economic analysis for the tranche 2 project as per their contracts.

37. **Contractors.** Overall, the performance of the contractors was *satisfactory*. The contractors fulfilled its obligations under each of the four contracts. To carry out the works and facilitate coordination in the four sections, the contractors established two campsites: (i) Station 13 campsite for one road section (Km 573.6-632.3) where the quarry was located, and (ii) Station 5 campsite for the three road sections (Km 372.6-514.4); each road section had a set of personnel and workers, related equipment and other facilities (para. 25). The contractors completed the road works following the original engineering designs and ahead of schedule for the three road sections and on schedule for one road section despite start-up delays. The contractors resolved issues in transporting materials by constructing railway sidings, and revised its work program and realigned its resources to meet the original completion schedule. The contractors implemented the environmental mitigation measures stipulated in its contracts, and cleaned up the project roads after completion. It will keep the projects facilities, e.g., campsites for forthcoming projects. The contractors implemented traffic safety management plans and camp site safety measures during construction, and implemented the HIV and human trafficking awareness program early in 2014. The contractors rectified outstanding defects for the three road sections by the end of their DNPs and received corresponding performance certificates issued by CSC. The contractor committed to rectify the remaining outstanding defects in the first road section by the end of the extended DNP in 2017 for that section only.

²⁵ The environment impact assessment covered the ADB-financed 200-km road sections and provided environmental requirements for the government-financed 60-km road section, which passes through the Kyzylsai Regional Natural Park. The COR engaged a licensed company “Kazecoproject” to conduct the environmental audit of its road section in September–November 2014 and proposed mitigation measures, which the Contractor “Niyaz–Mukhammed” implemented.

J. Performance of the Borrower and the Executing Agency

38. The overall performance of the borrower (the Government of Kazakhstan, represented by the MOF), the executing agency (MOTC, subsequently MID), and the implementing agency (COR) was *satisfactory*, despite lengthy governmental procedures to sign the loan agreement and declare loan effectiveness. The agencies carried out their assigned tasks and responsibilities from project inception through implementation to completion. The government reorganization in August 2014 changed the executing agency from MOTC to MID, but did not affect the project implementation arrangements as COR kept its role as the implementing agency until project completion and the PMU remained as tasked. The MOF, MID (then MOTC), and COR complied with all loan covenants during project implementation, including ensuring that counterpart financing was adequate and available as required, and funds were released for paying claims. PMU maintained separate records for the utilization of the ADB loan proceeds and government counterpart funds, as confirmed by the annual audit reports.

39. PMU implemented the project following (i) the loan covenants; (ii) ADB's guidelines on safeguards, anticorruption, disbursement, works procurements, consultant recruitment, and project administration; (iii) guidelines from the International Federation of Consulting Engineers on management of works contracts; and (iii) Kazakhstan's laws and regulations related to project administration. PMU and the ADB project team established a line of communication that facilitated smooth project implementation. MID (MOTC) demonstrated a strong sense of government ownership over the project (para. 7).

K. Performance of the Asian Development Bank

40. ADB's performance was *satisfactory*. Teamwork between ADB headquarters and the Kazakhstan Resident Mission facilitated effective project preparation, implementation, and completion. ADB collaborated with the MOF and MOTC to strengthen project readiness through preparing due diligence reports on safeguards and economic analysis. During project implementation, ADB provided substantial and timely support to PMU by (i) providing guidance in resolving implementation issues; (ii) promptly responding to requests to reallocate loan proceeds, which resulted in full utilization of the loan after cancellations; (iii) promptly uploading withdrawal applications through eStar for faster disbursements; (iv) promptly canceling part of the loan proceeds at the government's request; and (v) coaching its staff on ADB guidelines on procurement, consultant recruitment, project administration, contract administration, disclosure, and disbursements, as requested.

41. ADB monitored implementation progress and resolution of issues through missions, project progress and safeguards reports, and video or teleconferencing. ADB fielded 14 review missions (including midterm, special project administration reviews and safeguards) and carried out site visits with Mangystau Oblast COR officials and PMU. In general, the communication and coordination among ADB, MID (then MOTC), COR and PMU were smooth and effective.

III. EVALUATION OF PERFORMANCE

A. Relevance

42. The project was rated *relevant*. Its intended project outcome continued to be consistent with (i) the country's economic development and transport strategies and program; (ii) Strategy 2020 and the CPS; and (iii) the CAREC program (paras. 5–6).

43. Its overall project design was appropriate to help achieve the intended outcomes. Although the project DMF adopted the investment program's impact and outcome with some indicators not applicable to project 1, the performance indicators relevant to project 1 were properly laid down with measurable targets. Its overall project results chain was logical, i.e., the project delivered the reconstructed 200.5 km road with an IRI of less than 4 m/km, which road users or beneficiaries use to travel on or send their goods with increased efficiency in terms of travel time savings, transport cost savings, and reduced road crashes (paras. 9, 46-51).

44. The technical road design remained valid from appraisal to completion and was adequate to attain the project's intended outputs; minor variations enhanced the road design, and therefore enhanced project relevance (paras. 11–12, and Appendix 3).

45. Various stakeholders were involved during preparation, implementation, and completion of the project (paras. 7–8). The government had a strong ownership over the project (paras. 7, 39). The approach of resolving the issue in transporting equipment and materials by building the rail sidings and connecting to the main railway was innovative (paras. 23, 37).

B. Effectiveness in Achieving Outcome

46. The project was rated *effective* in achieving the intended outcome at appraisal. The upgraded 200.5 km of road with reduced roughness (paras. 11–12) resulted in increased road utilization, reduced travel time, reduced transport cost, and improved road safety (Appendix 1).²⁶

47. The use of the project road has increased to 1,447 vehicles per day²⁷ in 2016 from 1,036 vehicles per day in 2010, registering a 40% increase; or 290,067 average daily vehicle-kilometer²⁸ in 2016 along the 200.5-km length from 207,798 average daily vehicle-kilometer in 2010. This traffic includes both domestic and regional traffic²⁹ such as traffic to and from the Turkmenistan border, to and from the Uzbekistan border, and to and from the Aktau international port on the Caspian Sea. The articulated trucks that carry a cargo load of about 40 tons almost tripled from about 104 trucks per day in 2010 to about 282 in 2016, two years after the project completion in 2014. This is a reasonable indicator for increased regional traffic.

48. The average vehicle speed in 2016 was estimated to increase from about 39 kilometers per hour in the base case to 84 kilometers per hour after project opening. For traffic using the improved sections of the project, this implies an average time saving of some 2 hours 47 minutes over the 200.5-km length of the project. The overall discounted travel time savings will be approximately \$41 million over the evaluation period of the project.

49. The average VOC savings per kilometer for freight vehicles in 2016 based on Highway Development and Maintenance (HDM)-4 reevaluation were as follows: articulated truck (\$0.37/km), 3-axle truck (\$0.27/km), 2-axle truck (\$0.13/km), and pick-up truck (\$0.08/km). The average of these figures is close to the target average savings per km for freight vehicles in the entire investment program of \$0.21/vehicle-km from \$0.64/vehicle-km to \$0.43/vehicle-km. The overall discounted VOC savings (the main source of benefits) would be about \$92 million over the evaluation period of the project.

²⁶ ADB. 2017. Consultant's Report on the Post-Construction Economic Reevaluation of Project 1. Manila.

²⁷ Vehicles per day is a measure of traffic volume and is used as the unit for average annual daily traffic.

²⁸ The average daily vehicle-kilometer was not computed at appraisal, but was computed at completion. COR provided the traffic counts.

²⁹ No disaggregated domestic and transit traffic data is available at MID.

50. Based on the 3-year data supplied by COR, the average annual fatalities reduced by two fatalities per year compared to six fatalities per year in 2014, which could be considered representative of the accident casualties that would have been expected in the 2010 baseline case. The overall discounted accident savings resulting from the project are estimated to be \$8.85 million over the evaluation period of the project.

51. Additional roadside facilities, like gender-sensitive toilets provide convenience to road users, particularly long-distance truck drivers, and car and bus passengers. Additional benefits to the local area resulted from cattle crossings and pedestrian overpasses (para. 11).

C. Efficiency in Achieving Outcome and Outputs

52. The project was *efficient* in achieving its intended outputs and outcome (paras. 11–14, 46–51). To assess project efficiency, the economic internal rate of return (EIRR) was reevaluated using updated data. The economic analysis at appraisal compared the “with-“ and “without-project” scenarios using the Roads Economic Decision model for 430 km of roads under projects 1 and 2; and for 304 km of roads for Km 372–676.³⁰ The economic reevaluation at completion for project 1 compared the “with-“ and “without-project” scenarios using the full HDM-4 model (Version 2.0). Like at appraisal, the identified benefits include VOC savings and time savings. Road crash savings were also included.

53. The recalculated EIRR of 19% for the project road exceeds the benchmark rate of 12%, demonstrating that the project is economically viable. The recalculated EIRR was higher than that at appraisal (16.1% for combined projects 1 and 2, and 14.9% for Km 372–676).³¹ The reasons for the differences in the EIRRs between appraisal and completion were the significant decrease of the project costs, approximately 47% (Appendix 12, para. 17), more traffic used the road as expected (para. 47), and the economic analysis at completion also included benefit due to road crash savings that were not included at approval. Sensitivity analysis results showed that the project remains economically viable with the EIRR exceeding the 12% threshold in all scenarios for a 25% reduction in any of the three benefits, full exclusion of road crash benefits, or reduction of the road maintenance expenditure.³²

54. The project impact of vehicle emissions was also considered. The results suggest a reduction in the carbon dioxide emission of more than 269,000 tons over the full analysis period, with a reduction of some 7,989 tons in 2016.

55. The process efficiency complemented the project efficiency. The works were substantially completed on time (paras. 11, 24) and the loan was financially closed on time (para. 20) despite delays in declaring loan effectiveness and commencing works. There were minor variations in the scope of engineering works that did not delay implementation. ADB and government counterpart funds were available on time for paying claims for works and consulting services. ADB's process of paying claims was efficient using the eStar facility and given ADB service standards. ADB promptly canceled part of the loan proceeds as requested by the government (para. 16). The

³⁰ There were two reports on economic analysis at appraisal: (i) the project preparatory TA report for 450-km of the combined project 1 (Km 372.6–514.4 and Km 573.6–632.3) and project 2 (Km 632.3–802) of the investment program; and (ii) the PPMS report for 304-km of Km 372–676. There was no economic analysis at appraisal solely for the 200.5-km road section, of which project 1 is part of. The PPMS report's economic analysis closely represents the economic analysis of project 1 at appraisal.

³¹ Footnote 30.

³² The road maintenance expenditure reduction refers to the post-construction pavement maintenance cost scenario limited only to routine maintenance, without capital maintenance overlay for the project 1 road.

project had loan savings of \$131.89 million, 47% of the approved loan amount of \$283 million (para. 17). ADB and PMU had an efficient line of communication, which helped in discussing and resolving implementation issues (para. 39). A community liaison group was set up to handle safeguards-related issues, but there were no issues reported.

D. Preliminary Assessment of Sustainability

56. The project is *likely to be sustainable*, given the pavement quality, safety facilities, and road maintenance arrangements with the institution, expertise, funds, and facilities in place.

57. **Pavement design.** The pavement was designed for an axle load of 13 tons, which is more than the government-regulated axle load³³ of 10 tons (para. 11). To monitor and enforce the limit of 10 tons per axle per vehicle, there are transport control posts at border-crossing points, such as (i) “Tazhen” at Beineu–Akzhigit on the Uzbekistan border and (ii) “Temir Baba” at Zhetybay–Zhanaozen–Kendirli on the Turkmenistan border. The police would apprehend trucks and buses with excessive vehicle axle loads. Design and enforcement of the axle load limit will minimize road surface deterioration over time.

58. **Road safety.** The project road was designed to improve safety by eliminating hazardous curves; improving road geometrics; and installing metal road fences, road markings, and traffic signs. In addition, the traffic police patrols enforce speed limits. Rest areas and bus stops with gender-sensitive toilets were installed to provide convenience to road users, which contribute to road safety (para. 11). The safety facilities, traffic enforcement, and regular road safety audits will contribute to the sustainability of road safety over time. Meanwhile, the government is preparing the national road safety action plan for 2017–2020, which is currently being reviewed by relevant government agencies. This will further strengthen the efforts for road safety.

59. **Road maintenance.** MID (MOTC) through COR is responsible for the 23,909 km-long republican road network. The government provides funds annually to COR through MID for the road sector expenditures (construction, rehabilitation, and maintenance). COR enters into a state order agreement with and provides funds to KazAvtoZhol JSC for construction, reconstruction and repair works (capital, mid-term and routine repairs) of the republican roads.³⁴ KazAvtoZhol JSC of the Mangystau Oblast took over the maintenance of the completed three road sections after the defects notification period, and eventually of the completed first road section after the extended defects notification period. Appendix 13 shows the annual government expenditures for republican road maintenance. The trend is increasing however, the amount is not sufficient to fully cover maintenance and repair needs. For instance, the amount for current repair and maintenance, on the average, is only 31% of the requirements for 2013–2016.

60. To augment the road maintenance funds, the “Nurly Zhol” Program,³⁵ among others, aims at installing toll system on the republican roads of Kazakhstan. The toll road plan shows installing toll system in 22 major highway sections totaling about 7,000-km until 2020. Currently, only 211 km (Astana–Shchuchinsk)³⁶ are tolled in 2013. The toll system installation of the three highway sections (Almaty–Kapshagay, Astana–Temirtau, and Almaty–Horgos) is ongoing and will be launched by the end of 2017. The 445-km Aktau–Beineu section, of which the project road is a

³³ MID Minister Order No. 342 of 26 March 2015 on the permissible parameters of vehicles intended for movement on highways of the Republic of Kazakhstan.

³⁴ In addition, COR directly hires Kazakhavtodor to provide routine (summer and winter) maintenance services under a contract. Refer to Appendix 13.

³⁵ Footnote 7.

