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Report No: PAD1456

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US$977.86 MILLION

TO THE

REPUBLIC OF KAZAKHSTAN

FOR A

CENTER WEST REGIONAL DEVELOPMENT CORRIDOR PROJECT

April 6, 2016

Transport and ICT Global Practice
Europe and Central Asia

CURRENCY EQUIVALENTS
(Exchange Rate Effective as of February 10, 2016)

Currency Unit	=	Kazakhstan Tenge (KZT)
KZT 360	=	US$1
US$0.032	=	KZT 1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank	FM	Financial Management
CAP	Committee of Administrative Police of the Ministry of Interior	GDP	Gross Domestic Product
CAREC	Central Asia Regional Economic Cooperation	GOK	Government of Kazakhstan
COP21	21st Conference of the Parties	GRS	Grievance Redress Service
CPS	Country Partnership Strategy	IFIs	International Financial Institutions comprising the World Bank, ADB, EBRD, and IsDB
CR	Committee for Roads	IFR	Interim Unaudited Financial Report
CWP	Center West Regional Development Corridor Project	IsDB	Islamic Development Bank
DPL	Development Policy Lending	ITS	Intelligent Transportation Systems
EBRD	European Bank for Reconstruction and Development	IWG	Inter-agency Working Group
EIRR	Economic Internal Rate of Return	JSC	Joint Stock Company
EMP	Environmental Management Plan	KAZ	KazAvtoZhol National Roads Operator JSC
ESIA	Environmental and Social Impact Assessment	KTZ	JSC National Company Kazakhstan Temir Zholy
EWRP	East West Roads Project	M&E	Monitoring and Evaluation
MoID	Ministry of Investments and Development	RPF	Resettlement Policy Framework
NGO	Nongovernmental Organization	RSA	Road Safety Audit
NPV	Net Present Value	RSE	Republican State-owned Enterprise Kazakhavtodor
O&M	Operations and Maintenance	RSP	Road Safety Program
PDO	Project Development Objective	SME	Small and Medium Enterprise
PFA	Partnership Framework Arrangement	SPDITI	State Program for Development and Integration of Transport Infrastructure to 2020

Plan	Corridor Development Action Plan	SWRP	South West Roads Project
PMC	Project Management Consultant	WE-WCh	Western Europe - Western China
POM	Project Operation Manual		
PRD	Kazakhstan Program for Regional Development		
RAP	Resettlement Action Plan		
RAS	Reimbursable Advisory Services		

Regional Vice President:	Cyril E. Muller
Acting Country Director:	Mariam J. Sherman
Senior Global Practice Director:	Pierre Guislain
Practice Manager:	Juan Gaviria
Task Team Leaders:	Aliya Karakulova/Jacques Buré

KAZAKHSTAN
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Center West Regional Development Corridor (P153497)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

Transport and ICT Global Practice

Report No.: PAD1456

Basic Information		
Project ID P153497	EA Category A - Full Assessment	Team Leader(s) Jacques Bure, Aliya Karakulova
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ]	
	Financial Intermediaries [ ]	
	Series of Projects [ ]	
Project Implementation Start Date 21-Apr-2016	Project Implementation End Date 29-Oct-2021	
Expected Effectiveness Date 15-Dec-2016	Expected Closing Date 31-Dec-2021	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Juan Gaviria	Pierre Guislain	Mariam J. Sherman	Cyril E Muller

Borrower: Ministry of Finance			
Responsible Agency: Committee for Roads			
Contact:	Satjan Ablaliev	Title:	Deputy Chairman
Telephone No.:	77172754688	Email:	s.ablaliev@mid.gov.kz
Responsible Agency: JSC KazAvtoZhol			
Contact:	Ermek Kizatov	Title:	Chairman
Telephone No.:	77172278800	Email:	info@kazautozhol.kz

Project Financing Data(in USD Million)					
[X]	Loan	[ ]	IDA Grant	[ ]	Guarantee

[ ]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	1111.20	Total Bank Financing:	977.86
Financing Gap:	0.00		

Financing Source	Amount
Borrower	133.34
International Bank for Reconstruction and Development	977.86
Total	1111.20

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	0000	0000	0000	0000
Annual	60.00	200.00	220.00	220.00	200.00	77.86	0.00	0.00	0.00	0.00
Cumulative	60.00	260.00	480.00	700.00	900.00	977.86	0.00	0.00	0.00	0.00

Institutional Data

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Cross Cutting Topics

[X] Climate Change
[ ] Fragile, Conflict & Violence
[ ] Gender
[X] Jobs
[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	Rural and Inter-Urban Roads and Highways	100	9	
Total		100		

☐ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Financial and private sector development	Infrastructure services for private sector development	25
Rural development	Rural services and infrastructure	25
Trade and integration	Export development and competitiveness	25
Trade and integration	Regional integration	25
Total		100

Proposed Development Objective(s)

The Project Development Objectives are to improve the transport connectivity within the regions along the Kazakhstan Center West Corridor and strengthen the capacity of selected agencies for the effective implementation of the corridor development, and road asset preservation policies.

Components

Component Name	**Cost (USD Millions)**
Component 1: Infrastructure development and Supervision	1,088.08
Component 2: Corridor Development	5.78
Component 3: Operation and Maintenance	9.09
Component 4: Road Safety	2.88
Component 5: Project Management	5.37

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	**Rating**
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	
OVERALL	Substantial

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]

Does the project require any waivers of Bank policies?	Yes [ ]	No [X]
Have these been approved by Bank management?	Yes [ ]	No [X]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X]	No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04	**X**	
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**
Reporting on progress of project implementation prepared regularly	**X**		Yearly

Description of Covenant

The Borrower, through MoID , shall monitor and evaluate the progress of the Project and prepare Project Reports in accordance with the provisions of Section 5.08 of the General Conditions and on the basis of indicators acceptable to the Bank.

Name	**Recurrent**	**Due Date**	**Frequency**
External audit of project financial statements performed annually	**X**		Yearly

Description of Covenant

The Borrower shall have its Financial Statements audited in accordance with the provisions of Section 5.09 (b) of the General Conditions. Each audit of the Financial Statements shall cover the period of one fiscal year of the Borrower.

Name	**Recurrent**	**Due Date**	**Frequency**
Interim Financial Reporting prepared quarterly	**X**		Quarterly

Description of Covenant

The Borrower, through MoID's Committee for Roads shall prepare project management-oriented IFRs throughout the life of the project.

Name	Recurrent	Due Date	Frequency
The existing automated accounting software updated	X		CONTINUOUS

Description of Covenant

Not later than 45 days following effectiveness the Borrower will update its automated accounting software to fit the needs and specificities of the new project.

Name	Recurrent	Due Date	Frequency
Agreement with JSC KazAvoZhol serving as the Project Management Consultant	X		CONTINUOUS

Description of Covenant

The Borrower, through MoID, no later than fifteen days from the Effective Date, enter into, and thereafter maintain throughout Project implementation, an agreement with KAZ for the services of KAZ to serve as the PMC, and such agreement shall ensure the PMC's maintenance of functions, responsibilities, and qualified staffing in adequate numbers (specifically in the areas of procurement, financial management, accounting, social and environmental safeguards, disbursement, administrative support, monitoring and evaluation, and technical subject matter expertise), including the maintenance of a safeguards unit.

Name	Recurrent	Due Date	Frequency
Inter-agency Working Group setup	X		CONTINUOUS

Description of Covenant

No later than ninety days (90) days from the Effective Date, the Borrower, through MoID, shall establish, and thereafter maintain throughout Project implementation, an Inter-Agency Working Group, with terms of reference satisfactory to the Bank, necessary for, inter alia, providing (i) general oversight and guidance over, and strategic supervision of, the Project, and (ii) a forum for consultation with other Project stakeholders to ensure that the Project responds to the needs of the local population and promote regional development. The Borrower shall ensure that the Inter-Agency Working Group is chaired by the vice-minister of the MoID and has appropriate representation from governmental ministries and agencies participating in and/or benefiting from the Project.

Name	Recurrent	Due Date	Frequency
Akimat involvement in the implementation of the project is defined.	X		CONTINUOUS

Description of Covenant

For the purpose of facilitating the carrying out of component 2 of the Project, the Borrower shall enter into a memorandum of understanding with each Akimat involved, under terms and conditions satisfactory to the Bank, which shall include the undertakings of the Borrower, through MoID, and the respective Akimat to collaborate in carrying out relevant Project activities, all in accordance with the relevant provisions set forth in this Agreement, the POM, the Anti-Corruption Guidelines and, as appropriate, the ESIA, RPF, EMPs and RAPs.

Name	Recurrent	Due Date	Frequency
Incorporation of Bank safeguard policy requirements in technical assistance	X		CONTINUOUS

Description of Covenant

The Borrower, through MoID, shall ensure that the terms of reference of any consultancy in respect to components 1, 2 and 4 of the Project incorporate the requirements of the Bank's Safeguards Policies then in force, as applied to the advice conveyed through such technical assistance.

Name	Recurrent	Due Date	Frequency
Equipment to be delivered once the proper conditions are met	X		CONTINUOUS

Description of Covenant

Contract for the purchase of any equipment to be financed under component 3 of the Project only after KAZ and the road maintenance service provider identified to receive and use the said equipment have properly executed a Road Maintenance Agreement to carry out road operations and maintenance activities; and ensure that such equipment shall only be used for the maintenance of the road sections financed under component 1 of the project.

Name	Recurrent	Due Date	Frequency
Enhancing local contracting industry	X		CONTINUOUS

Description of Covenant

For the purpose of improving local industries and in support of facilitating the carrying out of civil works under component 1 of the Project , recommend and promote to the contractors for those activities the provision of vocational training to local construction workers engaged in carrying out the related works, with the objective of reaching up to 5000 workers.

Name	Recurrent	Due Date	Frequency
Adherence to Project Operational Manual, ESIA and RPF	X		CONTINUOUS

Description of Covenant

The Borrower, through MoID, shall ensure the requirements, criteria, policies and procedures and organizational arrangements set forth in the POM, ESIA and RPF are applied in connection with carrying out the Project.

Name	Recurrent	Due Date	Frequency
Operation and Maintenance of the Committee for Roads	X		CONTINUOUS

Description of Covenant

The Borrower, through MoID, shall operate and maintain the CR to be responsible for carrying out Project budgeting, management and implementation, and for monitoring and reporting Project results and impact.

Conditions

Source Of Fund	Name	Type
IBRD	The Project Operational Manual satisfactory to the Bank adopted	Effectiveness

Description of Condition

The Borrower, through MoID, shall adopt a Project Operational Manual satisfactory to the Bank.

Team Composition

Bank Staff				
Name	**Role**	**Title**	**Specialization**	**Unit**
Jacques Bure	Team Leader (ADM Responsible)	Lead Transport Specialist		GTI03
Aliya Karakulova	Team Leader	Operations Officer		GTI03
Nurbek Kurmanaliev	Procurement Specialist (ADM Responsible)	Procurement Specialist		GGO03
Aliya Kim	Financial Management Specialist	Financial Management Specialist		GGO21
Ahmed A. R. Eiweida	Peer Reviewer	Lead Urban Specialist		GSU08
Aleksandra Durova	Team Member	Transport Specialist		GTI03
Alexei Slenzak	Safeguards Specialist	Senior Environmental Specialist		GEN03
Anca Cristina Dumitrescu	Peer Reviewer	Senior Operations Officer		OPSPQ
Animesh Shrivastava	Peer Reviewer	Program Leader		ECCU8
Dorsati H. Madani	Team Member	Senior Economist		GMF09
Fiona J Collin	Team Member	Sr Transport. Spec.		GTI03
Giang Thanh Huong Le	Team Member	Program Assistant		GTI03
Ivan Rossignol	Peer Reviewer	Chief Technical Specialist		GTCD2
Jasna Mestnik	Team Member	Finance Officer		WFALA
Jing Xiong	Team Member	Transport Specialist		GTI03
Keiko Inoue	Team Member	Senior Education Specialist		GED03
Lisa Lui	Counsel	Lead Counsel		LEGLE
Lola Ibragimova	Safeguards Specialist	Senior Social Development Specialist		GSU03
Mohammed Dalil Essakali	Peer Reviewer	Operations Adviser		SARDE
Nabila Assaf	Team Member	Senior Private Sector Development Specialist		GTC05

Raman V. Krishnan	Team Member	Senior ICT Policy Specialist		GTI09
Rodrigo Archondo-Callao	Team Member	Sr Highway Engineer		GTI03
Rustam Arstanov	Team Member	Environmental Specialist		GEN03
Steven Farji Weiss	Team Member	Economist		GTI04
Thomas Farole	Team Member	Lead Economist		GPSJB

Extended Team

Name	Title	Office Phone	Location

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Kazakhstan	null	Turgay	X		
Kazakhstan	null	Turgay	X		
Kazakhstan	Qostanay	Arkalyk	X		
Kazakhstan	Qostanay	Arkalyk	X		
Kazakhstan	Astana Qalasy	Astana	X		
Kazakhstan	Astana Qalasy	Astana Qalasy	X		

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? Consulting services to be determined

I. STRATEGIC CONTEXT

A. Country Context

1. **The Republic of Kazakhstan is a transcontinental country located in Central Asia.** It is ranked as the ninth-largest country in the world. It is also the world's largest landlocked country with a territory of 2,727,300 km². Kazakhstan is neighbored clockwise from the north by the Russian Federation, China, the Kyrgyz Republic, Uzbekistan, and Turkmenistan. It also borders on a significant part of the Caspian Sea. There are 17.7 million people living in Kazakhstan, which results in a density of less than six people per 1 km². Kazakhstan is ethnically and culturally diverse with 131 nationalities, including Kazakh (63 percent), Russian, Uyghur, Ukrainian, Uzbek, and Tatar. Administratively, Kazakhstan comprises 14 oblasts and 2 cities of republican significance—Almaty and Astana.

2. **The Kazakhstan economy grew rapidly since the year 2000, but has slowed since 2014 due to a sharp devaluation and oil price shock.** The gross domestic product (GDP) growth averaged 8 percent between 2000 and 2013. GDP growth slowed from 5.8 percent in 2013 to 4.1 percent in 2014 and an estimated 1.2 percent in 2015. It is projected to slow further to 0.5 percent in 2016. The economic slowdown is partly due to the devaluation in February 2014 (18 percent) that affected domestic demand and the labor market. The recent fall in oil prices (from US$110 per barrel in June 2014 to about US$35 in February 2016) has led to large terms of trade shock and affected Kazakhstan's oil export earnings.

3. **Kazakhstan has successfully harnessed its oil resources to reduce poverty and boost shared prosperity, but some regional variations persist.** Kazakhstan's poverty rate (defined as income below US$5 a day) has dropped from 54 percent in 2006 to 17.8 percent in 2014, while the middle class increased from 8 percent to 28 percent of the population. Wage income increase has been the largest single contributor to poverty reduction, with real wages doubling between 2003 and 2013. The growth process has been inclusive and benefited low-income groups, as evidenced by a 19 percent increase in household income of the poorest 40 percent of the population over a five-year period (2008–2012) against 15.2 percent for the top 60 percent. Income equality stood at 0.3 in 2014. However, the pace of poverty reduction has differed significantly among oblasts, with Akmola, Aktobe, and Kostanay oblasts having the smallest declines since 2011. Continued low oil prices and the August 2015 tenge adjustment are expected to adversely affect GDP growth, the labor markets, and the poverty reduction trend.

4. **Unemployment has fallen steadily, although self-employment remains high and varies significantly from region to region.** Official figures indicate that unemployment has decreased from 10.4 to 5.0 percent between 2001 and 2015. Jobs growth has occurred in all sectors outside agriculture, but more concentrated in services. Still, 29 percent of the active labor force remains self-employed, a large share of which is delivering earnings barely above poverty level, concentrated in agriculture, which still accounts for 25 percent of all jobs. Self-employment varies significantly from region to region (from 5 percent in Astana to 48 percent in Zhambyl). For the regions relevant to the project, the self-employment rates are 5 percent in Astana, 39 percent in Akmola, 35 percent in Kostanay, 21 percent in Aktobe, and 8 percent in Mangystau. This variation highlights the challenges of formal sector job creation in those regions furthest from the country's growth poles.

5. **The country has made strong strides in policy reforms, but remains highly dependent on natural resources.** Minerals, oil, and natural gas account for about 80 percent of exports and 37 percent of GDP. Economic diversification remains a challenge, although the authorities are pursuing social, economic, and structural reforms to support sustainable diversified growth driven by the private sector. They have adopted a large reform agenda, including regulatory reforms, efforts to improve education and skills, and investing in social services and critical infrastructure to sustain growth. The external environment also remains uncertain. With China, Russia, and Europe representing about two-thirds of Kazakhstan's total external demand, Kazakhstan is vulnerable to a prolonged slowdown in China, an economic contraction in Russia, possible protracted slowdown in western Europe, and continuing global oil glut keeping oil prices low for several years.

6. **The government of Kazakhstan (GOK) is proactive in the face of current economic uncertainties.** It significantly adjusted its 2015 budget based on the price of oil at US$50 per barrel to manage the budget deficit. It adopted a plan to consolidate its nonoil deficit in the medium term and prioritized expenditure to protect the social sector and vulnerable groups. It has also postponed a number of nonpriority expenditures, balancing them off with measures financed under a new economic anticrisis program, 'Nurly Zhol', meant to address the country's longer-term development goals. Nurly Zhol was announced by the Kazakhstan president in November 2014 to plan road and rail transport projects connecting Astana, the capital city, with the east, west, north, and south through rail, air, and road networks. The program expects that priority physical infrastructure and improved connectivity will foster business-driven regional economic integration through enhanced mobility, allowing the setup of distributed production and delivery systems. The Nurly Zhol is expected to generate a significant number of new jobs and incomes through investments such as the proposed project, which is designed based on those principles.

7. **In addition to Nurly Zhol, the GOK signed the Partnership Framework Arrangement (PFA) with participating international financial institutions (IFIs**) (the World Bank, Asian Development Bank [ADB], European Bank for Reconstruction and Development [EBRD], and Islamic Development Bank [IsDB]) in September 2014 to support the GOK's efforts toward sustainable development, economic diversification, and inclusive growth, and launched a programmatic development policy lending (DPL) series with the Bank in 2015. The two pillars of the proposed programmatic operation are aligned with the objectives of securing macroeconomic stability and sustainability and promoting competitiveness of the nonoil economy.

8. **Kazakhstan's development objective of joining the world's top 30 most developed countries by 2050 depends on its ability to sustain balanced and inclusive growth.** Economic prospects depend on a continuation of stability-oriented macroeconomic policies with continued adherence to the rules-driven framework for resource earnings and sustainable financial sector development. Development prospects also depend on the country's ability to diversify its endowments, namely, creating skilled human capital, improving quality of physical capital, and strengthening institutional capital.

9. **As part of its development agenda, the GOK has promoted trade and cooperation agreements with a number of key partners.** Kazakhstan is a member of the Eurasian

Economic Union with Russia, Belarus, Kyrgyz Republic, and Armenia, allowing free transit of goods, services, capital, and labor. The GOK is also expanding collaboration with China and the Organisation for Economic Co-operation and Development and joined the World Trade Organization on November 30, 2015. Further efforts are planned to promote linkages between domestic companies and global value chains.

B. Sectoral and Institutional Context

10. **Kazakhstan's economic and geographic features pose significant transport challenges.** The first challenge is related to Kazakhstan's size and low population density, which makes it costly to upgrade and maintain an integrated national transport infrastructure. Also, harsh continental climate accounts for high susceptibility of transport infrastructures (for example, related to heavy snows and floods; see annex 7 for details) and increases construction and maintenance costs. Kazakhstan still misses important east to west links (see annex 6). Transport costs are estimated to account for 8 to 11 percent of the final cost of goods, which is about double the cost in most industrialized countries.[1]

11. **Despite great potential to connect the growing markets of Southeast Asia and China to Russia and Europe, Kazakhstan ranks only 88th among 160 economies included in the Bank's report 'Connecting to Compete 2014: Trade Logistics in the Global Economy'.** Improving domestic road transit links is critical to Kazakhstan to interact with and benefit from the economic growth of neighboring countries. There are also nonphysical barriers to trade to be addressed, such as inefficiencies at border crossings, unofficial payments, and deficiencies in harmonization of basic transit documents and regulations.

12. **Kazakhstan's transport system mainly relies on roads and rail. There are 97,427 km of roads, 14,000 km of railways, numerous logistics centers, as well as free-trade zones to facilitate production, warehousing, and transportation.** The road and rail networks account for the transportation of 90 percent of total cargo volume. The majority of goods in transit are transported via the rail network (16.3 million tons annually). The road network carries 1.46 million tons of transit goods annually. The main destination countries for transit cargo through Kazakhstan are countries in Central Asia (Uzbekistan - 36 percent, Kyrgyzstan - 19 percent, Tajikistan - 11 percent, and Turkmenistan - 8 percent).