³⁶ This was the pilot toll road system project in 2013 following the “Nurly Zhol” Policy.

part, is scheduled for toll system installation in 2018. The toll system installation for the other road sections is scheduled up to 2020 (Appendix 13).

61. KazAvtoZhol JSC's financial record in providing services for the road maintenance from its inception in 2013 to 2016³⁷ shows an improving trend—in 2016, the company generated a profit of T27 million with losses in 2014 and 2015 and a profit in 2013. It's financial record for the 211-km tolled section's operations and maintenance for four years under trust management shows an improving trend that would demonstrate that toll revenues could be sufficient to pay for operations and maintenance costs for a tolled road section. Tolling the roads will hopefully raise road funds to sustain the expenses of tolled roads and eventually contribute in maintaining untolled national highways. For implementation and monitoring, KazAvtoZhol JSC has branch offices in 14 oblasts. It absorbed the 14 oblast road departments under COR. Its staff members have technical expertise on road construction and maintenance. Most staff came from the oblast CORs, Zhol laboratories, Kazahvtodor, or other local private road maintenance firms.

62. On road maintenance depots, there are existing depots with necessary equipment near the project roads, such as Depot 57 in Beibey, Depot 58 in Shetpe, and Depot 59 in Aktau, which are currently being managed by Kazakhvtodor.

63. The World Bank-financed RAMS will have its first run of pilot-testing by the end of 2017 (para. 24). This will assist COR and KazAvtoZhol JSC with road condition assessment, level of service assessment, road maintenance planning and budget management.

E. Impact

64. The project has positive impact based on its initial contribution to regional cooperation, the local economy, and to the environment.

65. **Regional economic impact.** The impact intended at appraisal is likely to be achieved. The improved road will stimulate trade between Kazakhstan and its neighbors along CAREC Corridor 2. The Aktau–Beineu road, of which the project road is part, links the Aktau international port to the main road system in central Kazakhstan, and facilitates the transport of goods and people to Europe, Russia, and the People's Republic of China. Of the estimated 30 million tons of cargo transported across the Caspian Sea each year, more than a third of it transits the international port in Aktau City³⁸ with a portion of the cargo passing through the project road. The travel of this cargo along Mangystau was previously slow, expensive and dangerous. On the improved road, travel is faster, safer, more convenient and less costly. An indicator for increased regional traffic³⁹ is the increasing number of articulated trucks that use the project road (para. 47). This could contribute to national and regional economic growth.⁴⁰

66. **Socioeconomic Impact.** In the short-run, the road construction provided employment opportunities and income to local residents. The project directly employed about 750 local residents, of whom 250 were women. It generated additional business income in the local market as construction materials (sand, and gravel) and supplies were procured locally. It generated rental income from temporary use of land for base camps, storage areas, and other construction activities; and created business incomes as small commercial shops had opened along the project road. The benefits of the paved road provided a long-run effect of comfort, safe travel, and

³⁷ Financial statements are sourced from <http://kazautozhol.kz/index.php/ru/partneram/dlya-investorov>.

³⁸ <https://www.adb.org/results/dangerous-gravel-road-was-hindering-kazakhstans-trade-world>.

³⁹ There is no available data disaggregated by origin of cargoes, or by domestic and transit traffic.

⁴⁰ The impact indicator of GDP growth is at higher result chain level that makes outcome alignment less meaningful.

reduced travel time and cost to local residents as well as to transit road users. During the PCR mission's meeting at Shetpe, the *akim* confirmed the quality of the road pavement, safety facilities, and reduced travel time, and that the roads served passengers to nearby towns and across neighboring countries. The increasing number of commercial shops along the project road, including cafés, fuel stations, and vehicle repair shops will provide long-term benefits to the owners, to the village, and to the country.⁴¹ The increasing number of residential houses in Shetpe demonstrates a growing local economy.

67. **Environment impact.** The project was classified *category B* at appraisal. MOTC prepared the Initial Environment Examination (IEE) in 2010. The IEE found no significant negative impacts on the environment as the alignment would not pass through any settlements or ecologically sensitive areas, and anticipated negative impacts were site-specific and could be mitigated through proper design and implementation of the environmental management plans (EMPs). The contractors complied with the mitigation measures set out in the EMPs during construction. The CSC's monitoring reports recorded no major issue, with indicators (contaminators, emission concentrations, noise, and vibration) not exceeding permissible values. At project completion, local authorities recorded no residual impacts and no grievances received from local communities. The project road cleanup was satisfactory. The contractors expressed to retain the project facilities for forthcoming projects. On vehicle emissions, the economic reevaluation at completion shows that the project has reduced annual carbon dioxide emissions of 269,000 tons over the full analysis period up to 2035, with a reduction of some 7,989 tonnes in 2016 (para. 54). The IEE and four environmental monitoring reports were disclosed on the ADB website. KazAvtoZhol will continue monitoring any environmental issue. Appendix 14 provides details of environmental activities.

68. **Land acquisition and social safeguards impact.** The project was classified *category B* for involuntary resettlement at appraisal. The Land Acquisition and Resettlement Plan (LARP) showed that the project required 268.5 hectares (ha) of lands: (i) 63.5 ha land for permanent use, of which 27.9 ha was leased to eight households and one legal entity; and (ii) 227 ha of land for temporary use as bypasses, access to construction sites, and sites for construction materials, of which 109.5 ha was leased to one household and three legal entities. At appraisal, LARP implementation and administration cost was estimated at T1,348,600,450. During construction and at completion, there was no LARP-related expense. The 63.5 ha land for the use of the project road was state-owned; and the affected lessees were offered "land for land" option and received alternative land under the agreements signed with COR. As for the land for temporary use, the contractors paid the rent amount of T31,257,547 to private land owners and the government. At completion, local authorities recorded no complaints received from local communities. No affected persons lost more than 10% of their productive assets. No roadside businesses or residential structures were assessed to be affected. The LARP, LARP completion report and four internal LAR monitoring reports were disclosed on the ADB website. KazAvtoZhol will continue monitoring any social issue. Appendix 14 provides details of resettlement activities.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

69. The project is rated *successful* (Appendix 15). It was designed, implemented, and completed as conceived. It is relevant to the country's economic development strategy and transport sector programs, Strategy 2020, Kazakhstan CPS, and the CAREC Strategy 2020

⁴¹ Footnote 40.

(paras. 5-6 and 42). The four road sections totaling 200.5 km have contributed to increasing transport connectivity and efficiency in the Mangystau Oblast along CAREC Corridor 2 (paras. 46–51) through reduced travel time, reduced VOC, and reduced road crash rate. It is rated *economically viable* (paras. 52–56), and *likely to be sustainable* (paras. 56–63), with *initial positive impact on the economy and safeguards* (paras. 64–68).

B. Lessons

70. **Consultant performance.** High turnover of the CSC team members inhibited timely report submission and efficient monitoring of works quality and progress. Consultant turnover and associated delays can be minimized by careful assessment of the consultant's qualifications, and better monitoring and management of consulting contracts.

71. **Design and monitoring framework.** The project adopted the outcome statement and performance indicators of the investment program. The indicators were achieved at the project level, but DMF should have been formulated for the project at appraisal using a time-slicing phased approach for a tranche project. Moreover, the impact statement and indicator of GDP growth is at a higher result chain level that makes outcome alignment less meaningful.

72. **Economic analysis at appraisal.** The project has two economic analyses at appraisal: (i) for 450-km of the combined project 1 and project 2, and (ii) for 304.4-km, of which project 1 is part of. Project economic analysis should have been done solely for the 200.5-km project road.

C. Recommendations

1. Project-Related

73. **Covenants.** The loan covenants adequately addressed the project implementation requirements and would be relevant for future similar projects. On road safety, the government should continuously conduct road safety audits, raise road safety awareness, and increase police enforcement. For road maintenance, the government should continue establishing toll roads to fund road network maintenance.

74. **Timing of the project performance evaluation report.** The mission to prepare a project performance evaluation report may be fielded after the extended DNP in the first road section as all the road sections will be fully operational and the benefits can be fully assessed.

2. General

75. For future similar project appraisals, project schedules should be prepared taking into consideration the (i) lengthy government procedures to sign loan documents and initiate effectiveness; (ii) proximity of the project sites to sources of materials and to the main transportation means, which could affect supply project implementation; and (iii) lengthy procedures for obtaining permits related to road construction.

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance																					
	Targets/Indicators	Status at Completion ^a																				
Impact^a Contribution to sustainable economic development and regional cooperation under CAREC	By 2020^b Increased GDP of Kazakhstan to \$300 billion (2009 baseline: \$114 billion)	Real GDP ^b increased from \$115 billion in 2009 to \$237 billion in 2013, but decreased to \$133.65 billion in 2016. The economy of Kazakhstan contracted in 2014 and onwards due to (i) lower oil prices, (ii) weaker external demand for Kazakhstan's metal products as China's economic growth slowed and Russia's recession continued, and (iii) weaker domestic demand as private consumption was hit hard by the <i>tenge</i> devaluation in February 2014.																				
Outcome^a Increased transport connectivity and efficiency, and institutional effectiveness	By 2016 Increased traffic volume to 3,500 vpd (2009 baseline: 1,000 vpd) Reduced road-user costs ^d to \$0.43/vehicle-km (2010 baseline: \$0.64/vehicle-km) Reduced travel time between Aktau and Beineu to 4 hours (2009 baseline: 12 hours)	Achieved (Project 1) Traffic volume along the 200.5-km Manasha–Shetpe road sections increased to 1,447 vpd in 2016 from 1,036 vpd in 2010 (40% increase). This includes regional and domestic traffic. ^c A reasonable indicator of increased regional traffic is the increased number of articulated trucks that carry a cargo load of about 40 tons, which almost tripled from about 104 trucks per day in 2010 to about 282 in 2016 along Km 372-514, 2 years after the project completion in 2014. Achieved (Project 1) The VOC per km savings for different types of freight vehicles at completion are as follows: <table><tr><th>Item</th><th>Base case</th><th>W/ project</th><th>Savings</th></tr><tr><td>Articulated truck</td><td>\$1.11</td><td>\$0.74</td><td>\$0.37</td></tr><tr><td>3-axle truck</td><td>\$0.80</td><td>\$0.53</td><td>\$0.27</td></tr><tr><td>2-axle truck</td><td>\$0.50</td><td>\$0.37</td><td>\$0.13</td></tr><tr><td>Pick-up</td><td>\$0.29</td><td>\$0.21</td><td>\$0.08</td></tr></table> The overall discounted VOC savings (the main source of benefits) for the 200.5-km project road would be about \$92 million over the evaluation period of the project. Achieved (Project 1) The average vehicle speed in 2016 increased from 39 kph to 84 kph after opening. This translates into an average travel time saving of 2 hours and 45 minutes in 2016 from 4–5 hours in 2010. The overall discounted travel time savings for the 200.5-km project road were found to be \$41 million over the evaluation period of the project.	Item	Base case	W/ project	Savings	Articulated truck	\$1.11	\$0.74	\$0.37	3-axle truck	\$0.80	\$0.53	\$0.27	2-axle truck	\$0.50	\$0.37	\$0.13	Pick-up	\$0.29	\$0.21	\$0.08
Item	Base case	W/ project	Savings																			
Articulated truck	\$1.11	\$0.74	\$0.37																			
3-axle truck	\$0.80	\$0.53	\$0.27																			
2-axle truck	\$0.50	\$0.37	\$0.13																			
Pick-up	\$0.29	\$0.21	\$0.08																			

Design Summary	Performance	
	Targets/Indicators	Status at Completion ^a
	<p>Number of accidents per year on the investment program road reduced to 140 (2009 baseline: 152)</p> <p>Average processing time per truck at border-crossing points reduced to 30 minutes from 1.5 hours per truck</p> <p>National road safety improvement strategy with action plans prepared and implemented</p>	<p>Achieved (Project 1) Based on the 3-year data supplied by COR, the average annual fatalities reduced by 2 fatalities per year compared to 6 fatalities per year in 2014, which could be considered representative of the accident casualties that would have been expected in the 2010 baseline case.</p> <p>The overall discounted accident savings as result of the project were estimated to be \$8.85 million over the evaluation period of the project.</p> <p>Not applicable to Project 1 This was planned for the tranche 3 project, for which the road section is near the Akzhigit–Uzbekistan border.</p> <p>Not applicable to Project 1 National road safety improvement strategy is part of the government's initiatives. MID with ADB's assistance through the CAREC road safety strategy prepared a national road safety action plan for 2017–2020, which is currently being reviewed by the government.</p>
<p>Output Two sections (km 372.6–km 514.4 and km 574–km 632.3) reconstructed</p>	<p>About 200-km road sections reconstructed with pavement IRI of less than 4m/km by 2013</p> <p>HIV and human trafficking awareness program implemented by June 2011</p>	<p>Achieved 200.5 km of road were reconstructed by December 2014, for less than the original estimated cost while meeting the IRI requirement of less than 4 m/km as intended at appraisal. The pavement category was improved from category III to category II. The pavement design provided for 13-ton axle loads from the original 8 tons loading, and a speed of 120 km/hour from the original 60 km/hour as designed at appraisal.</p> <p>Road safety facilities were in place. Additional roadside facilities, such as seven gender-sensitive toilets, eight sheltered bus stops, five rest areas, 14 cattle crossings, and five pedestrian overpasses were constructed.</p> <p>Achieved The works contractors prepared and implemented the HIV and human trafficking program in early 2014.</p>
MOTC's capacity for project management strengthened	Program management unit effectively functioning	<p>Achieved. A program management unit was established and was effectively functioning.</p>

Design Summary	Performance																			
	Targets/Indicators	Status at Completion ^a																		
	Subsequent tranche projects timely submitted to ADB	Achieved. Due diligence reports were prepared. Periodic Financing Request Report for Tranche 2 was submitted to ADB on schedule.																		
	Tranche 3 project prepared and implemented mainly by the executing agency, less consulting services inputted	Tranche 3 project is currently not a government priority project.																		
	Computerized road management system implemented by 2016	Not applicable to Project 1 The World Bank-financed road asset management system was developed and will be pilot-tested by end of 2017. Software and hardware tools were purchased; inventory of road assets was completed; and database building, preparation of planning tools for appropriate maintenance and rehabilitation decisions, manual preparation and training are ongoing. The road asset management system will be implemented at central level (COR and KazAvtoZhol JSC) and in 14 oblasts.																		
	Road asset management system implemented for programming																			
	Performance-based contract for routine maintenance piloted by 2015	Not applicable to Project 1 The project preparatory TA is ongoing to prepare the performance-based contract for routine maintenance project.																		
<table> <tr> <th colspan="3">Inputs</th></tr> <tr> <th></th><th>Estimates</th><th>Actual</th></tr> <tr> <th>Item</th><th>At Appraisal</th><th>At Completion</th></tr> <tr> <td>OCR</td><td>\$283,000,000</td><td>\$151,111,234.44</td></tr> <tr> <td>Government</td><td>\$ 50,000,000</td><td>\$ 22,338,895.52</td></tr> <tr> <td>Total</td><td>\$333,000,000</td><td>\$173,450,129.96</td></tr> </table>			Inputs				Estimates	Actual	Item	At Appraisal	At Completion	OCR	\$283,000,000	\$151,111,234.44	Government	\$ 50,000,000	\$ 22,338,895.52	Total	\$333,000,000	\$173,450,129.96
Inputs																				
	Estimates	Actual																		
Item	At Appraisal	At Completion																		
OCR	\$283,000,000	\$151,111,234.44																		
Government	\$ 50,000,000	\$ 22,338,895.52																		
Total	\$333,000,000	\$173,450,129.96																		

ADB = Asian Development Bank, ADVK = average daily vehicle-kilometer, CAREC = Central Asia Regional Economic Cooperation, COR = Committee of Roads, GDP = gross domestic product, hr = hour, IRI = international roughness index, km = kilometer, m = meter, MOTC = Ministry of Transport and Communications, OCR = ordinary capital resources, TA = technical assistance, VOC = vehicle operating costs, vpd = vehicles per day.