13. **Roads are a key element of the Kazakhstan transport system, providing access to rural areas and essential transit corridors for trade.** The Ministry of Investments and Development (MoID) is responsible for the management of the republican (main) roads. The Committee for Roads (CR) reports to the MoID and is responsible for policy formulation and management and implementation of national policy for the road sector and the interface with the general public. At the implementation level, the recently created KazAvtoZhol National Roads Operator Joint Stock Company (JSC) (KAZ) is responsible for public road sector operational implementation, including day-to-day operations on the main roads. KAZ is represented by departments in each of the 14 oblasts. Much of the road network was constructed during the Soviet era and has deteriorated because of lack of maintenance. Financing for the road sector has

[1] Joint Economic Research Program Logistics Performance Index Report, 2013.

increased over the past decade, including the development of the Western Europe-Western China (WE-WCh) corridor, which has mobilized substantial amounts of IFIs' and own financing, with over US$8 billion as budget. Over 2,000 km out of 2,840 km has been completed since 2009. Still, improved planning, better institutional capacity, and improved network conditions could significantly enhance the overall performance of the road network.

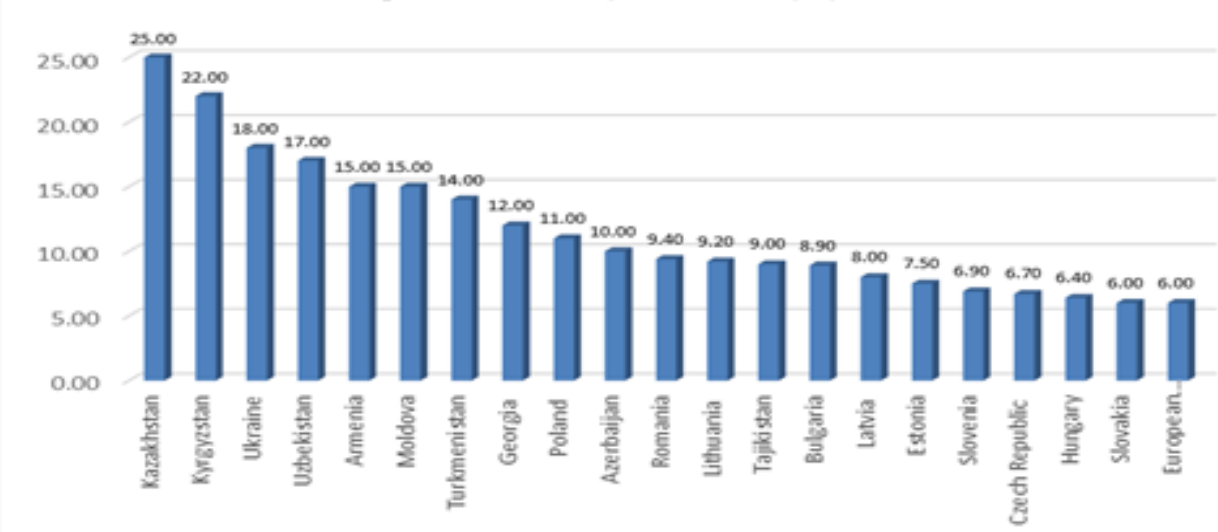
14. **The value of Kazakhstan's road assets was about US$45.3 billion[2] in 2010.** However, 21 percent of republican (managed centrally) and 47 percent of local road network remains in unsatisfactory condition. Extreme weather conditions often cut many communities from the outside world. Institutional inefficiency along with underinvestment also contribute to the depreciation of the road network. A more efficient road asset management system needs to be established as the network grows. The Bank and the GOK are addressing this issue by developing a road asset management system, a tolling system, and quality charters (road maintenance contract) under the ongoing South West Roads Project (SWRP) and East West Roads Project (EWRP). The budget earmarked for roads is increasing sharply under the Nurly Zhol program, doubling between 2011 and 2016, and allocations for routine maintenance have increased slightly. But the allocation to repairs does not increase, which results in major repairs to be carried every 20 years on average instead of the recommended 7 years. The lack of financing for repairs forces the MoID to increase maintenance activities on roads in poor condition. Funding from road user charges is on the increase mainly via the toll road introduced in 2013 and with 7,000 km of toll roads planned for 2020, which could generate an annual revenue of KZT 40 billion, equivalent to the current repair and maintenance budget.

15. **The poor condition of roads is also a contributor to road accidents.** The cost of road crashes in Kazakhstan is estimated between US$2–4 billion per year.[3] About 32,400 persons were killed and over 140,000 persons were injured between 2003 and 2012 in road crashes. The fatality rate for Kazakhstan is about 25 per 100,000 population (Figure 1), which is five times higher than the average fatality rates in western Europe.

Figure 1. Deaths Per 100,000 Population

[2] If all of the republican road network was in new or good condition (requiring routine maintenance only), the total value will amount to KZT 6,680 billion (US$45.3 billion), World Bank Assessment, 2010.

[3] International experience from around the world suggests that the economic losses arising from road accidents (once lost productivity, medical costs, police time, property damage, and so on, are taken into account) are typically 1–2 percent of annual GDP in transition economies such as Kazakhstan. Thus, with an annual GDP in 2014 of over US$200 billion, the minimum annual losses in Kazakhstan were around US$2 billion and could easily be US$4 billion or even higher. Detailed local research will need to be undertaken in Kazakhstan to derive a more exact estimate of the losses to the economy.



Source: World Health Organization, 2013.

16. **To respond to these challenges, the GOK has adopted the State Program for Development and Integration of Transport Infrastructure to 2020 (SPDITI).** Developed with the assistance of the Bank, the SPDITI details the strategy to increase the flow of freight through the country by properly integrating and linking the land, sea, and air transport systems. It also plans for better connectivity between regional cities and towns and the creation of infrastructure centers within regions. The SPDITI builds on the Kazakhstan Program for Regional Development (PRD), a mechanism that predicts spatial development of Kazakhstan up to 2020. The PRD aims to develop regions through the formation of centers of economic growth, 'urban agglomerations,' and 'second-tier cities.' A challenge for the PRD is the development of infrastructure, including better connectivity between oblasts, that is, a better transport system.

17. **The proposed Center West Corridor development is assigned the highest priority by Nurly Zhol as a development and anticrisis operation to provide jobs and stimulate the development of small and medium enterprises (SMEs).** The corridor represents a missing road link between the center and the west (from Astana via Aktobe to Aktau) and within the urban agglomerations and the second-tier cities. The Center West Corridor will provide a main gateway to the west through the Caspian Sea and Caucasus to Europe, and to the east, to the port of Lianyungang on the Pacific Ocean. Kazakhstan has experienced difficulties in increasing transit freight as it primarily depends on the railway connected with Russia and China. The new corridor could strengthen multimodal transport function by enhancing accessibility to the international and main railway lines. Reinforced networks could provide opportunities to increase transit freight and also give the western region centered on Aktau and the northern region centered on Aktobe possibilities to become intermediating trade zones between Russia, the Caucasus area, the Middle East, and Asia. The new corridor will benefit from the railway line recently completed, connecting Kazakhstan with the Islamic Republic of Iran via Turkmenistan. Because of its connection to the Islamic Republic of Iran, Turkmenistan, and Russia, the Aktau international port will increase its potential as an international logistics hub and support the regional development mentioned in the various strategies of the GOK. The new corridor is also expected to contribute to symmetric and balanced development of the western and northern areas and facilitate a trickle-down effect on economic wealth concentrated in Almaty and Astana. The

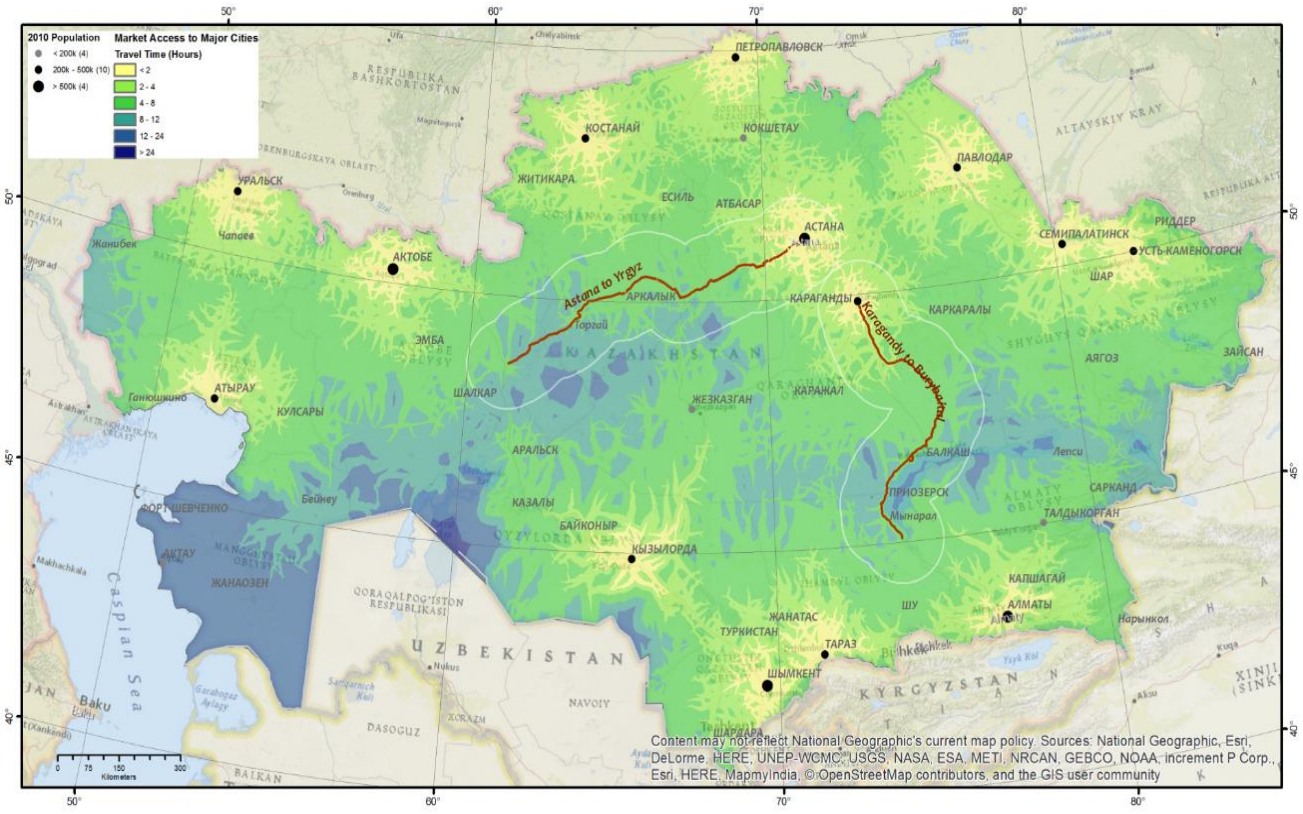
government is adjusting to the new fiscal constrains by prioritizing public expenditures and envisaging possible nonsovereign borrowing by the KAZ. Such strategy is set to be implemented along the Center South Corridor, while the proposed Center West Corridor development project should remain financed through Bank financing under sovereign borrowing.

18. **The proposed project will also allow rural regions to develop economic activity and improve jobs and earnings prospects through increased market access.** These rural regions are heavily reliant on agriculture, with little private sector and waged employment.[4] Improved connectivity offered by the new corridor will provide opportunities for agricultural producers (livestock - beef and dairy), which in turn will create opportunities for off-farm activities. Producers will access new markets, particularly in the high-growth, oil-producing urban areas in the west, which at present have limited access to meat and dairy products from the hinterland.

19. **The investment will unlock the region and create synergies.** As shown in Figure 2, the proposed corridor passes some least-market-accessible regions in the country. With the road construction and sustainable usage (in regard to road safety and proper maintenance), the road will open up the market and unlock the potential for growth. Furthermore, the GOK's vision on the regional development, together with the Bank's intervention, will generate a spill effect. The project will offer a platform for synergies from regional development plans and other sector investments along the corridor.

Figure 2. Market Accessibility in Kazakhstan

[4] The economies of Akmola and Kostanay are dominated by agriculture (36 percent and 38 percent, respectively), along with some limited industry and mining (10 percent and 10 percent, respectively). Moving to the west, the importance of mining increases (13 percent in Aktobe and 24 percent in Mangystau), while the role of agriculture diminishes sharply (14 percent in Aktobe and 1 percent in Mangystau).



C. Higher Level Objectives to which the Project Contributes

20. **The proposed project is of direct relevance to the strategic pillar of the Country Partnership Strategy (CPS) for 2012–2017, namely improving competitiveness and fostering job creation.** The CPS, approved in May 2012, focuses on the government priorities of improving competiveness and fostering job creation; strengthening governance and public services; and ensuring development is environmentally sustainable. To this end, the CPS's main instrument to support the government's program is knowledge activities through programmatic knowledge products and capacity-building products complemented by selective investment projects in strategic high-impact areas. The CPS includes the option of launching DPL to counter external shocks to the Kazakhstani economy. A programmatic DPL series was launched in 2015. The two pillars of the proposed programmatic operation are aligned with the objectives of securing macroeconomic stability and sustainability and promoting competitiveness of the nonoil economy. The proposed road project supports the competitiveness pillar of the CPS and complements the second pillar of the DPL by removing barriers to and reducing the cost of trade and transport for Kazakhstan. The proposed project is also aligned with the Country Development Goal of development of infrastructure connectivity to reduce economic distance (Outcome 7: Building transport connectivity, lowering costs). In addition, the project is also designed to increase climate resilience for the sector and for the country (details in annex 7).

21. **The project is included in the PFA Program signed between the GOK and participating IFIs in September 2014.** The PFA supports the GOK's efforts toward sustainable development, economic diversification, and inclusive growth. The project falls within the

umbrella objectives for 'Attracting Investment into the Economy and Development of Public-Private Partnerships,' and specifically includes the construction of the road from Astana to Shalkar. The ADB is preparing to finance, in parallel to the Bank's project, the rehabilitation of a 299 km long section connecting Aktobe to Makat, including the Mukyr to Kulsary road. The ADB has also financed the reconstruction of the 470 km Aktau-Beineu road section, as part of a Center West Corridor multitranche financing facility totaling US$800 million. The IsDB is preparing to finance, in parallel to the Bank's project, the rehabilitation of a 149 km long section connecting Aktobe to Makat and a 277 km long section of the road connecting Atyrau with the border of Russia in Astrakhan.

22. **The proposed project is a continuation of the ongoing cooperation with the GOK under the WE-WCh corridor and with Central Asian countries as described in the Transport and Trade Facilitation Strategy and Action Plan for 2008–2017 endorsed by the Central Asia Regional Economic Cooperation (CAREC).** The Bank finances the reconstruction of more than 1,500 km out of the 2,840 km WE-WCh corridor linking Europe and Russia to China through Kazakhstan.

23. **The proposed project aligns with the Bank's twin goals.** The project will serve the less developed regions of Kazakhstan, which suffer significant accessibility constraints and insufficient market potential and social service supply. The alignment reaches a population of 318,000 inhabitants with an extended area of influence over four oblasts (Akmola, Aktobe, Kostanay, and Mangistau) home to 3 million inhabitants. The level of poverty in the four oblasts is at 16 percent, which is above average. Limited access to markets (for example, the closest railway station to Amangeldy is 400 km away and the closest petrol station to Turgay is 175 km away) constitutes a major constraint to economic and social development, limiting access to health, education, and employment. The project is expected to reduce the income gaps with the richer oblasts of the country. Ultimately, all of these benefits should be observable in the form of benefits to individual households, particularly for the poor and the bottom 40 percent of the population.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

24. **The Project Development Objectives (PDOs)** are to improve the transport connectivity within the regions along the Kazakhstan Center West Corridor and strengthen the capacity of selected agencies[5] for the effective implementation of the corridor development, and road asset preservation policies.

25. **Key Indicators for the project are as follows (see annex 1 for Results Framework):**

- Reduction of travel time
- Market accessibility index, which measures accessibility to major cities and towns from an origin

[5] Local governments (*akimats*), CAP, and CR

- Corridor Development Action Plan (Plan) developed and its selected actions implemented

- Road Maintenance Agreements for the road operations and maintenance (O&M) developed

Project Beneficiaries

26. **The main groups of beneficiaries are road users, the communities along the alignment, and businesses associated with road construction and maintenance.** The road users will benefit from improved connectivity (particularly from small underserved villages to second-tier towns and agglomeration centers), better road condition, and reduced travel time; and from better services provided along the proposed corridor including rest areas, improved sanitary conditions, information, emergency response, and others. At the national level, road users will also benefit from the formulation and implementation of the national Road Safety Program (RSP). The communities along the entire corridor (318,000 people in the immediate area of influence; about 3 million together in its four oblasts) and the citizens in the four oblasts will benefit from better access to basic services, markets, growth centers, and job opportunities. The agricultural sector is expected to be an important beneficiary of the corridor: farmers will revisit their planning and business development approaches because of reduced travel cost and time, access to new markets, and access to cheaper inputs and new technologies. Finally, in addition to employment opportunities created during construction and later operation of the highway, the project will support provision of basic training on accounting, small business administration, and marketing skills to empower local communities to contribute to the new economy once the road is operational.

27. **Recent study highlights the impact of road investments on GDP increase (1.5 percent estimate over a medium-term horizon and 4.2 percent over a long-term horizon in the case of a similar corridor in Georgia[6]).** According to the study, corridor connectivity increases household consumption, the expansion of domestic production, and, in the long term, imports. Government consumption also increases but at a lower rate. Rural households gain more than urban households, in line with a priori expectations, as rural households' income is affected more by transportation costs associated with longer distances. The project intends to assist the MoID, local authorities, and communities to use the new road to enable economic development along the corridor, fostering agriculture, tourism, services, and education. Another study by the Bank in India highlights how decreasing transportation obstacles to production benefit the regions. The Centre West Corridor is also expected to substantially help reduce some cost drivers for sectors that are key in the local economy, such as mining and oil, metallurgy, and agriculture.

[6] Georgia Assessing Economy Wide Indirect Impacts of East-West Highway Investments through CGE Modeling August 2015 Report No: ACS15092.

III. PROJECT DESCRIPTION

A. Project Components

28. **The proposed Center West Regional Development Corridor Project (CWP) is part of the transit corridor 'Baku-Astrakhan-Atyrau-Aktau-Turkmenistan border'**, which connects Kazakhstan with Azerbaijan and Europe in the west, with Russia in the north, through the Islamic Republic of Iran with countries of the Persian Gulf, and Uzbekistan and Turkmenistan in the south. An estimated 2,000 km of the Center West Corridor will connect Astana with Akmola, Kostanai, Aktobe, Atyrau, and Mangistau oblasts, thus linking two of four urban agglomerations and two second-tier towns identified in the PRD. A pre-feasibility study (annex 6) launched at the initiative of the Bank in 2014 fostered a detailed comparison of the benefits and weaknesses of various alternatives. Based on it, a formal feasibility study was developed and extensive consultations with communities along the corridor took place in 2015. As a result of citizen engagement, the alignment and characteristics of the road were adjusted to the needs of local communities.

29. **The project will finance construction/rehabilitation of about a 1,014 km section on the eastern end of the Center West Corridor.** The alignment was selected based on the pre-feasibility and feasibility studies and citizen engagement for its potential impact on regional development—a core objective of the Nurly Zhol. The new alignment from Astana through Zhanteke, Arkalyk, Turgay, Yrgyz, Shalkar, and further west to Aktobe and Aktau connects 86 settlements, with a population of 318,000. Once constructed, the road will become part of the main (republican roads) network. The construction will be mainly a two-lane standard (a well-grounded consideration of standards and costs) and expand to four lanes on the first 98 km from Astana to Zhanteke because of the 7,000 vehicles per day at opening and the potential for tourism development of the Zhanteke region and the Ramsar wetland around the lake Tengiz of Korghalzhyn. Tolling may be considered along the four-lane section close to Astana and consistent with a broader tolling plan currently envisaged by the GOK.

30. **The project will consist of the following five components:**

31. **Component 1: Infrastructure Development and Supervision (US$1,088.08 million/US$962.17 million Bank financing).** The component will be implemented by the CR of the MoID. It will finance civil works on about 1,014 km of road sections between Astana and Shalkar and consulting services for supervision of civil works. Land acquisition and road design costs will be covered from the GOK, financed separately from the GOK budget. The CR and the Bank have already successfully implemented US$3 billion civil works over the last five years in Kazakhstan. The cooperation has achieved development goals and has been successful—building a resilient road network of good quality at a reasonable cost (US$4 million on average for four-lane upgrade and US$2 million on average for two-lane upgrade). The good track record allows more ambitious plans for the civil works under the new project, including (a) vocational training for up to 5,000 staff during the construction; (b) investment in information sharing through Intelligent Transportation Systems (ITS) equipment and the possibility for the MoID to offer e-government service to local population; (c) short-distance access roads to provide access to the corridor for the nearby settlements; (d)construction of maintenance facilities (depots), bus stops, trading plots and service areas, parking areas, emergency shelters, and so on and provision of

ITS for the corridor, including tolling systems, weigh-in-motion for vehicle detection, and weight measurement, as well as variable message.