^a The impact and outcome statements and indicators are for the entire investment program, of which figures refer to combined projects 1 and 2. Achievements at completion refer to those of the project only. At project appraisal, there was no clear guidance on the DMF preparation of a tranche project vis-à-vis investment program. There were two outcome performance indicators that were not part of the project 1 scope: (i) the average processing time per truck at border-crossing points and (ii) national road safety improvement strategy. There were also two output indicators that were not applicable to project 1, such as (i) a road asset management system and (ii) performance-based contracts for routine maintenance. There was an initial proposal to revise the DMF to remove these indicators, but this was not done as it might entail amendment to the loan agreement, which would require a parliament ratification of the amendment, and will delay the completion the project. It was agreed to document this in the project completion report.

^b The impact indicator of GDP growth is at higher result chain level that makes outcome alignment less meaningful.

^c There is no available traffic data disaggregated into regional or transit and domestic data.

^d The road user cost is the same indicator as the vehicle operating cost for freight vehicles.

Sources: Asian Development Bank; Committee of Roads under the Ministry of Investment and Development; Consultant's Report on the Post-Construction Economic Reevaluation of Project 1; and World Bank Online Statistics.

SUMMARY OF THE INVESTMENT PROGRAM AND ITS PROJECTS^a

Project No.	Project 1	Project 2	Project 3^b
Loan No.	Loan 2728	Loan 2967	TBD
MFF 0047 Tranche No.	(Tranche 1)	(Tranche 2)	(Tranche 3)
Road Sections	Manasha–Say-Utes (Km 372.6–514.4) Station 10–Shetpe (Km 573.6–632.3)	Shetpe–Zhetybay–Aktau (Km 632.3–802) Zhetybay–Zhaonazen (Km 0–73) ^c	Zhaonazen–Fetisovo (164 km) Beineu–Akzhigit (84 km)
Road Length – Target (km)	200	243	TBD
– Actual	200.5	project ongoing	
Other Components	Capacity development	NA	TBD
Loan Amount – Original	283.00	371.30	
– Revised	179.00 ^d		
– Actual	151.11 ^e		
Loan Approval	20 December 2010	13 December 2012	TBD
Loan Signing	22 August 2011	18 August 2013	TBD
Loan Effectiveness	18 May 2012	16 January 2014	TBD
Loan Closing – Original	31 January 2016	31 October 2017	TBD
– Revised	NA	15 September 2020	
– Actual	29 February 2016		

ADB = Asian Development Bank, Km = kilometer marker, km = kilometer, MFF = multitranche financing facility, NA = not applicable, TBD = to be determined.

^a ADB financed the investment program through a multitranche financing facility with two approved tranches. Subsequent tranches were not yet confirmed.

^b Road sections are indicated in the report and recommendation to the President but not on the government's current pipeline. The government financed some parts of the corridor (i) 60-km road section between Say-Utes and Station 10, and (ii) 40-km road section between Manasha and Beineu (Km 514.3–574).

^c The project scope was expanded to include the 73-km Zhetybay–Zhaonazen road section at the government's request.

^d The loan amount of \$104 million was canceled on 23 July 2014 at the government's request.

^e The unutilized loan amount of \$27.89 million was canceled at closing on 29 February 2016.

Sources: Asian Development Bank and the Committee of Roads under the Ministry of Investment and Development.

SUMMARY ENGINEERING DESIGN

Road Sections	Length (km)	Design Institute	Type of Works	IRI (m/km)	No. of Lanes	Category Pavement ^a	Lane Width (m)	Shoulder Width (m)	Asphalt Pavement Thickness (cm)	Pavement Design	
										Axle Load (tons)	Speed (km/hr)
Before Project											
Km 372.6–422 ^b	49.4	NA	NA	No data	2	III	3.1–3.6	1.5–2.0	no pavement	8	60
Km 422–472.8	50.8	NA		No data	2	III	3.5–3.5	1.8	no pavement	8	60
Km 472.8– 514.4	41.6	NA		No data	2	III	3.01–4.2	1.9–2.3	no pavement	8	60
Km 573.6–632.3	58.7	NA		No data	2	III	3.5–3.25	2.5–2.5	no pavement	8	60
After Project											
Km 372.6–422 ^b	49.4	KazNlipl Dortrans LLP	reconstruction	1.85	2	II	3.75/7.5	3.75	15	13	120
Km 422–472.8	50.8	KazNlipl Dortrans LLP		1.65	2	II	3.75/7.5	3.75	15	13	120
Km 472.8–514.4	41.6	KazNlipl Dortrans LLP		1.82	2	II	3.75/7.5	3.75	15	13	120
Km 573.6–632.3	58.7	KazDorProekt LLP		1.50	2	II	3.75/7.5	3.75	15	13	120

cm = centimeter, IRI = international roughness index, LLP = limited liability partnership, Km = kilometer marker, km = kilometer, km/hr = kilometer per hour, m = meter, m/km = meter per kilometer, NA = not applicable.

^a Kazakhstan pavement category following GOST-SNiP technical standards are as follows:

Category IA: four-lane asphalt concrete pavement, 3.75-m lane width, 3.75-m shoulder width

Category IB: four-lane cement concrete pavement, 3.75-m lane width, 3.75-m shoulder width

Category II: two-lane asphalt concrete pavement, 3.75-m lane width, 3.75-m shoulder width

Category III: two-lane, 3.5-m lane width, 2.5-m shoulder width

^b Includes reconstruction of 55-m Manasha bridge.

Sources: Asian Development Bank and the Committee of Roads under the Ministry of Investment and Development.

PROJECT CONTRACT PACKAGES

Items	Works				Consulting Services ^a	
	Reconstruction of Sai-Utes–Manasha Road Sections			Reconstruction of Road Section in Shetpe	Project Management	Construction Supervision
Package Description	Km 372.6–422	Km 422–472.8	Km 472.8–514.4	Km 573.6–632.3		
Km-length output	49.4	50.8	41.6	58.7	NA	NA
Contractor's or Consultant's Name	Alsim Alarko Sanayi Tesisleri Ve Ticaret A.S. (Italy)	Alsim Alarko Sanayi Tesisleri Ve Ticaret A.S. (Italy)	Alsim Alarko Sanayi Tesisleri Ve Ticaret A.S. (Italy)	Alsim Alarko Sanayi Tesisleri Ve Ticaret A.S. (Italy)	Zhol-Sapa LLP (Kazakhstan)	Dohwa Consulting Engineers Co. Ltd. (ROK) ^b
Procurement or Recruitment Method	ICB	ICB	ICB	ICB	QCBS	QCBS
Bidding Procedure or Type of Proposal	1S1E	1S1E	1S1E	1S1E	FTP	FTP
GPN Posting	13 August 2010	13 August 2010	13 August 2010	13 August 2010	-	13 August 2010
IFB or CSRN Posting	21 December 2011	21 December 2011	21 December 2011	21 December 2011	2 April 2012	26 January 2012
Contract Award Date ^c	4 May 2012	4 May 2012	18 May 2012	10 August 2012	27 March 2013	15 November 2012
Contract Signing Date	14 May 2012	14 May 2012	18 May 2012	15 August 2012	22 April 2013	16 November 2012
Contract Period	870 days	870 days	780 days	930 days	30 months	30 months
Commencement Date	20 July 2012	20 July 2012	20 July 2012	7 September 2012	22 April 2013	15 December 2012
Completion Date - Original	7 December 2014	7 December 2014	8 September 2014	26 March 2015		
- Actual ^d	5 December 2014	17 November 2014	8 September 2014	17 November 2014	31 January 2016	31 January 2016
Defects Notification Period	5 December 2016 (730 days)	17 November 2016 (730 days)	7 September 2016 (730 days)	17 November 2016 (730 days)	NA	NA
- Original						
- Actual ^e	5 December 2017 ^f	17 November 2016	7 September 2016	17 September 2016	NA	NA
ACA	T6,695,293,097.35	T6,704,706,809.43	T5,940,235,143.76	T6,559,442,857.99	\$4,928,000.00	\$7,857,062.08
Variations ^g - Number	1	1	1	1	7	2

Items	Works				Consulting Services ^a	
- Cumulative Amount	(T594,000,934.17)	(T481,855,861.75)	(T556,555,799.26)	(T251,010,739.15)	\$489,025.60	0
- % to ACA	(8.9%)	(7.2%)	(9.4%)	(3.8%)	10%	0%
Price Escalation						
- Total Amount	T402,248,043.03	0	0	T107,527,813.57	0	0
- % to ACA	6.0%	0%	0%	1.6%	0%	0%
Revised Contract Amount (Total)	T6,503,540,206.21	T6,222,850,947.69	T5,383,679,344.50	T6,415,959,932.41	\$5,417,025.60	\$7,857,062.08
Revised Contract Amount (ADB)	T5,806,732,326.97	T5,289,423,305.54	T4,806,856,557.59	T5,728,535,653.94	\$4,836,630.00	\$7,015,234.00
Disbursement (\$-equivalent, ADB)	\$37,190,139	\$35,913,193	\$32,743,439	\$37,418,872	\$3,364,778	\$4,407,457

¹S1E = one-stage one-envelope procedure, ACA = accepted contract amount,, ADB = Asian Development Bank, CSRN = consulting services recruitment notice, FTP = full technical proposal, ICB = international competitive bidding, IFB = invitation for bids, ROK = Republic of Korea, LLP = limited liability partnership, NA = not applicable, QCBS = quality- and cost-based selection, GPN = general procurement notice, T = Kazakhstan tenge.

^a Excludes individual consultants.

^b In association with Astana Engineering Centre LLP (Kazakhstan).

^c The executing agency's issuance date of the letter of acceptance to the works contractors. ADB issued the no-objection letter to award the works contracts for lots 1, 2, and 3 on 30 April 2012 and lot 4 on 9 August 2012. For consulting services, these dates refer to ADB's issuance of no-objection to the draft negotiated contract.

^d Engineer's issuance date of the taking-over certificate to the works contractors.

^e Engineer's issuance date of the performance certificate to the works contractors at the end of the defects notification period.

^f Defects notification period for the first road section has been extended for 1 year.

^g Variations to contract 1 (nondemolition of Manasha bridge and mantling of concrete blocks and road traffic markings), contract 2 (replacement of box culverts instead of rehabilitation and road traffic markings), and contract 4 (alteration of 10 kilowatt transmission line at Zharmys junction and unforeseen rock excavation in Km 615+(260–660).

Sources: Asian Development Bank and the Committee of Roads under the Ministry of Investment and Development.

PROJECT COST AND FINANCING PLAN

Item	Appraisal Estimate ^a			Actual Cost ^b		
	ADB	Government	Total	ADB	Government	Total
A. Base Cost^c						
1. Civil Works						
a. Km 372.6–422	63.20	7.60	70.80	37.19	4.93	42.12
b. Km 422–472.8	53.70	6.50	60.20	35.91	5.52	41.43
c. Km 472.8–514.4	57.70	6.90	64.60	32.74	4.48	37.22
d. Km 573.6–632.3	67.70	8.10	75.80	37.42	5.32	42.74
Subtotal Civil Works	242.30	29.10	271.40	143.26	20.25	163.51
2. Consulting Services						
Project Management Consultant (including individual consultants)	8.20	0.00	8.20	3.44	1.56	5.00
Construction Supervision Consultant	7.80	1.00	8.80	4.41	0.53	4.94
Subtotal Consulting Services	16.00	1.00	17.00	7.85	2.09	9.94
3. Land Acquisition and Resettlement	0.00	17.20	17.20	0.00	0.00	0.00
Total Base Cost (A)	258.30	47.30	305.60	151.11	22.34	173.45
B. Contingencies^d						
Total Contingencies (B)	24.70	2.70	27.40	0.00	0.00	0.00
Total Project Cost (A+B)	283.00	50.00	333.00	151.11	22.34	173.45

ADB = Asian Development Bank, Km = kilometer marker.

^a In 2010 prices.

^b In 2016 prices. Actual costs up to loan closing date.

^c Taxes and duties are included.

^d Contingency includes physical and contingencies.