32. **Component 2: Corridor Development (US$5.78 million/US$5.11 million Bank financing).** This component is at the core of the MoID strategy to foster regional economic development. The component will be monitored by the relative departments of the MoID with the assistance from the CR, KAZ, local authorities (*akimats*), and consultants hired under the project. The MoID will establish an Inter-Agency Working Group (IWG) chaired by the vice minister of Investments and Development to take decisions and coordinate implementation of respective multisectoral actions across different GOK agencies at the central and oblast levels. The MoID will also provide general supervision of the project to ensure that it responds to the needs of local and business communities and promote regional development. The component will support the preparation of the Plan and implementation of key priority activities from the Plan. The objective is to customize the corridor to local advantage and to ensure that disadvantaged, sparsely populated, and remote areas will be provided access to basic services and new markets. Local development plans and existing strengths, resources, as well as services in demand were assessed in consultation with local communities. The assessment identified agriculture, tourism, services, and education as strategic areas of focus. The Plan will support activities aimed at unlocking the potential of industries identified and capacity building for local communities, such as the development of service areas for retail and sales of local food and crafts, tourist information, transport services, pharmacies, milk collection points from local farmers, support to livestock bazaars, and so on. Component 2 may also be used to finance consultants to support the KAZ and the Department of Tourism at the MoID with the implementation of the corridor development activities when necessary.

33. **Component 3: Operation and Maintenance (US$9.09 million/US$8.04 million Bank financing).** This component will allow the MoID to implement the sector strategy designed with the assistance of the Bank during the preparation of the road sector reform in 2012–2013. The project will finance facilities and equipment for O&M. The location of facilities is identified by the feasibility study, as well as the type of equipment for routine maintenance. Construction of maintenance facilities (depots) is envisaged under financing of Component 1. The new units are expected to become pilots in the implementation of the recommendations under the Quality Charters component of the ongoing EWRP. The efficiency of the O&M process will benefit from functional separation of 'client-supplier' roles between the CR, KAZ, and road maintenance service provider. The KAZ will be responsible for determining the O&M interventions required and the road maintenance service provider will be responsible for implementing the various activities in the field. This relationship will be formalized in the form of a 'Road Maintenance Agreement' between the parties on terms acceptable to the Bank and CR. The component will finance equipment necessary for the maintenance of the roads along the corridor, such as graders, bulldozers, snow blowers, tractors, and others.

34. **Component 4: Road Safety (US$2.88 million/US$2.55 million Bank financing).** The component will be implemented by the MoID together with the Committee of Administrative Police of the Ministry of Interior (CAP)—Kazakhstan's lead road safety agency with assistance from local consultants hired under the project. The objective of this component is to help the Kazakhstani authorities to develop the RSP, strengthen institutional capacity in relation to the RSP implementation, and increase road safety awareness. The activities under this component

will build on the road safety activities carried out under the SWRP and help Kazakhstan achieve road safety goals under the United Nations Decade of Action 2011–2020. The component will finance three activities as follows: (a) design of the RSP; (b) comprehensive review of road design and safety norms and standards according to international best practice (possible pilot using International Road Assement Program); and (c) road safety communication, awareness, and education of road users and the society at large.

35. **Component 5: Project Management (US$5.37 million/with no Bank financing).** The component will be covered from the GOK budget. The CR identified the KAZ as a project management consultant (PMC) for the CWP and other road projects to be financed by other IFIs and the GOK budget. The MoID will retain overall responsibility for the project implementation and the KAZ is expected to assist the CR on day-to-day operations managing project activities, such as supervision of social, environmental, and fiduciary safeguards, provision of logistical support, monitoring and evaluation (M&E), interagency coordination, and so on. The terms of reference and PMC staffing will be agreed with the Bank. The tentative staffing of the PMC includes (a) specialists for procurement, financial management (FM), social and environmental safeguards, and M&E; (b) a small technical team of subject-matter experts; and (c) administrative support (for example, assistants and office manager).

B. Project Financing

Lending Instrument

36. The estimated total project cost is US$1,111.20 million. The IBRD share of the project cost (88%, except for Component 5) will be financed through a US$977.86 million Investment Project Financing. The borrower will be the Republic of Kazakhstan represented by the Ministry of Finance.

Project Cost and Financing

Table 1. Project Finance Summary

Project Components	Project cost (US$, millions)	IBRD Financing (US$, millions)	Borrower Financing (US$, millions)	% IBRD Financing
Component 1: Infrastructure Development and Supervision	1,088.08	962.17	125.91	88
Component 2: Corridor Development	5.78	5.11	0.67	88
Component 3: Operation and Maintenance	9.09	8.04	1.05	88
Component 4: Road Safety	2.88	2.55	0.33	88
Component 5: Project Management	5.37	0	5.37	0
Total Costs Contingencies (*)	1,111.20	977.86	133.34	
Total Project Costs Front-End Fees **Commitment Fees** **Total Financing Required**				

C. Lessons Learned and Reflected in the Project Design

37. **Implementation of the EWRP and SWRP has provided valuable experience to the GOK.** Cooperation between the GOK and IFIs has been fruitful with regard to preparation of ongoing projects (for example, a common set of safeguards documentation and similar procurement methods) and implementation arrangements (for example, common PMCs). Also, the WE-WCh corridor, as a sum of highway tranches connecting agglomerations and second-tier cities and rural towns with each other, had a large impact on the living standards of the population by enhancing access to basic services and providing labor and commercial opportunities (more than 30,000 jobs created). In this sense, the proposed CWP, viewed from a local perspective, can be designed to support regional convergence and diminish inequalities among oblasts.

38. **The dialogue between the Bank and the GOK is active in many sectors related to regional development.** This project aims at regional development. The project is expected to bring opportunities to remote regions in four of the poorest oblasts of the country. The preparation of the project has taken into consideration lessons learned as well as benefits from past and ongoing Bank-financed projects and reimbursable advisory services (RAS).[7] The aim is to establish synergies with a series of activities financed by the Bank and try to complement the GOK's efforts in supporting the SMEs, creating jobs, building capacity of local officials in preparation of development plans in agriculture and tourism sectors, improving the life skills of rural people, and other such themes.

39. **The project can set a platform to complement the efforts of the Bank-financed Skills and Jobs Project and Youth Corps Project.** The Skills and Jobs Project aims to improve employment outcomes and skills of unemployed and unproductively self-employed and current employees in need of training. Road construction workers will benefit from technical and socioemotional skills development programs. The 'higher-level skilled workers' employed by construction-related firms may benefit from language, management, and socioemotional skills development. Information about qualified training providers identified under the Skills and Jobs Project could be shared to enhance the quality of skills development programs offered to road construction or higher-level skilled workers. The Youth Corps Project's objective is to promote young people's (18–29 years old) community engagement and life skills. Related to the CWP, for young road construction workers, or young people residing along the corridors, the call for proposals to participate in community engagement programs under the Youth Corps Project could be shared and proposal writing support provided. In consultation with the Ministry of Education and Science, the geographic focus of the Youth Corps Project could be aligned with the Center West Corridor.

40. **Implementation of institutional strengthening has been slow under the ongoing SWRP and EWRP.** The counterparts acknowledge that they have been overwhelmed by the simultaneous preparation of large civil works—worth US$3.3 billion—under the SWRP and

[7] The main contributions come from the following activities: Skills and Jobs Project, Youth Corps Project, Forestry and Agricultural Competiveness Projects, Establishment of Policy and Institutional Roadmap For Urban Agglomerations in Aktobe and Shymkent RAS, and Towards Development of the Jobs Strategy RAS.

EWRP that were given a higher priority over other activities. It is expected that the CWP will not experience the same difficulties because the preparation and implementation of the civil works is now well managed by experienced staff at the CR and KAZ. Also, institutional strengthening has gained momentum under the SWRP and EWRP. It is therefore expected that the new activities financed by the CWP under Components 2, 3, and 4 will require far less effort to get started and managed.

41. **Thanks to the ongoing works under the SWRP and EWRP, the CR and KAZ are familiar with the implementation of the civil works.** In particular, the procurement of civil works under the SWRP and EWRP have been successful and led to cost efficiency. It is now possible to encourage the local industry to take the lead in the new rounds of civil works to be financed under the project. Such increased participation by the local industry is being tested under the ongoing SWRP and EWRP restructurings, where prequalification requirements have been adjusted to allow the local industry to bid as part of a joint venture or even as lead partners. The same methodology will be used to prepare a prequalification document under the CWP.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

42. **Project implementing agency.** The MoID will operate as the general administrator of budget financing for project implementation and the ministry responsible for the project. The CR of the MoID will be the project implementating agency. The CR will be responsible for project budgeting, project management and implementation, and tracking, monitoring, and reporting project results and impact. The MoID will nominate the deputy chairman of the CR as the project director (same arrangement as for the ongoing projects).

43. **PMC.** The KAZ, a national roads operator, will act as the PMC to provide support to the CR during project implementation. The CR will hire the KAZ under a separate budget line (not out of the loan proceeds) from the GOK budget. Loan proceeds under Component 2 may be used to finance consultants to support the KAZ when necessary. The PMC will help the CR with procurement, FM, accounting, social and environmental safeguards, disbursement, administrative support, M&E, and other activities. The PMC staff will include (a) specialists for procurement, FM, accounting, social and environmental safeguards (with designated staff with presence in the field/project catchment area), and M&E; (b) a technical team of subject-matter experts; and (c) administrative support. The Bank team finalized its legal and fiduciary assessment of the capacity of the KAZ in February 2014, stating that the KAZ has adequate capacity to provide support to the CR on project implementation.

44. **IWG.** In view of the wide range of activities that cut across various areas under the responsibility of several agencies, an IWG will be created. The vice minister of Investments and Development will chair the IWG, which is composed of representatives of participating agencies at the level of deputy Akims and heads of the respective agencies. The IWG is expected to meet at least twice a year to assess and report progress in project implementation, provide a platform for discussion and resolution of issues, and develop proposals on improving project outcome. The IWG will provide general oversight, guidance, and strategic supervision of the project, as

well as a platform for consultation with other stakeholders to address the needs of local and business communities and promote regional development.

45. **Participating agencies.** The agencies participating in the project are any or all of, but not limited to, the following: (a) the MoID and its subdivisions: the CR, Department of Tourism, Department of Transit and Logistics, and Kazakhstan Institute of Industry Development; (b) the Ministry of National Economy and its subdivisions: the Department for Regional Development; (c) the Ministry of Internal Affairs and its divisions: the CAP; (d) the Ministry of Agriculture and its respective livestock and dairy arms; (e) JSC National Company Kazakhstan Temir Zholy (KTZ, the railway company) and its respective transport and logistics arms; and (f) Akimats of relevant oblasts.

B. Results Monitoring and Evaluation

46. **The MoID is experienced in monitoring and evaluating projects.** The current arrangements under the SWRP and EWRP will be extended to this project. The Bank team and CR will continue processing annual reviews of the project instead of a midterm review. This pattern being used in the SWRP and EWRP has proven successful for large projects because it detects and addresses early any variation from the original objectives set for the project. In addition, the project will require monitoring regional development, market accessibility index, and impacts on jobs.

C. Sustainability

47. **The project is designed to minimize the depreciation of assets.** The new road will benefit from the implementation of an O&M strategy under Component 3. The responsibilities of the MoID, CR, KAZ, and maintenance service providers are embedded in the implementation arrangements. The project will finance the initial setup of the road maintenance arrangement on terms acceptable to the Bank and CR, and rely on the MoID to finance those units later on an annual basis.

48. **The project will consider adaptation and mitigation measures to climate change. In their 'intended nationally determined contribution' released ahead of the 21st Conference of the Parties in Paris in December 2015, the GOK has committed to develop a sustainable transport system.** Under this project, as a first step, the GOK has taken into account climate-resilient design standards. The engineers have considered specific measures for pavement construction to be resilient to the extreme gradient of temperature between winter and summer. They have designed snow/wind barriers and raised the road platform to cope with snow and floods. With regard to climate change, the project will help keep the asset at a defined level of service and provide all-season roads including during winter. Supporting activities will also be envisaged to make sure that in case of emergencies, including related to climate change and climate variability, response can be quick and service can be reinstated promptly.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

Risk Category	Rating
1. Political and Governance	Substantial
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Substantial
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Substantial
6. Fiduciary	Moderate
7. Environment and Social	Substantial
8. Stakeholders	Moderate
OVERALL	Substantial

49. **The risk associated with political and governance and macroeconomics are rated as Substantial, which potentially affects sector strategies and policies; therefore, they are also rated as Substantial.** The external environment remains uncertain. Kazakhstan is vulnerable to a prolonged slowdown in China, an economic contraction in Russia, possible protracted slowdown in western Europe, and possible continuing global oil glut keeping oil prices low for several years. The depreciation of the local currency also imposes a big challenge on the country.

50. **The number of participating agencies and implementation agency capacity generates substantial implementation risks.** Design and implementation risks exponentially increase if several agencies fall within the ambit of a single project. Changes to senior management and key technical staff, ineffective interagency coordination, and delays in procurement could also negatively affect implementation and the sustainability of project results and impact.

51. **The risks associated with environment and social are rated Substantial.** The risks associated with safeguards could have been rated moderate as (a) the areas adjacent to the construction will not be disturbed by the construction and the impact of the new construction and its associated activities will remain minimal; (b) counterparts have gained experience in managing Environmental Management Plans (EMPs) and related activities; and (iii) reviews by Bank staff of the ongoing activities under the SWRP and EWRP have not raised major concerns. However, suggested road and associated construction activities might pass through the migration routes of Saiga tatarica, an endangered antelope species. In addition, the increased attention to the social impacts of the road corridor in Kazakhstan, particularly from the media and some criticism from nongovernmental organizations (NGOs), could expand to the new project. Therefore, the risks associated with environment and social are rated Substantial.

52. **The CR together with the CAP will implement Component 4 of the project.** Component 4 finances activities that are intended to promote road safety, namely (a) developing an RSP and related action plan and implementing select key priority areas involving only nonenforcement-related activities; (b) carrying out a comprehensive review of road design and safety standards; and (c) carrying out a road safety communication, awareness, and education campaign to the road users. As the police/law enforcement is a particularly sensitive sector, the use of the CAP to carry out Component 4 poses certain risks for the project, including the risk of

political interference, or the perception of political interference, in-country through the misuse, or perceived misuse, of authority. For the reasons discussed below, the risks are assessed to be low, and certain safeguard measures—to be incorporated as part of the project—will help to minimize risks. First, the CAP is Kazakhstan's officially designated lead road safety agency, and as such, the work of the CAP has clear country ownership, thereby minimizing the risk of partisan politics being involved in the carrying out of the project activities. Second, the project will involve only technical assistance studies and advisory work with the following implementation and will not involve any direct law enforcement activities. Third, with respect to the project activities on developing the country's RSP, (a) the strategy design work will follow international best practices on designing road safety policies, including considerations for public involvement and oversight measures and (b) the road safety awareness campaign will be implemented based on the mass media communication means. Moreover, the project implementation arrangements provide for the IWG's oversight on the overall project implementation. On the basis of these factors, the reputational risks of having the CAP carry out the activities under Component 4 are considered to be low.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

53. **Significant positive economic impacts will result from the construction of the Center West Corridor.** The Economic analysis considered the road section to be financed by the Bank, totaling about 1,014 km from Astana to the west connecting Zhanteke, Arkalyk, Turgai, Yrgyz, and up to the junction with the WE-WCh corridor and further to Shalkar. The rehabilitation and new construction of these sections will spur generation of local and regional trips because of improved travel conditions and enhanced connectivity. Economic analysis also takes into account generated trips between settlements along the routes and major economic centers, as well as diversion of long-distance and international traffic from the existing Astana-Atbasar-Kostanay-Karabutak-Aktobe road.

54. **The economic evaluation (details in annex 5) considered an evaluation period of 25 years and discount rates of both 5 and 12 percent.** The economic evaluation was conducted for each road section and for the project as a whole. The evaluation includes the costs of carbon dioxide (CO_2) emissions. Over the valuation period, the total CO_2 emissions will increase by 104 percent (from 6,566,697 tons without the project to 13,415,165 tons with the project), where normal traffic accounts for 22 percent because of the increase in vehicle speeds and fuel consumption, and the generated and induced traffic accounts for the remaining 82 percent. The overall economic internal rate of return (EIRR) of the project is 15.6 percent and the net present value (NPV) is US$1,054 million at a discount rate of 5 percent.

55. **In addition to the cost and benefit analysis, 'agglomeration effects' were quantified to capture the wider economic benefits brought by the increased productivity and the improvements in competitiveness and innovation.** Transport links affect a wide range of economic decisions with a strong influence on the location of a wide range of economic activities. Improving and upgrading transport corridors have a strong influence on economic development when they are combined with a broader regional development strategy, as is currently the case in Kazakhstan. Overall, the inclusion of agglomeration benefits slightly

increases the project EIRR to 16.1 percent and the NPV to US$1,124 million (discounted at 5 percent to 2015; see annex 5).

56. **Public sector financing and Bank value added.** Public sector financing is the appropriate vehicle for financing the project, as the construction costs cannot be recovered through tolls because of the low levels of traffic. Public investment is also desirable because a range of issues needs to be implemented through government actions, such as road safety policy and regional development agenda. The Bank is well positioned to support Kazakhstan in corridor development, sustainability of road maintenance, and national road safety policies. The Bank's international experience and expertise in the road sector can help ensure efficient procurement processes, sound social and environmental management practice, the application of modern and resilient technical standards, and the execution of work with proper quality control. In addition, the Bank can help leverage other programs related to regional development. The project will offer a platform for synergies related to regional development and other investments along the corridor.

B. Technical

57. **The feasibility study and the detailed design are set to cover all aspects of the project design.** The feasibility study incorporates identified activities such as road safety, road O&M, and the impact on regional development. The feasibility study developers met with local communities involved. As a result of those consultations, the alignment was modified to meet the needs of locals, who opted for the road to be designed closer to them. Likewise, the Environmental and Social Impact Assessment (ESIA) developers organized a survey (with 450 questionnaires) while in the field. Activities that are new to counterparts (for example, regional development, job creation, and tourism) will benefit from previous and ongoing engagement under other Bank-financed projects and RAS (for example, Skills and Jobs Project; Urban Agglomerations in Aktobe and Shymkent study; and Towards Development of the Jobs Strategy study). Detailed designs of civil works will consider appropriate technical and engineering solutions related to ground conditions, pavement, safety measures, bridges, and concrete structures to enhance quality and resilience of proposed road investments. The Bank team will support the GOK counterparts to carry out technical review of detailed designs to improve the quality and resilience of investments.

58. **Preparation of safeguard instruments has been on the critical path of the project.** The CR, aware of the risks, deployed a firm to collect the data and prepare the reports (see Social and Environment paragraphs). The first set of reports has been made available by the end of August 2015 after consultants have deployed their staff in the regions for field surveys and public consultations. The final version of the mandatory safeguard documents—ESIA and Resettlement Policy Framework (RPF)—was approved by the Bank and disclosed on September 29, 2015.

C. Financial Management

59. **The proposed project implementing agency (CR) and the PMC have both overall satisfactory FM arrangements.** The CR is experienced in implementing Bank-financed projects and is knowledgeable of the Bank FM and disbursement requirements. The proposed project will

rely on arrangements established by the CR for existing projects, with a number of capacity-building actions, including (a) updating the existing Project Operation Manual (POM) documenting FM arrangements for the new project; (b) contracting a dedicated FM consultant for the project; and (c) updating the existing automated accounting software to capture the new arrangements. The CR will maintain records and will ensure appropriate accounting and documentation for the project funds. Unaudited interim financial reports (IFRs) will be prepared quarterly and will be submitted to the Bank no later than 45 days after the end of each calendar quarter. The formats of the IFRs will be agreed upon with the CR during negotiations. The project accounts will be subject to independent audit on an annual basis. The project audit report will be made publicly available as per the Access to Information policy of the Bank.

D. Procurement

60. **Project procurement will be undertaken in accordance with Bank Procurement Guidelines.** Procurement will be carried out in accordance with Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers, dated January 2011; Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers, dated January 2011; and the provisions of the Loan Agreement. The October 15, 2006 World Bank Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credit and Grants (revised January 2011) will also apply.

61. **The overall procurement risk for the project is rated Moderate.** The risk rating is based on experience from past and ongoing Bank-financed projects in Kazakhstan, the general public procurement environment, and the current capacity of the MoID and CR in administering procurement. The Bank's procurement staff based in Kazakhstan will provide hands-on advice and assistance. Advertising will be carried out for project procurement packages. A procurement plan covering the initial 18 months of project implementation has been prepared by the MoID. Detailed procurement arrangements are provided in annex 3.