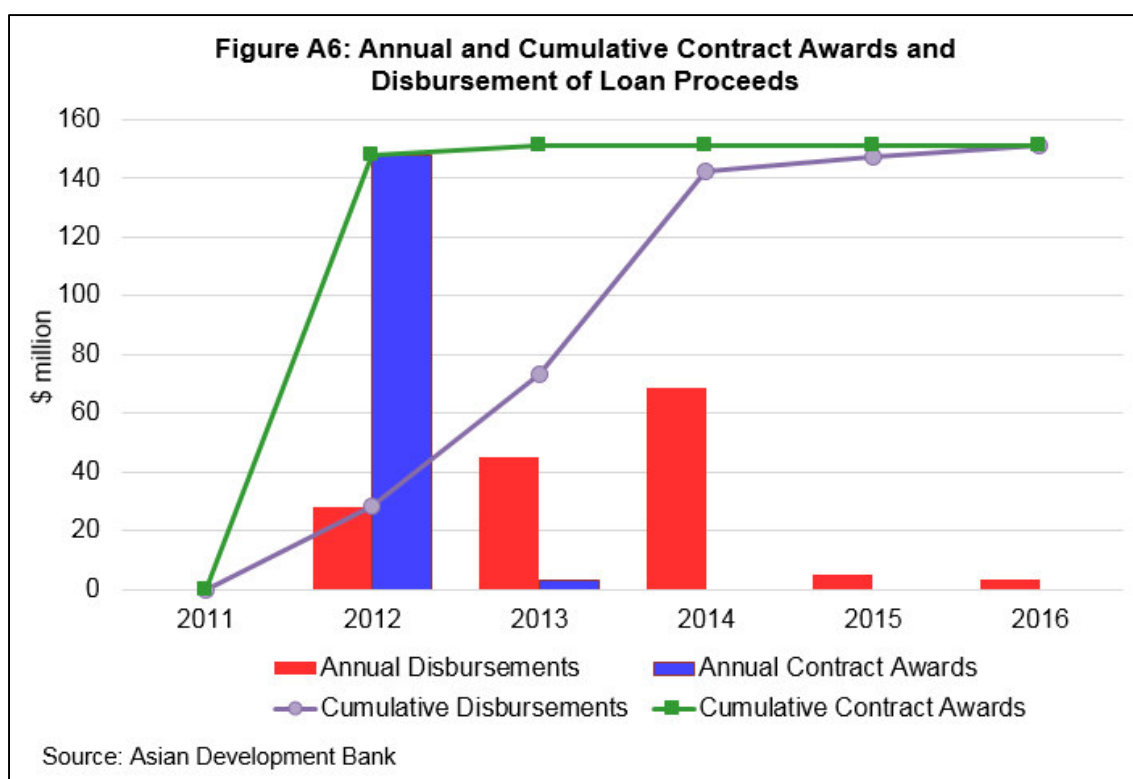
Sources: Asian Development Bank and the Committee of Roads under the Ministry of Transport and Communications.

CONTRACT AWARDS AND DISBURSEMENTS OF ADB LOAN PROCEEDS

Table A6: Annual and Cumulative Contract Awards and Disbursement of Loan Proceeds
in \$ million

Item	2012	2013	2014	2015	2016	Total
Contract Awards						
Annual	147.75	3.36				151.11
Cumulative	147.75	151.11	151.11	151.11	151.11	151.11
% Cumulative	97.77%	100.00%	100.00%	100.00%	100.00%	100.00%
Disbursement						
Annual	28.31	45.20	68.67	5.34	3.59	151.11
Cumulative	28.31	73.51	142.18	147.52	151.11	151.11
% Cumulative	18.74%	48.65%	94.09%	97.62%	100.00%	100.00%

Source: Asian Development Bank



PROJECT IMPLEMENTATION SCHEDULE

Item	Activity	2010		2011				2012				2013				2014				2015				2016				2017			
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Milestone Events																															
	Loan Approval																														
	Loan Signing																														
	Loan Effectivity																														
	Loan Closing																														
Civil Works																															
a. Km 372.6–422 (49.4 km)	Procurement ^a																														
	Implementation ^b																														
b. Km 422–472.8 (50.8 km)	Procurement																														
	Implementation																														
c. Km 472.8–514.4 (41.6 km)	Procurement																														
	Implementation																														
d. Km 573.6–632.3 (58.7 km)	Procurement																														
	Implementation																														
Consulting Services																															
Construction Supervision Consultant	Recruitment ^a																														
	Implementation																														
Project Management Consultant	Recruitment																														
	Implementation ^b																														

At appraisal Actual Defects notification period

km = kilometer, Q = quarter.

^a From preparation of bid documents to posting of the invitation for bids, and preparation of the terms of reference and request for proposals and posting of the consulting services recruitment notices to contract signing.

^b From commencement date to completion date (issuance date of taking-over certificate for works contracts).

Sources: Asian Development Bank and the Committee of Roads under the Ministry of Investment and Development.

CHRONOLOGY OF MAJOR EVENTS

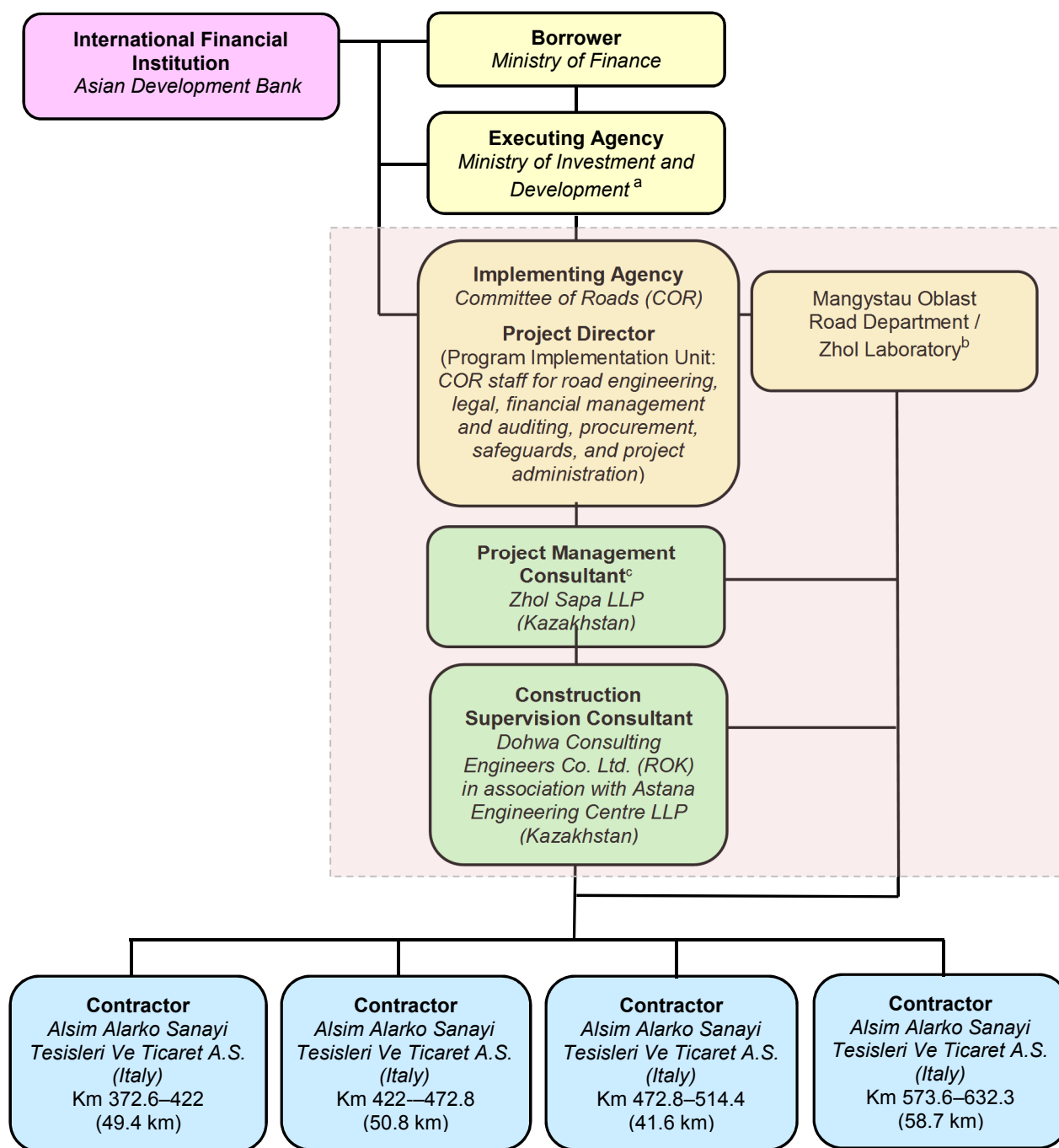
Year	Date	Main Event
2010	16–25 June	Fact-finding mission fielded.
	26–29 July	Project consultation held.
	13 August	Advance contracting notice advertised.
	15 September	Invitation for bids for procuring works advertised.
	20 December	Loan approved.
2011	22 August	Loan agreement signed.
	4–11 October	Special loan administration mission fielded.
2012	26 January	CSRN for construction supervision consultant advertised.
	9–16 February	Project review 1 fielded.
	2 April	CSRN for project management consultant advertised.
	30 April	Contract award for Km 372.6–422, Km 422–472.8 and Km 472.8–514.3 road sections approved.
	14 May	Works contracts for Km 372.6–422 and Km 422–472.8 road sections signed.
	18 May	Works contract for Km 472.8–514.3 road section signed.
		Loan effectiveness declared.
	20 July	Works for Km 372.6–422, Km 422–472.8 and Km 472.8–514.3 road sections commenced.
	9 August	Contract award for Km 472.8–514.3 road section approved.
	15 August	Works contract for Km 472.8–514.3 road section signed.
	7 September	Works for Km 472.8–514.3 road section commenced.
	25 September–9 October	Project review 2 fielded.
	15 November	Contract award for construction supervision consultant approved.
	16 November	Contract for construction supervision consultant signed.
	15 December	Contract for construction supervision consultant commenced.
2013	27 March	Contract award for project management consultant approved.
	3–12 April	Special loan administration 2 fielded.
	22 April	Contract for project management consultant signed and commenced.
	3–11 June	Midterm project review fielded.
	21–30 October	Project review 3 fielded.
2014	19–24 May 2	Project review 4 fielded.
	23 July	Loan proceeds of \$104 million partially canceled at the government's request.
	6 August	Executing agency changed from Ministry of Transport and Communications to Ministry of Investments and Development.
		Committee of Roads remained the implementing agency.
	8 September	Contract for Km 472.8–514.3 road section completed. Taking-over certificate issued.
	29 September–4 October	Project review 5 fielded.
2015	17 November	Contract for Km 422–472.8 and Km 472.8–514.3 road sections completed. Taking-over certificates issued.
	5 December	Works contract for Km 372.6–422 road section completed. Taking-over certificate issued.
2015	2–9 March	Project review 6 fielded.
	25–30 May	Project review 7 fielded.
	12–22 October	Project review 8 fielded.

Year	Date	Main Event
2016	31 January	Closing date as in loan agreement.
		CSC and PMC contracts completed.
	29 February	Loan account financially closed and the unutilized amount of \$27.89 million canceled.
	7 September	Defects notification period for Km 472.8–514 ended. Performance certificate issued to the contractor.
	17 September	Defects notification period for Km 574–632.3 ended. Performance certificate issued to the contractor.
	17 November	Defects notification period for Km 422–472.8 ended. Performance certificate issued to the contractor.
2017	27 April–3 May	Project completion review mission fielded.

CSC = construction supervision consultant, CSRN = consulting services recruitment notice, Km = kilometer marker, PMC = project management consultant.

Sources: Asian Development Bank and Committee of Roads under the Ministry of Investment and Development.

PROJECT ORGANIZATIONAL STRUCTURE



COR = Committee of Roads, Km = kilometer marker, km = kilometer, ROK = Republic of Korea, LLP = limited liability partnership.

^a The government's reorganization on 6 August 2014 replaced Ministry of Transport and Communications (MOTC) with Ministry of Investment and Development (MID), which absorbed the functions of MOTC.

^b During project implementation in 2014, Mangystau Zhol Laboratory represented COR in the fields for project implementation.

^c The project management consultant engaged under project 1 is for the entire investment program that currently comprises two projects.