E. Social (including Safeguards)

62. **The project's social impacts are expected to be largely positive.** The project is expected to have a positive impact on the local population and local businesses. Improved connectivity will facilitate access to jobs and services and stimulate trade. Local communities will benefit from faster and cheaper access to health facilities and other social infrastructure. A number of key rural settlements along the road alignment will also benefit from local market development, giving impetus for agricultural productivity and business activity, which will lead to better trading conditions for both local farmers and consumers. The likely centers of connectivity will be Arkalyk, Turgay, Akshiganak, Yrgyz, and Shalkar settlements.

63. **The project triggers the Bank's OP 4.12 - Involuntary Resettlement.** The policy is triggered because of anticipated land acquisition and resettlement activities primarily related to construction works associated with new construction and upgrade to four lanes on the eastern portion of the alignment. Additional impacts are anticipated for rehabilitation works, temporary land acquisition, and limited access to small businesses during road rehabilitation and construction. The route passes primarily through vast livestock pasture lands. There are also

some agriculture lands and a limited number of kiosks and businesses in the vicinity of the existing road. A green field section of the route (about 220 km) will connect Arkalyk and Astana through scattered wetlands and agricultural lands. Relocation of people is expected to be minimal to none, though the precise impacts can only be determined once the detailed design of each section has been completed and the center line for each section is pegged.

64. **The initial feasibility study reviewed three broad options suggesting the optimal connectivity via the four cities of Astana, Arkalyk, Torgai, and Irgiz-Shalkar-Kandyagash and spanning three oblasts (regions) of Kazakhstan**. Within this broad zone of impact, the precise siting for the alignment requires additional studies to determine various options for detailed alignment of the road location going via nine rayons (districts) and spanning 15 medium-size villages and multiple smaller settlements. As the project will be carried out in a sequential manner, the subsequent studies and development of the detailed design are expected to follow consultations to solicit feedback on client-focused road design also in a sequential manner, taking into consideration interchanges and bypasses around settlements; alternative, more optimal connections; and avoidance of resettlement whenever technically possible.

65. **As part of the borrower's internal requirements, the borrower's assessment and approval of the initial feasibility study were required before the borrower could proceed with its decisions (a) to proceed with the loan for this project and (b) to carry out the additional studies and detailed designs necessary to determine the precise corridor alignment and thus the precise impacts**. In view of these considerations, the borrower prepared an RPF and will prepare, as required, site-specific Resettlement Action Plans (RAPs) for each section of the corridor as the center line is pegged once the detailed designs are available, so that the baseline survey and cadastral works can be carried out to determine appropriate compensation measures. The RPF was prepared, publicly consulted on, and disclosed by the borrower before appraisal. Public consultations took place in Aktobe, Kostanay, and Akmola oblasts to solicit feedback on project design and safeguards instruments. The RAPs will be prepared sequentially for different road sections, and works may proceed on some sections while other RAPs will still be prepared for other sections simultaneously. For any given section, and in accordance with the RPF, the RAPs should be prepared, disclosed, and fully implemented by the borrower before the works can commence.

66. **The project integrates lessons from ongoing land acquisition activities.** Drawing on the experience implementing ongoing road sector projects, the design and the implementation arrangements reflect strengthened efforts to ensure (a) operationalization and integration of grievance redress mechanism; (b) development of plans for land acquisition implementation; and (c) development of a project's stakeholder engagement action plan. Citizen engagement activities of the project are reflected in the stakeholder engagement action plan and embedded in the project design. The multistakeholder engagement through government and nongovernmental entities and local communities, road safety public awareness activities, and consultations are part of the project. As part of the stakeholder engagement action plan, annual beneficiary surveys will be conducted to assess stakeholders' perceptions of improvements in the access to markets and services. Based on collected feedback, additional measures aimed at the facilitation of access would be discussed with the client and incorporated in project design. Citizens will be informed accordingly through regular consultations

67. **The gender impacts of the project.** The CR conducted a social impact analysis focusing on gender-disaggregated impacts. The survey was conducted in 450 households with gender-disaggregated interviews in Aktobe, Akmola, and Kostanay oblasts. The preliminary data indicates that more than half of the households benefiting from the project are predominantly headed by females. The number one benefit stated by both male and female respondents is the benefit of improved road connectivity. The majority of the female respondents rated road safety and accessibility as a high priority. The other priorities for women are the shorter access to the places of employment and access to educational institutions. Not surprisingly, transport of goods to support SMEs in the zone of impact is the primary concern of male respondents, who are more frequently employed in the private sector, compared to the female residents. The project's road safety and communication campaign will need to take into account gender aspects among various road user preferences, particularly around safe crossings, safety, bus routings, and bus stop accessibility.

F. Environment (including Safeguards)

68. **Given its magnitude, the project is assigned environmental Category A.** This classification is substantiated by potential physical environmental and social impacts associated with the upgrade of the existing road to a Category II road, and also green field construction approximately 450 km long. This project is currently at the stage of feasibility study and detailed design and it has not been subject to site-specific Environmental Impact Assessment yet. The client has prepared an ESIA that highlights baseline environmental data, potential impacts, and mitigation measures to be implemented by the contractors during the works. The ESIA contains a corridor-level Environmental and Social Management Framework, which should be followed during the detailed design and preparation of site-specific EMPs. Site-specific EMPs will be prepared by the client during the project implementation in accordance with the ESIA and Environmental and Social Management Framework, and approved by the Bank, describing environmental mitigation, monitoring, and institutional measures for any of the activities financed under the project.

69. **The project finances a large linear infrastructure with significant spatial extension; visible impact on landscape, biosphere, and land use patterns; and dependence of its impacts on topography, climate, natural conditions, and anthropogenic activity.** The impacts are expected to be similar to those under the ongoing EWRP and SWRP and broadly include operation of borrow pits, air pollution and noise from construction machinery, stone crushing and concrete plants, soil disturbance during earthworks, and potential impact on surface water networks. These environmental impacts can be mitigated by good construction and general housekeeping practices.

70. **The project is not expected to have a negative impact on established protected areas.** The alignment goes through Akmola, Kostanay, and Aktobe regions and 25 km away from the Kurgaldzhyn State Nature Reserve, located in the Kurgaldzhin District, Akmola region. Altyn Dala, a nature reserve located in the Kostanayregion, is 75–80 km away from the alignment in Amangeldy and 50–60 km in the Zhangeldinskiy District. About 90 km of the alignment will pass at a distance of 40–50 km from the territory of the Yrgyz-Turgay State Nature Reserve.

71. As advised by the Association for the Conservation of Biodiversity of Kazakhstan, a partner of the International Union for Conservation of Nature, the project location passes through the summer habitat range and migration routes of Saiga tatarica, a critically endangered species of antelope. Therefore, OP 4.04 - Natural Habitats is triggered for the project. Specific areas with high concentrations of Saiga and their migration routes will be surveyed. Saiga conservation experts suggested that properly designed crossing points are considered to be an acceptable mitigation measure to enable Saiga migration. Specific locations for such crossings (if needed) will be determined in the preparation of site-specific EMPs. The client and their contractors will establish collaboration with environmental organizations that perform Saiga monitoring, which will become an important part of preparation and implementation of site-specific EMPs.

72. Two sets of consultations were undertaken during the preparation of the project. The first round of public consultations was carried out from June 9–12, 2015 and on June 29, 2015. Public consultations gave the opportunity to local residents and other project stakeholders to get acquainted with the project and to discuss environmental and social aspects, and to provide comments to be included in the ESIA and RPF. The draft ESIA was disclosed in the InfoShop (in English) and locally (in Russian) by the client on September 29, 2015. The second round of public consultations was organized on the draft ESIA on November 9–11 for local communities along the alignment (Zhanteke, Egyndykol, Sochinskoye, Arkalyk, Amangeldy, Torgay, Yrgyz, and Shalkar)**.**

G. Other Safeguards Policies Triggered

73. The inventory of known physical cultural resources conducted in the project area has not revealed physical cultural resource objects that may be potentially affected by the project. However, the OP/BP 4.11 - Physical Cultural Resources should be triggered because of the presence in the project area of so-called Turgay geoglyphs—unique and previously unstudied large-scale earthworks in the Turgay region of northern Kazakhstan. While Turgay geoglyphs have not been designated a status of historical or cultural monuments to be protected according to legislation of Kazakhstan, the client deems appropriate to take into account the sites with geoglyphs in project design and proactively ensure protection and support promotion of geoglyphs as cultural heritage and potential tourism attraction. In case there is a threat of damage to geoglyphs, re-routing of the alignment will be done at design stage. If re-routing is not possible, a Site Management Plan will be prepared as part of site-specific EMPs. The project will also support further research and promotion of geoglyphs as historic and cultural heritage and a tourism attraction in the project area.

H. World Bank Grievance Redress

74. **Communities and individuals who believe that they are adversely affected by the Bank-supported project may submit complaints to existing project-level grievance redress mechanisms or the Bank's Grievance Redress Service (GRS).** The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project-affected communities and individuals may submit their complaint to the Bank's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of Bank noncompliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the Bank's attention, and Bank Management has been

given an opportunity to respond. For information on how to submit complaints to the Bank's corporate GRS, visit http://www.worldbank.org/GRS. For information on how to submit complaints to the Bank Inspection Panel, visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Country: Kazakhstan

Project Name: Center West Regional Development Corridor (P153497)

Results Framework

Project Development Objectives

PDO Statement

The Project Development Objectives are to improve the transport connectivity within the regions along the Kazakhstan Center West Corridor and strengthen the capacity of selected agencies for the effective implementation of the corridor development and road asset preservation policies.

These results are at	Project Level

Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR 6	End Target
Reduction of travel time (Hours)	22	22	22	22	16	14	12	12
Market accessibility index[8]	14.9	TBA	TBA	TBA	TBA	TBA	26.9	26.9
Preparation of a Corridor Development Action Plan and implementation of its high priority elements	No	No	No	No	Yes	Yes	Yes	Yes

[8] This index calculates total population—or another size attribute such as total purchasing power or output—in a number of cities and towns within a given threshold distance, inversely weighted by travel time from the origin. According to Yoshida (2009)' s paper, a potential market accessibility index can be $I_i = \sum_j \frac{S_j}{T_{ij}}$ where, Sj is a size indicator at target j (for example, population of large cities/towns), and Tij is the travel time between origin i and target j.