Sources: Asian Development Bank and Committee of Roads under the Ministry of Investment and Development.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Covenant	Reference in Loan Agreement	Status of Compliance
SECTOR		
<p>Implementation Arrangements. The Borrower shall ensure that the Project is implemented in accordance with the detailed arrangements set forth in the FAM. Any subsequent change to the FAM shall become effective only after approval of such change by the Borrower and ADB. In the event of any discrepancy between the FAM and this Loan Agreement, the provisions of this Loan Agreement shall prevail.</p>	Schedule 5, Para. 1	<p>Complied with. The project was implemented following the detailed arrangements set in the FAM. The MOTC was the executing agency with the COR in MOTC as the implementing agency as indicated in FAM. A PMU, headed by a program director, was set up with team members in each specific responsibility on technical, legal, finance, economics, procurement, safeguards, and program administration. Mangystau Road Department assisted the COR and PMU.</p> <p>The PMU was assisted by (i) individual consultants on economics and safeguards, who prepared the due diligence requirements for the project; (ii) Zhol-Sapa LLP (Kazakhstan), the PMC in managing the project; and (iii) Dohwa Consulting Engineers Co. Ltd. (Republic of Korea) in association with Astana Engineering Centre LLP (Kazakhstan), the CSC in administering contracts to ensure quality and timely completion of road construction.</p> <p>As a result of the government's reorganization on 6 August 2014, the MID absorbed the functions of MOTC. Under this new setup, COR remains the implementing agency under MID.</p>
<p>Conditions for Award of Contract: The MOTC shall not award any Works contracts until (a) the IEE has been cleared by ADB; and (b) the LARP has been cleared by ADB.</p>	Schedule 4, Para. 5	<p>Complied with. Works contracts were not awarded until the IEE and LARP were cleared and posted on ADB website in August 2010.</p>
<p>Construction Quality: The MOTC ensure that the Project is carried out in accordance with the applicable technical specifications and design, and that the construction supervision, quality control and Project management are performed in accordance with applicable standards and best international practices.</p>	Schedule 5, Para. 11	<p>Complied with. CSC monitored the road construction quality following contract provisions and applicable standard technical specifications during construction period until end of the defects notification period. MID (MOTC) and PMC staff also regularly conducted site visits and quality and progress inspection meetings with the Oblast's Road Department, KazAvtoZhol JSC, CSC and contractors during construction period until end of the defects liability period.</p>

Covenant	Reference in Loan Agreement	Status of Compliance
<p>Road Safety: The MOTC shall</p> <p>(a) ensure that all Works contracts include a contractor's obligation to comply with road safety measures; and</p> <p>(b) monitor the accident rate and traffic volume during the operation of the Project Road.</p>	Schedule 5, Para. 12	<p>Complied with. All works contracts include a provision on contractor's obligation to comply with road safety measures.</p> <p>Being complied. KazAvtoZhol JSC currently monitors the accident rate and traffic volume along the project road and commits to continue its monitoring functions.</p>
<p>Particular Covenants.</p> <p>(a) The Borrower shall cause the Project to be carried out with due diligence and efficiency and in conformity with sound applicable technical, financial, business, and development practices.</p> <p>(b) In the carrying out of the Project and operation of the Project facilities, the Borrower shall perform, or cause to be performed, all obligations set forth in Schedule 5 to this Loan Agreement.</p> <p>The Borrower shall make available, promptly as needed, the funds, facilities, services, land and other resources, as required, in addition to the proceeds of the Loan, for the carrying out of the Project and for the operation and maintenance of the Project facilities.</p> <p>(a) In the carrying out of the Project, the Borrower shall cause competent and qualified consultants and contractors, acceptable to ADB, to be employed to an extent and upon terms and conditions satisfactory to the Borrower and ADB.</p> <p>(b) The Borrower shall cause the Project to be carried out in accordance with plans, design standards, specifications, work schedules and construction methods acceptable to ADB. The Borrower shall furnish, or cause to be furnished, to ADB, promptly after their preparation, such plans, design standards, specifications and work schedules, and any material modifications subsequently made therein, in such detail as ADB shall reasonably request.</p> <p>The Borrower shall ensure that the activities of its departments and agencies with respect to the carrying out of the Project and operation of the Project facilities are conducted and</p>	<p>Article IV, Section 4.01</p> <p>Section 4.02</p> <p>Section 4.03</p> <p>Section 4.04</p>	<p>Complied with. Due diligence (safeguards, economic analysis, and engineering design) were carried out for the project.</p> <p>Complied with. The MOF performed its tasks indicated in Schedule 5.</p> <p>Complied with. The MOF promptly made available the counterpart funds for the project. MID (MOTC) and COR made available the required facilities, services, land, and other resources in implementing and operating the project.</p> <p>Complied with. The procurement of works and recruitment of consulting services followed ADB guidelines, and each step of the process required ADB prior review.</p> <p>Complied with. COR rigidly monitored the quality of works progress and completion following the design and technical specifications, work schedule and construction method. COR thoroughly reviewed all contract variations and price adjustments due to price escalation before submitting them to ADB for endorsement.</p> <p>Complied with. The MOF, MID (MOTC) and COR (particularly, those responsible for engineering, finance, safeguards and contract management) collaborated and</p>

Covenant	Reference in Loan Agreement	Status of Compliance
coordinated in accordance with sound administrative policies and procedures.		coordinated well with the Zhambyl Oblast Road Department, other relevant government agencies, and <i>akims</i> .
<p>The Borrower shall enable ADB's representatives to inspect the Project and Works, and any relevant records and documents.</p> <p>The Borrower shall ensure that the Project facilities are operated, maintained and repaired in accordance with sound applicable technical, financial, business, development, operational and maintenance practices.</p>	<p>Section 4.06</p> <p>Section 4.07</p>	<p>Complied with. ADB missions included project site visits to inspect physical progress of works and other project facilities, discuss contract and implementation issues, and verify relevant records.</p> <p>Complied with. COR staff regularly inspected the project facilities at project sites and the Astana office to ensure that operations follow working environment standards.</p>
FINANCIAL		
<p>Condition for Withdrawals from Loan Account:</p> <p>Notwithstanding any other provision of this Loan Agreement, no withdrawals shall be made from the Loan Account for Works until (a) the Borrower has allocated adequate funds for land acquisitions to MOTC; and (b) all land and right-of-way required for Works are free and clear from any and all rights or claims of third parties and any other encumbrances.</p>	Schedule 3, Para. 5	Complied with. MOTC confirmed on 19 July 2012 that land acquisition is not required. The affected land is state-owned.
<p>Counterpart Support:</p> <p>Without limiting the generality of Section 4.02 of this Loan Agreement, the Borrower shall make available all counterpart funds required for timely and effective implementation of the Project through annual budget allocations to MOTC, and shall ensure that such budget allocations are released to MOTC in a timely manner. The Borrower shall ensure that MOTC includes the updated funding requirements for implementation of the Project in its annual development programs.</p>	Schedule 5, Para. 8	<p>Complied with. The MOF annually allocated government counterpart funds and timely released payments for withdrawal applications from 2012 to 2016. MOTC included updated funding requirements for project implementation in its annual development program to facilitate payments.</p> <p>Note that final claims for works and consulting services completed on or before loan closing date of 31 January 2016 were processed during the winding-up period until 29 February 2016.</p>
<p>Use of Proceeds of the Loan</p> <p>The Borrower shall cause the proceeds of the Loan to be applied to the financing of expenditures on the Project in accordance with the provisions of this Loan Agreement.</p> <p>The proceeds of the Loan shall be allocated and withdrawn in accordance with the provisions of Schedule 3 to this Loan Agreement, as such Schedule may be</p>	<p>Article III Section 3.01.</p> <p>Section 3.02</p>	<p>Complied with. Loan proceeds were used to finance civil works and consulting services. The loan account was closed on 29 February 2016, and \$27.9 million unutilized funds were canceled.</p> <p>Complied with. The allocation and withdrawal of loan proceeds followed the Schedule 3 provisions. There were reallocations between categories to</p>

Covenant	Reference in Loan Agreement	Status of Compliance
amended from time to time by agreement between the Borrower and ADB.		respond to the financial requirements of each category.
<p>Except as ADB may otherwise agree, the Borrower shall procure, or cause to be procured, the items of expenditure to be financed out of the proceeds of the Loan in accordance with the provisions of Schedule 4 to this Loan Agreement. ADB may refuse to finance a contract where any such item has not been procured under procedures substantially in accordance with those agreed between the Borrower and ADB or where the terms and conditions of the contract are not satisfactory to ADB.</p> <p>Except as ADB may otherwise agree, the Borrower shall cause all items of expenditure financed out of the proceeds of the Loan to be used exclusively in the carrying out of the Project.</p> <p>The Loan Closing Date for the purposes of Section 9.02 of the Loan Regulations shall be 31 January 2016 or such other date as may from time to time be agreed between the Borrower and ADB.</p>	<p>Section 3.03</p> <p>Section 3.04</p> <p>Section 3.05</p>	<p>Complied with. The loan proceeds were used to finance the procurement of items following Schedule 4 provisions.</p> <p>Complied with. The annual audit reports confirm that the loan proceeds were solely used to carry out the project.</p> <p>Complied with. The loan closing date of 31 January 2016 was not extended.</p>
<p>(a) The Borrower shall: (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than six months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the financial covenants of this Loan Agreement, all in the English language; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.</p> <p>(b) The Borrower shall enable ADB, upon ADB's request, to discuss the Borrower's financial statements for the Project and its financial affairs related to the Project from time</p>	Article IV, Section 4.05	<p>Complied with. (i) The MOF and MID (MOTC) setup and maintained separate financial records and accounts for utilizing ADB loan and borrower's counterpart funds.</p> <p>(ii) ADB accepted the annual APFSs including the audit report and management letter for fiscal years 2012–2015, which were prepared by independent auditor. These are all uploaded in eOps project record. Audit report and APFS for FY2016 were submitted in June 2017.</p> <p>(iii) The audit report includes auditor's opinion confirming the use of loan proceeds only for project purposes.</p> <p>(iv) MID (MOTC) provided any related information to ADB as requested.</p> <p>Complied with. ADB discussed with the MOF and MID (MOTC) any financial matters as needed.</p>

Covenant	Reference in Loan Agreement	Status of Compliance
to time with the auditors appointed by the Borrower pursuant to Section 4.05(a) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of the Borrower unless the Borrower shall otherwise agree.		
SAFEGUARDS		
<p>Environment: The Borrower shall ensure that the preparation, design, construction, implementation, operation and decommissioning of the Project and all Project facilities comply with (a) applicable national laws and regulations; (b) ADB's Safeguard Policy Statement (2009); and (c) the EARF, the IEE, any updated IEE, and the EMP and all environmental mitigation measures set forth therein.</p> <p>The Borrower shall ensure that (a) adequate budget and human recourse are made available to implement, monitor and record the implementation of the EMP;</p> <p>(b) semiannual monitoring reports are prepared and submitted to ADB within 3 months of the end of each period covered for disclosure;</p> <p>(c) relevant information from such reports is disclosed to affected persons; and</p> <p>(d) effective grievance redress mechanisms, acceptable to ADB, are established in a timely manner to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances.</p> <p>The MOTC shall ensure that all bidding documents and Works contracts contain provisions that require contractors to:</p> <p>(a) comply with the environmental measures relevant to the contractor set forth in the IEE, any updated IEE, the EMP, and any corrective or preventative actions set out in a monitoring report;</p>	<p>Schedule 5, Para. 2</p> <p>Para. 3</p> <p>Para. 4</p>	<p>Complied with. The detailed engineering design and civil works contracts incorporated ADB environment policy, applicable Kazakhstan laws and regulations, EARF, IEE, and EMP. All contract variations considered all relevant environmental safeguards.</p> <p>Complied with. An estimated budget of \$0.767 million was allocated for mitigation and environmental monitoring costs.</p> <p>Complied with. CSC submitted a total of four environmental monitoring reports during project implementation. The first biannual EMR was submitted in November 2013 and subsequent EMRs were submitted regularly.</p> <p>Complied with. IEE and EMRs were disclosed in ADB website. The PMC and CSC disclosed to affected persons the identified environmental issues.</p> <p>Complied with. A grievance redress system for affected persons was set up and implemented.</p> <p>Complied with. The bidding documents and works contracts contained provisions requiring contractors to (a) comply with environmental safeguards, (b) allocate a budget for environmental measures, (c) inform MID and ADB on any unanticipated environmental risks, and (d) record road conditions.</p>

Covenant	Reference in Loan Agreement	Status of Compliance
<p>(b) make available a budget for all such environmental measures;</p> <p>(c) provide the Borrower with copy to ADB, written notice of any unanticipated environmental risks or impacts that arise during construction or implementation of the Project that were not considered in the IEE and the EMP; and</p> <p>(d) adequately record the condition of roads, agricultural land and other infrastructure prior to starting to transport materials and construction; and fully reinstate pathways, other local infrastructure, and agricultural land to at least their pre-project condition upon the completion of construction.</p>		
<p>Resettlement:</p> <p>The Borrower shall ensure that the Project is carried out in accordance with</p> <p>(a) all applicable laws and regulations of the Borrower relating to land acquisition and involuntary resettlement; (b) ADB's Safeguard Policy Statement (2009); (c) the LARF and the LARP, including, inter alia, the following provisions</p> <p>(a) all land and all rights-of-way required for the Project shall be made available to the Works contractor in a timely manner;</p> <p>(b) no physical displacement or economic displacement shall occur until (i) the LARP has been finalized; and (ii) compensation at full replacement cost has been paid to each displaced person together with any entitlements as stipulated in the LARP for relevant road sections that are ready to be constructed;</p> <p>(c) no Works shall be awarded until the final LARP has been cleared by ADB, and no Works shall commence until the final LARP is fully implemented in accordance with its terms;</p> <p>(d) effective grievance redress mechanisms, acceptable to ADB, shall be established in a timely manner to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances;</p> <p>(e) adequate budget and human resources shall be made available under the consulting services budget to implement, monitor and record the implementation of the LARP;</p> <p>(f) external monitoring experts acceptable to ADB shall be engaged within 3 months of</p>	Para. 5	<p>(a) to (c). Complied with. A total of 46,428 hectares of state-owned land was handed over to COR for the right of way requirements. Approximately, 27.91 hectares are leased to eight households and three legal entities as natural pastureland. Affected leaseholders were reportedly provided with replacement plots. Land transfer documents were completed in August 2012. No roadside business or structures were affected.</p> <p>(d) Complied with. Grievance redress system for affected people was set up and implemented. So far there was no grievance registered.</p> <p>(e) Complied with.</p> <p>(f) Complied with. With the project B categorization for resettlement, an external monitoring specialist was not engaged to prepare independent LARP compliance monitoring reports. Instead, a biannual resettlement report was prepared and submitted to ADB for disclosure.</p> <p>(g) Complied with. LARP does not require an update as there have been no changes with location, or no resettlement impacts. The PMC has produced the LARP completion report for tranche 1. This has been published on the ADB website.</p>

Covenant	Reference in Loan Agreement	Status of Compliance
<p>the Effective Date to carry out monitoring and evaluation of the LARP and to report to ADB on semi-annually basis; and</p> <p>(g) if during implementation of the LARP, any changes to the location, land alignments or environmental and resettlement impacts are identified, the LARP shall be updated and all necessary approvals by the relevant government agencies shall be obtained, and the LARP shall be submitted to ADB for review before further implementation of the LARP.</p>		
SOCIAL		
<p>Labor Standards and Health: The MOTC shall ensure that all Works contracts include specific clauses that require contractors to</p> <ul style="list-style-type: none"> (a) comply with all applicable labor laws and regulations of the Borrower; (b) use their best efforts to employ women and local people, including disadvantaged people, living in the vicinity of the Project; (c) disseminate information at worksites on health safety for those employed during construction; (d) provide equal pay to male and female workers for work of equal type; (e) provide safe working conditions and separate culturally appropriate facilities for male and female workers; and (f) abstain from child labor. The MOTC shall ensure that the social impacts throughout Project implementation are strictly monitored and results are reported on a semiannual basis to ADB. 	Schedule 5, Para. 6	<p>Complied with. All works contracts include (a) contractors' compliance to labor standards, (b) gender considerations, (c) worksite health safety standards, (d) fair payment to male and female workers, (e) safe working conditions standards, (f) child labor avoidance, and (g) use of local workforce. Mobilized national personnel are residents of Mangystau Oblast. Salary is equal for both men and women of similar roles and equal scope of works. Women are mainly engaged for managerial, servicing, and maintenance positions.</p>
<p>Gender and Development: The Borrower shall, within 3 months of the Effective Date, review and finalize the draft GAP prepared for the MFF to ensure that in addition to facilitating employment and equal pay for women,</p> <ul style="list-style-type: none"> (a) information on the risks of sexually transmitted diseases, including HIV/AIDS is disseminated to the employees of the Works contractors under the Project and to members of the local communities surrounding the Project Road; (b) concrete and rigorous measures are implemented to detect and prevent human trafficking; 	Schedule 5, Para. 7	<p>Complied with. The works are carried out in compliance with all the specified gender requirements. The contractor prepared the HIV and human trafficking awareness program in early 2014. The medical firm engaged by the contractors prepared the materials on HIV and conducted training for workers in the contractors' two camp sites.</p>

CONTRIBUTION TO THE ADB RESULTS FRAMEWORK

No.	Results Framework Indicators ^a	Target	Achieved	Methods or Comments
1	Roads built or upgraded (km)	200	200.5	Total length achieved as originally designed based on the CSC's works completion report: (i) Km 372.6–422, 49.4 km (ii) Km 422–472.8, 50.8 km (iii) Km 472.8–514.4, 41.6 km (iv) Km 573.6–632.3, 58.7 km
2	Use of roads built or upgraded (average daily vehicle-kilometer) ^b		290,067	Average daily vehicle-kilometers for the project road based on consultant's estimates using HDM-4 analysis at re-evaluation: 290,067 average daily vehicle kilometers, given 1,447 AADT in 2016 and 200.5 km-length of the project road.

AADT = annual average daily traffic, CSC = construction supervision consultant, km = kilometer, Km = kilometer marker.

^a These are the standard transport sector Level 2 indicators as defined in the Asian Development Bank's Results Framework Indicator Definitions (April 2016). The indicator on "*roads built or upgraded (km)*" replaced the earlier indicator of "*national highways, provincial, district, and rural roads built or upgraded (km)*."

^b The "*use of roads built or upgraded*" indicator was not included in the approved Periodic Financing Request Report for Tranche 1. This figure was estimated at completion.

Sources: Asian Development Bank; Committee of Roads under the Ministry of Investment and Development; and Consultant's Report on the Post-Construction Economic Reevaluation of Project 1.

ECONOMIC REEVALUATION

A. Background

1. ADB approved the Central Asia Regional Economic Cooperation (CAREC) Corridor 2 (Mangystau Oblast Sections) Investment Program in 2010. The program consists of three projects, as follows:

- (i) **Project 1: CAREC Corridor 2 (Mangystau Oblast Sections) Investment Program.** Project 1 involves the reconstruction and upgrading of 200 km of road sections Sau-Utes–Manasha (Km 372.6–514.4) and Section 310–Shetpe (Km 573.6–632.3).¹
- (ii) **Project 2: CAREC Corridor 2 (Mangystau Oblast Sections) Investment Program.** Project 2 involves the reconstruction and upgrading of 243 km of road sections Akatu–Zhetbay–Shetpe (Km 632.3–802) and Zhetbay–Zhaonazen (Km 0–73) (footnote 41).
- (iii) **Project 3: Loan to be decided.** This involves road works to be decided including Zhaonazen Fetisovo (164 km) and Baineu–Akzhigit (84 km).

2. This report is concerned with post-construction economic reevaluation of project 1. Project 1 is divided into four packages: package 1 (km 372.6–km 422), package 2 (km 422–km 472.8), package 3 (km 472.8–km 514.3), and package 4 (km 574–km 632.30) of CAREC 2 Corridor (Mangystau Oblast sections).

B. Economic Analysis at Appraisal Stage

3. The economic analysis at appraisal was carried out using the Roads Economic Decision model for the economic evaluation of low-volume roads. The model meets the need for a simplified economic evaluation model to support the planning and programming tasks of highway agencies in charge of low-volume roads, without demanding input parameters. The model computes benefits accruing to normal, generated, and diverted traffic as a result of reduced vehicle operating costs and travel time costs.

4. The economic evaluation was carried out for the entire 430 km of the project road comprising projects 1 and 2 combined, and for the 304-km section (Km 372–676). Project costs and benefits were assessed by comparing key project parameters under without- and with-project scenarios. With the project, periodic and routine maintenance would be carried out more systematically. Without the project, the road surface would continuously deteriorate. Costs and benefits were discounted at 12%, as prescribed by Asian Development Bank (ADB) guidelines. Economic internal rates of return (EIRRs) were calculated for the road sections and the entire project. The sensitivity of the results was tested with respect to changes of the major parameters: costs and traffic growth, among others.

5. The following economic benefits for existing traffic were identified and monetized at appraisal: (i) vehicle operating cost (VOC) savings and (ii) time savings. The original economic appraisal was based on a 3-year construction period (2011–2013), with the project opening in 2014, followed by 21 years of economic life to 2034.

¹ ADB. 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Multitranchise Financing Facility to Kazakhstan for Central Asia Regional Economic Cooperation Corridor 2 (Mangystau Oblast Sections) Investment Program*. Manila (Loan 2728).

6. Benefits were calculated separately for generated traffic. Anticipated generated traffic was estimated at 30% of existing traffic volume, with benefits per user assumed to be equal to 50% of the benefits of existing users applying the “rule of a half” as standard in economic analysis of transport projects.

D. Economic Reevaluation

7. ADB conducted an economic reevaluation of the project at completion to ascertain whether the project remained economically viable. The reevaluation compared “with-” and “without-project” scenarios for project 1, and calculated incremental changes to costs and benefits using the full Highway Development and Maintenance (HDM)-4 model (Version 2.10).

8. Similar to at appraisal (i) vehicle operating cost (VOC) savings and (ii) time savings were considered, and also accident cost savings were included based on actual accident records. The project costs and benefits have been calculated over a 25-year appraisal period (2011–2035), after which a residual value²—designed to capture the benefits of the project in the post-appraisal period—is considered. The methodology involved a standard incremental discounted analysis of project cost–benefit streams.

E. Demand Estimation

9. The demand analysis at appraisal was based on estimates of annual average daily traffic derived from traffic counts taken in 2007 extrapolated to 2010. Traffic was expected to grow by 0% in 2010–2014 and by 7% per year from 2014, assuming 4% annual gross domestic product (GDP) growth, 2.5% annual population growth in Aktau, and transport demand elasticity of 1.08 for population and GDP growth.

The demand analysis for the economic reevaluation is based on the traffic forecasts presented in the feasibility study for the project and also included in the Project Performance Management System (PPMS) report dated September 2014. Table A12.1 shows the estimated traffic flows in 2011 at reevaluation.

Table A12.1: Traffic Demand at Reevaluation for Project 1 (2011)

Project Kilometers	Car	Pick-up	Minibus	Large Bus	2 Axle	3 Axle	Artic	Total
Km 372–514	506	56	18	4	208	197	104	1,093
Km 514–632	482	54	16	2	191	198	105	1,048

Km = kilometer marker.

Source: Based on data from the Project Performance Management System (PPMS), September 2014.

10. Table A12.2 shows the actual counted traffic flows in 2016 on the project 1 roads.

² Based on actual contract data supplied by the executing agency the updated salvage value was estimated at 31% of the initial project costs.

Table A12.2: Traffic Demand from Actual Traffic Counts (2016)

Project Kilometers	Car	Pick-up	Minibus	Large Bus	2 Axle	3 Axle	Artic	Total
Km 372 -514	860	96	42	19	116	100	282	1,514
Km 514-632	923	103	6	0	12	44	206	1,293

Km = kilometer marker.

Source: Based on data supplied by the Committee of Roads, May 2017.

F. Economic Costs

11. ADB provided the consultant a comparison of the appraisal estimate costs and the actual costs at completion (Table A12.3).

12. The actual total project cost was significantly lower than at appraisal, having reduced from \$333.00 million at appraisal to \$173.45 million at completion including taxes and duties. The civil works reduced by some 40% (from \$271.40 million at appraisal to \$163.52 million at completion) mainly due to lower than anticipated bid prices for the works. The consulting services costs reduced by 42% and there were no land acquisition and resettlement at completion since the land was state-owned—the executing agency provided the affected leaseholders with replacement plots with complete land transfer documents.

13. The economic analysis of the road development includes the following costs: (i) capital investment (i.e., civil works and construction supervision); and (ii) the difference in operation and maintenance costs between the with- and without-project scenarios. Costs related to taxes, duties, and financing charges during implementation have been excluded. Costs and benefits were converted from financial to economic prices in line with ADB guidelines. The economic analysis was conducted using the world price numeraire. A standard conversion factor for nontradable goods of 0.94 was applied, the shadow wage rate for skilled labor was 0.95, and the shadow wage rate for unskilled labor was 0.70 based on a previous study in Kazakhstan. Economic costs were brought to a 2009 price base year as used at appraisal by application of a relevant price index.³

³ Construction Price Index (CPI) data from the Statistics Committee of the Ministry of National Economy of Kazakhstan.

Table A12.3: Comparison of Financial Costs at Appraisal and Completion for Project 1
(\$ million, 2010 prices)

	Appraisal Estimate ^a			Actual Cost ^b		
	ADB	Government	Total	ADB	Government	Total
A. Base Cost^c						
1. Civil Works						
a. Km 372.6–422	63.20	7.60	70.80	37.19	4.93	42.12
b. Km 422–472.8	53.70	6.50	60.20	35.91	5.52	41.43
c. Km 472.8–514.4	57.70	6.90	64.60	32.74	4.48	37.22
d. Km 573.6–632.3	67.70	8.10	75.80	37.42	5.32	42.74
Subtotal Civil Works	242.30	29.10	271.40	143.26	20.25	163.51
2. Consulting Services						
Project Management Consultants (including individual consultants)	8.20	0.00	8.20	3.44	1.56	5.00
Construction Supervision Consultant	7.80	1.00	8.80	4.41	0.53	4.94
Subtotal Consulting Services	16.00	1.00	17.00	7.85	2.09	9.94
3. Land Acquisition and Resettlement	0.00	17.20	17.20	0.00	0.00	0.00
Total Base Cost (A)	258.30	47.30	305.60	151.11	22.34	173.45
B. Contingencies^d						
Total Contingencies (B)	24.70	2.70	27.40	0.00	0.00	0.00
Total Project Cost (A+B)	283.00	50.00	333.00	151.11	22.34	173.45

ADB = Asian Development Bank

^a In 2010 prices.

^b In 2016 prices. Actual costs up to loan closing date.

^c Taxes and duties included.

^d Contingency includes physical and price adjustments.

Sources: Asian Development Bank; Kazakhstan Ministry of Transport and Communications.

F. Economic Benefits

14. The benefits considered in the economic reassessment are savings in VOCs, improvements in travel time, and reduction in accidents. The calculation of time savings benefits did not include crew costs because they form part of the VOC calculations. Generated traffic was estimated at 20% of normal traffic. The benefits for existing users were first calculated and then the benefits for generated traffic were assumed to be equal to 50% of the benefits of existing users applying the “rule of a half.”

15. Savings in VOCs are calculated for the project and derive from improvements to the surface conditions and roughness on the upgraded sections, relative to the existing substandard sections. Unit rates for VOC/km, which vary with the international roughness index were calculated by HDM. Average speeds used in the economic analysis were also calculated within the HDM model based on road condition, geometry, and traffic intensity.

16. The economic analysis used hourly values of time for car passengers of \$4.04 for work travel and \$1.21 for nonwork travel and for bus passengers of \$1.39 for work travel and \$0.42 for nonwork travel.⁴ The calculation of savings from reductions in the number of road casualties was included at reevaluation relative to at appraisal with actual accident records for fatalities and injuries. Accidents were assumed to cost \$412,800 for a fatal casualty and \$51,600 for personal injury casualties.⁵

G. Results of Economic Reevaluation

17. The results of the economic reevaluation covering the full project period are in Table A12.3. The economic indicators provided are net present value (NPV), benefit–cost ratio, and economic internal rate of return (EIRR). The principal reasons for the differences in the economic indicators between the appraisal and completion stages were that construction costs significantly decreased approximately 40% from \$333.00 million at appraisal to \$173.45 million at completion including taxes and duties and the economic analysis at completion also included benefit due to accident savings, which were not included at appraisal.

Table A12.4: Project Economic Indicators

Section	NPV	BCR (ratio)	EIRR (%)
	(2010 \$ million, World Price Numeraire)		
At Appraisal (Project 1 and 2)	215.00	-	16.1%
At Appraisal (Km 372–676)	85.59		14.9%
At Completion	61.65	1.49:1	19.0%

Km = kilometer marker, NPV = net present value, BCR = benefit–cost ratio, EIRR = economic internal rate of return.
Sources: Asian Development Bank estimates, project preparatory technical assistance consultant's report, PPMS report.

18. Sensitivity tests and calculations of switching values were carried out to determine the effect of variations in key input parameters on the key economic indicators. Table A12.5 shows the results of the sensitivity analysis. There were no switching values for either value of passenger time or value of accidents as the analysis demonstrated that even when passenger time and accident benefits are ignored, the project still remains feasible. A switching value of -70% with respect to VOCs (the main source of benefits) was calculated. In the case of accident benefits excluded from the analysis, the EIRR for project 1 reduces to 18% with NPV of approximately \$52 million. In the case of reduced maintenance expenditure post-construction, EIRR was found to reduce to 18.9% with \$58.91 million NPV.

Table A12.5: Result of the Sensitivity Analysis

Scenario	NPV	EIRR (%)	Switching Value (%)
	(2010 \$ million, World Price Numeraire)		
Base	61.65	19.0	NA
Vehicle Operating Costs -25%	40.58	16.8	-67%

⁴ The values of time are based on the ADB 2008 due diligence study review of economic analysis for CAREC Transport Corridor I (Zhambyl Oblast Section) updated in line with the growth of GDP during the period 2007-2008.

⁵ The values of accident casualties are based on the ADB 2007 Feasibility Study for the Western China – Western Europe International Transit Corridor updated in line with the growth of GDP during the period 2007-2008.

Value of Time -25%	52.31	18.0
Value of Accidents -25%	59.64	18.8
Accident Benefits Excluded	52.80	18.0
Reduced Maintenance Expenditure	58.91	18.9

EIRR = economic internal rate of return, NA = not applicable, NPV = net present value.

Source: Asian Development Bank estimates.

19. In summary, the economic reevaluation was undertaken in line with ADB guidance. The project return exceeds the 12% threshold, and the project remains economically viable.

Table A12.6: Detailed Results of the Economic Analysis
(\$ million, 2010 prices, world price numeraire, undiscounted)

Year	Capital Costs	Maintenance Cost			VOC Savings	Time Savings	Accident Savings	Net Benefits
		With	Without	Reduction				
2011		1.57	1.57	0.00	0.00	0.00	0.00	0.00
2012	23.11	1.62	1.86	0.24	0.00	0.00	0.00	(22.87)
2013	36.49	0.20	1.84	1.64	0.30	0.09	0.00	(34.50)
2014	62.04	0.20	1.91	1.71	0.08	0.02	0.00	(60.24)
2015		0.22	1.84	1.62	12.24	5.41	1.17	18.73
2016		0.22	1.92	1.69	12.89	5.71	1.23	19.72
2017		0.22	1.99	1.77	13.51	5.99	1.29	20.67
2018		0.23	2.06	1.84	14.17	6.29	1.36	21.67
2019		0.23	2.14	1.91	14.85	6.60	1.43	22.72
2020		0.24	2.22	1.99	15.56	6.93	1.50	23.80
2021		7.74	2.31	(5.43)	16.28	7.28	1.57	17.42
2022		0.22	2.40	2.18	17.30	7.65	1.65	26.37
2023		0.22	2.50	2.28	18.15	8.03	1.73	27.66
2024		0.23	2.60	2.38	19.04	8.43	1.82	29.01
2025		0.23	2.71	2.48	19.97	8.85	1.91	30.42
2026		0.23	2.82	2.59	20.94	9.29	2.01	31.90
2027		0.24	2.93	2.70	21.95	9.76	2.11	33.44
2028		7.74	3.06	(4.68)	22.99	10.24	2.21	27.54
2029		0.22	3.19	2.97	24.35	10.77	2.32	37.00
2030		0.22	3.32	3.10	25.55	11.30	2.44	38.82
2031		0.23	3.46	3.24	26.80	11.87	2.56	40.72
2032		0.23	3.61	3.38	28.11	12.46	2.69	42.71
2033		0.23	3.77	3.54	29.47	13.08	2.82	44.79
2034		0.24	3.93	3.70	30.90	13.73	2.97	46.96
2035	(30.19)	0.22	4.11	3.89	32.37	14.41	3.11	79.44
EIRR (%) =								19.00%
NPV (Discount Rate: 12%) =								61.65

EIRR = economic internal rate of return, NPV = net present value, VOC = vehicle operating cost.

Source: Asian Development Bank estimates.

REPUBLICAN ROAD MAINTENANCE

A. Republican Road Network

1. Kazakhstan has a total road length of about 100,000 km, of which 23,909 km are republican roads and the rest are oblast and district roads. The republican road network includes six international corridors, which serve as international transit routes between China, Kyrgyzstan, Uzbekistan, Turkmenistan and Russian, and onwards to Europe. They form part of international agreements, like Central Asia Regional Economic Cooperation (CAREC).¹ Mangystau Oblast has 1,036 km republican roads, which include the 200.5-km project road, of which is part of CAREC Corridor 2.

B. Institutional Setup for Republican Road Maintenance

2. The Ministry of Investment and Development (MID) (previously Ministry of Transport and Communications) through its Committee of Roads (COR) is responsible for the republican roads while the local authorities are responsible for the oblast and district roads.

3. COR develops and implements a national policy on roads; develops and ensures compliance with road technical regulations and national standards; implements road investment and social policy; funds the national road operator [KazAvtoZhol joint-stock company (JSC)];² examines road works quality; oversees the establishment and operation of toll roads, and traffic management activities; and provides budget transfers to oblasts for local road development, repair and maintenance, among others.³ It has a total of 56 staff (excluding the staff of KazdorNII, Kazakhavtodor⁴ and the zhollaboratories⁵, which are under MID).

4. KazAvtoZhol JSC is responsible for the daily management and supervision of republican road works. As the road manager, it (i) procures and supervises the (re)construction and repair works (capital, mid-term and routine repairs); (ii) directly manages tolled roads, including toll collection and routine maintenance; and (iii) supervises the routine maintenance works of Kazakhavtodor. KazAvtoZhol tenders all works through open bidding, except routine maintenance that COR directly awarded to Kazakhavtodor JSC or carried out by Kazavtozhol JSC (in the case of toll roads).

5. KazAvtoZhol of the Mangystau Oblast took over the operation and maintenance of the completed three road sections after the defects notification period, and eventually of the completed first road section after the extended defects notification period.

C. Republican Road Maintenance Expenditures

¹ 2016 Consultant Report for Managing for Development Results in the Transport Sector of Kazakhstan.

² KazAvtoZhol JSC was created by Government Decree No. 79 dated 1 February 2013. It was registered as a state company on 13 March 2013. Its sole shareholder is the Government of Kazakhstan, represented by the Committee for the Public Property and Privatization of the Ministry of Finance. The Ministry of Investment and Development is authorized to own and use 100% of state-owned shares of the company based on the Delivery and Acceptance Act. On 29 January 2015, the 100% state-owned shares of the company were transferred to Kazakhstan TemirZholy National Company JSC under trust management based on Contract No. 22. It started its operation in March 2013. Its official website is <http://kazautozhol.kz/>.

³ <http://roads.mid.gov.kz/en/pages/committee-statute> and footnote 3, page 40.

⁴ Kazakhavtodor was created by Decree #1266 in 1998 to manage international and republican roads. In 2000, its responsibility has been limited to the supply of maintenance services; the management functions were transferred to CTID and later COR.

⁵ COR has 14 zhollaboratories, republican state institutions (RSI), was created in 2005 by resolution #1305, to control the quality of road works (construction and repair) and materials in the republican roads, oblast and district roads.

6. The government provides funds annually to COR through MID for the road sector expenditures (construction, rehabilitation, and maintenance). COR, as the Client of the republican roads, enters into annual “state order” agreement with and provides funds to KazAvtoZhol for construction, reconstruction and repair works (capital, mid-term and routine repairs) of the republican roads. In addition, COR directly signs contracts with Kazakhavtodor for supplying routine (summer and winter) maintenance services.

7. Table A13.1 shows an increasing trend of the actual maintenance expenditures⁶ for the republican roads. It increased from \$15,401 million in 2005 to \$23,291 million in 2010 to \$43,422 million in 2016. On average, the expenditure for the current repair and maintenance is about 37% of the total expenditures; 33% for the capital repair and 30% for the midterm repair. Even if the trend is increasing, the expenditures fell short of the standard requirements for road maintenance expenditures.

8. The table also shows the demand or requirements for funding the current repair and maintenance starting 2013 up to 2016. The fund allocation for the current repair and maintenance follows a norm of financing, which is based on road categories while the fund allocation for midterm repair and capital repair is determined after the diagnostics of roads and bills of defects. On average, the fund utilization for the current repair and maintenance is only about 31% of the requirements. And hence, the government is determined to complete its toll road plan.

Table A13.1: Republican Road Maintenance Expenditures

Year	Actual Expenditures ^a				CRM Requirements	
	Capital repair (T million)	Midterm repair (T million)	CRM (T million)	Total (T million)	(T million)	% of CRM Expenses
2005	3,994	7,328	4,079	15,401		
2006	5,039	7,122	4,979	17,140		
2007	6,892	6,649	6,762	20,303		
2008	6,130	6,838	7,282	20,250		
2009	7,118	6,412	7,747	21,278		
2010	10,399	3,763	9,129	23,291		
2011	11,116	7,085	13,683	31,884		
2012	8,788	8,581	9,631	27,000		
2013	10,153	8,946	7,901	27,000	39,801	20%
2014	10,087	8,953	15,677	34,717	42,715	37%
2015	13,133	11,869	14,190	39,192	43,273	33%
2016	13,175	13,216	17,031	43,422	50,786	34%

^a Government road maintenance allocation was fully utilized, as COR confirmed.

CRM = current repair and maintenance, T = Kazakhstan tenge.

Source: Committee of Roads.

9. For the Mangystau Oblast, Table A13.2 presents the road maintenance budget. On average, the budget is about T303,987 per kilometer per year, which is not sufficient.

Table A13.2: Mangystau Road Maintenance Budget

Year	T ('000)
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⁶ COR confirmed full utilization of every annual allocation for road maintenance.

2008	224,500
2009	325,000
2010	399,918
2011	420,023
2012	300,000
2013	250,000
2014	300,000
2015	300,000
2016 (mid)	133,002

Source: Committee of Roads.

10. To augment the road maintenance funds, the State Program for Infrastructure Development “Nurly Zhol,”⁷ among others, aims at installing toll system on the republican roads of Kazakhstan. On 1 July 2013, a pilot project on toll system has been in place in 211-km Astana–Shchuchinsk road section.

11. Table A13.3 shows the toll road map for installing toll system in about 22 highway sections totaling about 7,000 km until 2020. The toll system installation of the three road sections (Almaty–Kapshagay, Astana–Temirtau, and Almaty–Horgos) is ongoing and will be launched by the end of 2017. The 445-km Aktau–Beineu section, of which the project road is a part, is scheduled for toll system installation in 2018. Road toll system installation for the other 13 road sections are also scheduled in 2018. Five road sections are for toll installation in 2019, and three more road sections in 2020. The optimal toll fee is currently being determined, of which the road transport ecological emission is among the considerations. The findings will be discussed with the public.

Table A13.3: Roadmap of Toll Installation on the Republican Roads

No	Road section	Length (km)	Design Preparation	Implementation Period	Launch of Toll System
2013					
1	Astana–Shchuchinsk	211			June 2013
	2013 Total	211			
2017					
2	Almaty–Kapshagay	56	DD is available	Feb–Oct 2017	November 2017
3	Astana–Temirtau	169	DD is available	Feb–Oct 2017	November 2017
4	Almaty–Horgos	304	DD is available	Feb–Oct 2017	November 2017
	2017 Total	529			
2018					
5	Kapshagay–Taldykorgan	173	Feb–Jul 2017	Sep 2017–Sep 2018	October 2018
6	Western Europe– Western China Corridor				
	a. Russian border– Aktobe–Kyzylorda	1146	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
	b. Kyzylorda–Shymkent– Taraz	595	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
	c. Taraz–Kainar (Blagovechshenka)	237	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
	d. Shymkent–Uzbek border	101	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
7	Astana–Kostanay	835	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018

⁷ Footnote 7, page 2.

No	Road section	Length (km)	Design Preparation	Implementation Period	Launch of Toll System
8	Shchuchinsk–Koshetau–Russian border	320 /68	Feb–Aug 2017	Sep 2017–Sep 2018 (Shchuchinsk–Petrovavlovsk)	October 2018
9	Pavlodar–Russian border	217	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
10	Aktobe–Uralsk–Russian border	536	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
11	Uralsk–Russian border	100	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
12	Astana–Pavlodar	441	Feb–Aug 2017	Sep 2017–Sep 2018	October 2018
13	Atyrau–Dossor–Beyneu Akzhigit–Uzbek border	419 /84	Feb–Aug 2017	Sep 2017–Sep 2018 (Atyrau–Beineu)	October 2018
14	Aktau–Beyneu	445	Feb–Aug 2017	2018	October 2018
2018 Total		5,413			
2019					
15	Petrovavlovsk - Russian border	68	Feb–Aug 2017	2019	2019
16	Beyneu–Akshigit–Uzbek border	84	Feb–Aug 2017	2019	2019
17	Zhetybay Zhanaozen	73	2017	2019	2019
18	Taskesken–Bakhty	180	2017	2019	2019
19	Usharal - Dostyk	184	2017	2019	2019
2019 Total		589			
2020					
20	Pavlodar–Semey–Kalbatau	482	2017	2020	2020
21	Kalbatau–UstKamenogorsk	102	2017	2020	2020
22	Kurty Burybaital	228	2017	2020	2020
2020 Total		812			
2017–2020 Total		7,343			

Source: Committee of Roads

D. Road Operator

12. KazAvtoZhol was declared the sole state operator in 2013 to build, operate, and maintain the 23,909 km-long national highway network. It absorbed the 14 oblast road departments under COR. Its total staff in 2016 reached 662 as of 31 December 2016.

13. Table A13.4 presents KazAvtoZhol's financial record in providing services for the republican road maintenance from its inception in 2013 to 2016.⁸ The trend shows an improvement—in 2016, the company registered a profit of T 27 million, given its losses in 2014 and 2015. The company receives revenue from providing services for development of general-purpose highway network (construction, reconstruction, repair and maintenance of highways). The company renders these services as part of the government program through a state order agreement.

⁸ Financial statements are sourced from <http://kazautozhol.kz/index.php/ru/partneram/dlya-investorov>.

Table A13.4: KazAvtoZhol JSC's Income and Expenses

<i>in Tenge million</i>			
Year	Income ^a	Expenses ^b	Profit (Loss)
2013 ^c	41,427.40	41,368.686	58.71
2014	145,431.01	145,510.21	(79.20)
2015	214,714.71	214,722.58	(7.86)
2016	187,593.34	187,566.17	27.17

^a Includes revenue, finance income and income tax benefit, but excludes the toll revenues from 211-km Astana–Shchuchinsk road section which is under trust management agreement.

^b Includes cost of sales, administrative expenses and income tax expense, but excludes the expenses for operating and maintaining the tolled Astana–Shchuchinsk road section.

^c From March 2013 to December 2013.

Source: Audited financial statements at <http://kazautozhol.kz/index.php/ru/partneram/dlya-investorov>

14. On 30 May 2013, the Committee for the State Property and Privatisation of the Ministry of Finance (the Committee), Ministry of Investment and Development and KazAvtoZhol agreed to transfer to KazAvtoZhol the responsibility to collect the toll fees and operate and maintain the 211-km Astana–Shchuchinsk road section for a 10-year period under trust management, without purchase option.⁹

15. KazAvtoZhol as a trustee collects road tolls and operate and maintain the road on behalf of the Committee. KazAvtoZhol maintains the accounting records related to trust management activities separately from that of transactions and events not related to trust management activities. All revenues in the form of road tolls collected and relevant expenses are presented on net basis and the totals are recognized either as payables to or receivables from the Committee, depending on whether the road toll revenues exceed the KazAvtoZhol's expenses on road maintenance.¹⁰ The following table shows the trust management transactions. The four-year data shows an improving trend that would demonstrate that toll revenues could be sufficient to pay for operations and maintenance costs for a tolled road section.

Table A13.5: KazAvtoZhol JSC's Trust Management Transactions

<i>in Tenge '000</i>				
	2013	2014	2015	2016
Opening balance	-	18,132	(113,946)	(13,808)
Revenue and other income	669,452	1,119,660	1,032,072	1,142,091
Trade and other payables	-	48,521	7,050	13,422
Cost of sales	(525,330)	(907,149)	(809,095)	(925,646)
Construction -in-progress for transfer	(58,334)	(179,863)	(8,473)	(22,434)
Administrative expenses	(67,656)	(117,794)	(154,977)	(181,690)
Cash	-	(55,198)	(129,557)	98,665
Inventories	-	(55,436)	(65,802)	5,683
Other	-	15,181	228,920	(117,768)
Company's payables to/(receivables from) the Committee	18,132	(113,946)	(13,808)	(1,485)

Source: Audited financial statements at <http://kazautozhol.kz/index.php/ru/partneram/dlya-investorov>

⁹ Footnote 1, page 44. The trust management agreement was registered with the Ministry of Justice of the Republic of Kazakhstan on 1 July 2013.

¹⁰ Footnote 1, page 44.

ENVIRONMENT AND SOCIAL SAFEGUARDS

A. Environment

1. The project was classified *category B* for environment at appraisal. The Ministry of Transport and Communications (MOTC) prepared the initial environmental examination (IEE) in 2010 based on the preliminary environment assessment prepared by Government-engaged consultant for the project feasibility study; this was approved by State Environmental Review. The IEE followed ADB's Safeguards Policy Statement (2009), the investment program's environmental assessment and review framework, and the country's environmental laws. MOTC conducted a series of public consultations in two major settlements (Shetpe and Zhetybay) as well as in Aktau City in April–June 2010 to present to local communities engineering designs, expected benefits, and anticipated environmental and social impacts and proposed mitigation measures. The IEE found that the project would not have significant negative impacts on the environment as the alignment would not pass through any settlements or ecologically sensitive areas, project activities would be limited to reconstruction on the existing alignment, and anticipated negative impacts were site-specific and could be mitigated through proper design and implementation of the environmental management plans.

2. The IEE mitigation measures for anticipated site-specific environmental impacts included selection of sites for work camps, storage facilities, asphalt plants, concrete batchers and crushers away from settlements and protected areas; and appropriate sourcing of water for drinking and construction activities to avoid ecological damages. These measures were included in the environmental provisions in bidding documents and contracts, and in the environmental management plans (EMPs). The contractors were responsible for implementing the EMPs and the construction supervision consultant (CSC) monitored the effectiveness of the contractors' compliance with the requirements. The project team recommended a capacity building for environmental management. The IEE provided clear mitigation and monitoring activities for the EMP to ensure that the project would not have significant adverse environmental effects.

3. During project implementation, the CSC approved the EMPs prepared by the contractors and monitored its implementation. EMPs also defined certain permissions the contractors needed to obtain from relevant authorities for setting up camps, quarry or borrow pit operations, asphalt and crushing plants, required sampling, laboratory analysis, and tests. There were two camp sites for sections 1 to 4. The camp established for section 4 was located 20 kilometers (km) from Shetpe town, the larger camp for sections 1–3 was located 117 km from Beineu. The CSC regularly inspected the site and observed compliance on the environmental indicators such as soil contamination, emission concentrations, and noise and vibration levels with permissible ecological requirements. Some issues concerning the borrow pits or quarry operation and rehabilitation, dust generation at the asphalt plant and crushing plant area, bridge construction sites, and the contractors' work camp housekeeping were revealed for the contractors' corrective actions, which were monitored by the CSC for implementation and validation. Mitigation measures set out in the IEE and the EMPs were fully implemented by the contractors during the construction phase. The four environmental monitoring reports prepared in 2013–2015 by the CSC recorded all the environmental issues, and confirmed that there were no significant negative impacts during implementation. CSC and project management staff performed the training program and capacity building for the contractors' staff for effective implementation and management of EMP, including on work safety, proper handling and disposal of spoil, and avoiding impacts on local populations through noise and air pollution.

4. At completion, local authorities reported no residual impacts and no complaints from people living along the project road. The contractors satisfactorily restored the borrow pits or quarries, plants, and other project facilities. The IEE and the four environmental monitoring reports prepared by CSC were disclosed on the ADB website.

5. The impact of the project on vehicle emissions was estimated based on Highway Development and Management Model-4 analysis. The table below sets out the reduction in annual emission quantities expressed in tons over the analysis period forecast. The results suggest a reduction in CO₂ emissions of more than 269,000 tons over the full analysis period, with a reduction of some 7,989 tons in 2016.

Table A14: Reduction in Annual Vehicle Emissions 2011-2035

Year	Annual Emission Quantities (tons)						
	HC	CO	NOx	SO ₂	CO ₂	Par	Pb
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	(1.21)	(1.17)	(4.50)	(0.24)	(366.50)	(1.04)	0.00
2014	(0.33)	(0.32)	(1.21)	(0.07)	(98.40)	(0.28)	0.00
2015	(24.66)	(1.06)	(96.09)	(5.60)	(7,647.83)	(23.61)	(0.05)
2016	(25.78)	(0.84)	(100.44)	(5.87)	(7,989.57)	(24.72)	(0.05)
2017	(26.86)	(0.62)	(104.76)	(6.10)	(8,332.80)	(25.80)	(0.05)
2018	(27.99)	(0.38)	(109.25)	(6.38)	(8,688.17)	(26.92)	(0.05)
2019	(29.17)	(0.11)	(113.89)	(6.66)	(9,056.33)	(28.09)	(0.05)
2020	(30.39)	0.21	(118.67)	(6.95)	(9,436.08)	(29.29)	(0.05)
2021	(31.63)	0.59	(123.59)	(7.24)	(9,825.55)	(30.52)	(0.06)
2022	(35.00)	(1.78)	(136.31)	(7.95)	(10,847.28)	(33.50)	(0.06)
2023	(36.53)	(1.58)	(142.34)	(8.28)	(11,327.03)	(35.01)	(0.08)
2024	(38.13)	(1.31)	(148.54)	(8.65)	(11,816.61)	(36.56)	(0.07)
2025	(39.73)	(0.98)	(154.93)	(9.04)	(12,323.48)	(38.14)	(0.05)
2026	(41.41)	(0.61)	(161.55)	(9.42)	(12,847.38)	(39.81)	(0.08)
2027	(43.13)	(0.19)	(168.34)	(9.83)	(13,387.65)	(41.51)	(0.07)
2028	(44.90)	0.29	(175.36)	(10.25)	(13,944.05)	(43.28)	(0.09)
2029	(49.31)	(2.57)	(192.01)	(11.16)	(15,279.26)	(47.17)	(0.09)
2030	(51.49)	(2.31)	(200.53)	(11.67)	(15,956.50)	(49.30)	(0.10)
2031	(53.70)	(1.93)	(209.25)	(12.18)	(16,647.42)	(51.48)	(0.10)
2032	(55.98)	(1.48)	(218.28)	(12.71)	(17,362.78)	(53.74)	(0.10)
2033	(58.35)	(1.00)	(227.60)	(13.28)	(18,102.19)	(56.09)	(0.12)
2034	(60.80)	(0.37)	(237.21)	(13.86)	(18,864.62)	(58.50)	(0.11)
2035	(63.29)	(0.30)	(247.12)	(14.44)	(19,649.61)	(60.98)	(0.10)
Total	(869.77)	(19.82)	(3,391.77)	(197.83)	(269,797.09)	(835.34)	(1.58)

Carbon dioxide = CO₂, Carbon monoxide = CO, Hydrocarbon = HC, Lead = Pb, Nitrous oxide = NO_x, Particulates=Par.

Source: Consultant's Report on the Post-Construction Economic Reevaluation of Project 1.

B. Land Acquisition and Social Safeguards

6. The project was classified *category B* for involuntary resettlement. The initial assessment was based on preliminary engineering design in March–July 2010. The project management unit conducted public consultations conducted in April–June 2010 in Zhetybay and Shetpe to introduce the project to the communities and discuss potential social safeguard impacts on communities as well as entitlements of affected persons and grievance procedures. MOTC prepared the draft land acquisition and resettlement plan (LARP) in August 2010 in compliance with the land acquisition and resettlement framework, which was agreed with the government for the investment program. No displaced people were identified at appraisal. Information on registered land users was provided by Mangystau State Scientific and Production Center for Land Management (GosNPTsZem). According to LARP, eight households leasing the state land and one legal entity were affected because of permanent land acquisition of 63.46 hectares (ha). Temporary use would require 227 ha of land, of which 109.48 ha was land leased by one household and three legal entities. No roadside businesses or residential structures were assessed as to be displaced.

7. During construction, 227 ha of land were temporarily taken, for which compensation was based on local rental rates for the duration of use and income loss due to temporary land use. The contractors acquired 200.32 ha from state-reserved lands, 18.35 ha from private owners, and 8.32 ha from a legal entity. Out of total private land, 15.35 ha were rented for 5 years and remaining 3 ha for 7 years. Contracts with private land owners were signed in 2012. For government-owned land, contract signing was not required. The contractors rented land for service roads, crushing and asphalt plants, camp sites, and borrow pits.

8. During construction, a total of 63.46 ha of lands was acquired for permanent use, of which 27.91 ha was leased land (eight households and one legal entity) and 35.55 ha of state land reserves. Compensation for permanently acquired land was not paid in cash but affected land owners were offered a “land for land” option as there were available state lands. Land owners were provided alternative lands under the agreements signed with the Department of Roads.

9. No physical displacement of households was required and none of the affected households lost 10% or more of their productive assets. A total of 63.46 ha of permanent land were acquired for the project. In addition, 227 ha of land were required for temporary use, for which compensation of T31,257,547 was paid, in the form of rent.

10. The LARP was posted on the Asian Development Bank (ADB) website in August 2010. The project management consultant prepared the LARP completion report in November 2013. Four internal LARP monitoring reports prepared by CSC during project implementation, 2013–2015, were disclosed on the ADB website.

C. Indigenous People

11. The project was classified *category C* for effects on indigenous peoples. The project did not affect any people fitting ADB’s definition of indigenous peoples.

D. Grievance Redress Mechanism

12. A grievance redress mechanism (GRM) was set up for the project with grievance focal points designated at the level of Akimats, Mangystau Road Department and the CSC to receive,

resolve, or forward complaints received from the affected persons and the public. According to the LARP, the grievances would be resolved at any of the five levels, starting from village level up to the *raion*¹ court, if not resolved at any of the four levels (village, *raion akimat*, oblast road department, and Committee of Roads). To help the people better understand the GRM, a full-time staff of the CSC was designated for all four sections to receive the complaints and forward to the local government at village level for necessary action. There were no formal grievance or repression on social or environment safeguard issues from affected people or communities raised through GRM but four informal grievances from the contractors' workers (personal protective equipment and other issues) and local people (cattle crossing), which were brought to the attention of the CSC and resolved. For the cattle crossing, the local *akimat* and the CSC discussed the issue at village level and found a solution. Given that there was no designated cattle-crossing area and cattle crosses the road everywhere, construction of a passage turned out to be difficult. COR, CSC and villagers decided to place special signs in several places along the project road to warn local people and road users of cattle-crossing areas.

¹ A *raion* is a local administrative subdivision of the oblast, which is analogous to a district.

PROJECT OVERALL ASSESSMENT

Criterion	Weight (%)	Assessment	Score ^a	Weighted Rating
Relevance	25	<i>Relevant</i>	2	0.50
Effectiveness	25	<i>Effective</i>	2	0.50
Efficiency	25	<i>Efficient</i>	2	0.50
Sustainability	25	<i>Likely to be Sustainable</i>	2	0.50
Overall Assessment^b		<i>Successful</i>		2.00

^a Rating range: 3 = highly relevant/effective/efficient/most likely; 2 = relevant/effective/efficient/likely; 1 = less than relevant/effective/efficient/less likely; 0 = irrelevant/ineffective/inefficient/unlikely.

^b Highly successful: Overall weighted average is ≥ 2.7 ; Successful: overall weighted average is ≥ 1.6 and < 2.7 ; Less than successful: overall weighted average is ≥ 0.8 and < 1.6 ; Unsuccessful: overall weighted average is < 0.8 .

Source: ADB. 2016. *Guidelines for the Evaluation of Public Sector Operations*. Manila.