(Yes/No)								
Number of Road maintenance agreement for O&M developed (Number)	0	0	0	0	0	0	3	3
Road Safety Program developed (Yes/No)	No	No	No	No	Yes	Yes	Yes	Yes

Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values						
		YR1	YR2	YR3	YR4	YR5	YR6	End Target
Roads re/constructed, non-rural (Kilometers) - (Core)	0	101	304	507	710	811	1014	1014
Number of jobs created during construction (Number)	0	0	10,293	20,586	30,879	41,172	51,466	51,466
Supporting infrastructure built: km of short access roads (Kilometers)	0.0	0	0	0	0	290.4	290.4	290.4
Supporting infrastructure built: number of bus stops (Number)	0	0	0	0	0	68	168	168
Supporting infrastructure built : number of trading and service areas for local population (Number)	0	0	0	0	0	11	11	11
Training to farmers and rural population on how to benefit from the road side services (basic accounting, small business administration, marketing) delivered (person-days)	0	0	0	0	300	600	600	600
Comprehensive review of road safety standards completed (Yes/No)	No	No	No	No	No	Yes	Yes	Yes
Road safety education and awareness campaigns	No	No	No	No	No	Yes	Yes	Yes

undertaken (Yes/No)								
Increased users' (especially B40 and women) perception of improved access to markets and services (Percentage)	0	0	0	0	0	0	0	30
Grievances registered related to delivery of project beneficiaries that are actually addressed (percentage)	0	100	100	100	100	100	100	100

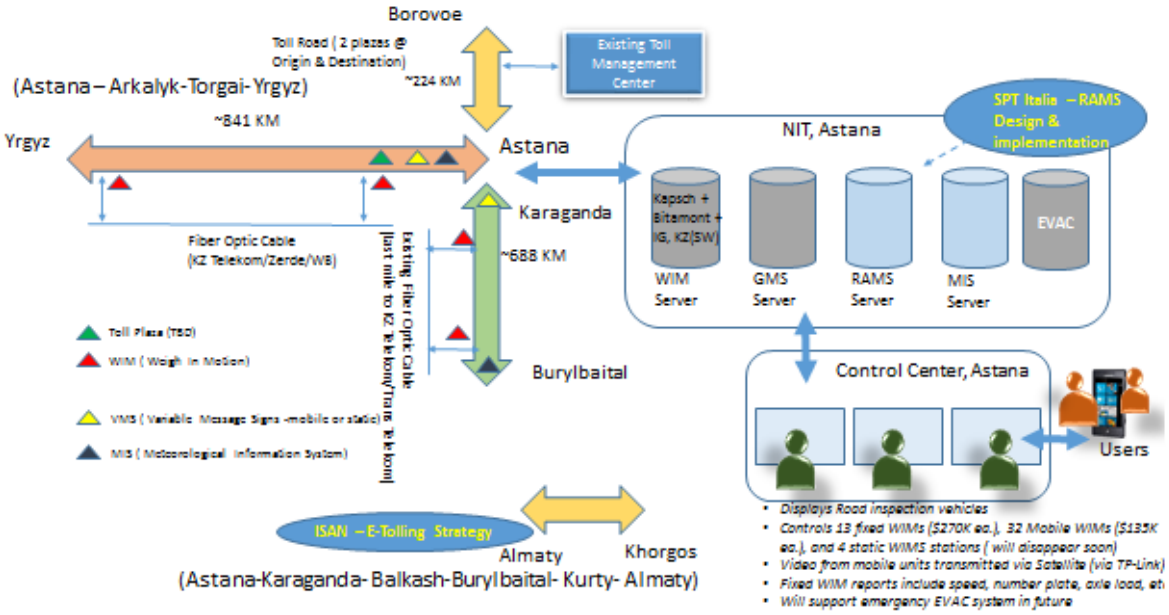
Annex 2: Detailed Project Description

COUNTRY: Kazakhstan

1. **The proposed Centre West Regional Development Corridor project is part of the transit corridor "Baku-Astrakhan-Atyrau-Aktau-Turkmenistan border"**, which connects Kazakhstan with Azerbaijan and Europe in the west, with Russia in the north, through Iran with countries of the Persian Gulf, and Uzbekistan and Turkmenistan in the south. Estimated 2,000 km The Center West project will connect Astana oblast with Akmola, Kostanai, Aktobe, Atyrau, and Mangistau oblasts, thus linking two of four identified "urban agglomerations", and two of the identified "second-tier" towns. The project is expected to contribute to the local development of the regions through which it passes and promote pro-poor growth by overcoming the spatial mismatch between the location of jobs and settlements for low-income residents.

2. **The construction will be mainly a two lane standard (which indicates a well-grounded consideration of standards and costs),** and expand to four lanes through the first 98km from Astana to Zhanteke. The four lane design close to Astana is justified given the expected traffic (above 7,000 vehicle per day at opening) and the potential for tourism development of the Zhanteke region and the Ramsar wetland around the lake Tengiz-Korghalzhyn. Tolling is also being considered on the four lane section and consistent with a broader tolling plan currently envisaged by the GOK. The new road once constructed will become part of the main (republican roads) network. It will be a Class II (2-lane) highway for the most part. The GOK is aiming for completion of all the corridors by 2020.

Figure 1. Current and Future Tolling and ITS Interventions



3. **Component 1: Infrastructure development and Supervision (US$1,088.08 million)**. The component will be implemented by the CR. It will finance the construction of road sections of about 1014 km between Astana and Yrgyz to Shalkar, and consulting services for supervision of civil works. In addition, it will finance the construction of the maintenance facilities (depots),

short access roads (road connection between the new road and nearest settlements, trading plots and service areas, bus stops, parking areas, emergency response centers, and ITS components. The CR and the Bank have already implemented US$3 billion civil works over the last 5 years in Kazakhstan. The cooperation has been very successful in building a resilient road network of good quality at a reasonable cost (US$4 million on average for 4 lane upgrade and US$2 million on average for 2 lane upgrade). This cooperation is expected to last and allowing more ambitious plans for the civil works under the new project including: (i) incorporation of vocational training[9] for up to 5,000 staff during the construction; (ii) installation of fiber optical cable to allow local population to use the e-government service; (iii) provision of infrastructure (short distance access roads, trading and service areas, bus stops, parking areas, and shelters) between location of services to the communities and the new road.

4. In addition, and as part of a nation-wide effort, the corridor will be equipped with arches, which will include weigh-in-motion for vehicle detection and weight measurement as well as variable message boards controlled remotely to display road conditions alerting drivers of inclement weather (based on outputs from weather sensors), notify drivers of accidents and display messages related to fatigue management. In addition a series of sensors on and off the road will be installed to send measurements to the control center from where speed limits and advisory messages based on weather data analysis would be managed remotely. Land acquisition and road design costs will be financed through the Republican budget.

5. **Improving quality of detailed designs:** Engineering design for proposed road investments will be prepared by local designers which have gained extensive experience in design of the Bank financed road projects under the South West Road Project (SWRP) and East West Road Project (EWRP). Detailed designs will consider appropriate technical and engineering solutions related to ground conditions, pavement, safety measures, bridges and concrete structures to enhance quality and climate resilience of proposed road investments. Main lessons learned from the ongoing project related to designs and technical solutions are the following: (i) preparation of detailed design needs to be supported by thorough geological and ground investigations to enable appropriate engineering solutions to specific ground conditions to prevent from potential cost and time variations during implementation; (ii) considering large gradients in temperature between the summer and winter seasons in Kazakhstan, there is a need to enhance application of more resilient pavement and overlay technologies such as the Stone Mastic Asphalt (SMA), which was successfully tested in several contracts under the SWRP; (iii) there is a need to improve design of bridges and avoid application of very old bridge structures; (iv) contractors shall be encouraged to introduce value engineering for improving designs and introducing modern engineering approaches based on cost-efficient solutions. The Bank team will support the GoK counterparts to carry out technical review of detailed designs to improve quality and resilience of investments.

1. [9] The skills development would be embedded within civil works contracts. The Bank's Education team will help develop the language to include in the civil works contracts, including recommendations for minimum quality/content/duration requirements.

6. **Component 2: Corridor Development (US$5.78 million).** The project has a regional development dimension as it is expected to provide better connectivity to lagging regions and ensure inclusive growth. Apart from the benefits realized in the short term due to improved infrastructure and linkages such as reduced travel times, costs, and improved reliability of travel, the corridor will facilitate long term regional development and convergence of regions. The project will offer a platform to synergies from regional development plans and other sector investments along the corridor.

7. This component will be implemented by the Department of Tourism of the MoID and *akimats* with the assistance from CR, KAZ, Department of Technological and Innovation Development and consultants hired under the component. An Inter-Agency Working Group (IWG) of MoID chaired by the Vice-Minister of Investments and Development will be established to take decisions and coordinate implementation of respective multi-sectoral actions across different GoK agencies at the central and oblast levels and will provide general supervision and reporting over the project to ensure that it responds to the needs of local and business communities and promote regional development.

8. The objective of the component is to customize the corridor to local advantage and to ensure that economically disadvantaged sparsely populated and remote areas within the corridor in Akmola, Kostanay, and Aktobe oblasts are provided with reasonable access to basic services and new markets. Local development plans and existing strengths, resources, as well as services in demand along the alignment were assessed in consultation with local communities.

9. The assessment identified agriculture, tourism, services, and education as strategic focus of the corridor. The component will finance: (i) preparation of a Corridor Development Action Plan (Plan) focusing on development of agriculture, tourism, services, and education and (ii) implementation of some key priority activities from the Plan.

10. Key priority activities of the Action Plan could include, but not be limited to the following:

A. Agriculture. Enhancement of productivity and competitiveness of existing agricultural products (especially livestock and food chain-agriculture):

a) Development of pasture and livestock use and management plans. There is a need for a better planning to promote mobility in pasture use and communal herding to reduce drudgery and improve productivity (e.g. good breeding bulls with breeding cow herds, separate bulls/castrate herd, better and longer grazing for animals). Some pasture infrastructure needs to be developed /rehabilitated.

b) Capacity building for production planning. A concerted effort is needed to (i) decide to produce milk, to produce weaners (meaning a herd with high % breeding cows and sale to feed lots), mix of these two activities or develop specialized finishing animal places/mini feedlots as well; (ii) develop fodder and feed balance sheets on annual basis with required amounts of fodder and feed; and (iii) define ‘missing’ feed and fodder, physically and financially (plan of support linked to processors of milk and

meat: more geared towards the maintenance of the breeding animals over winter and increase calving and lambing rates the most important productivity parameters within the livestock production system).

B. Tourism. Enhancement of ethno-, cultural, and eco-tourism potential.

a) Demand Analysis and Development of a Circuit Design. There is a need to assess the potential for a tourism market along the CWP to grow and identify activities that need to be done in consultation with local communities, *akimats*. The itinerary/map/app with tourist attractions would be developed for potential tourist to see the places of interest when they travel the CWP and divert off the road – where to eat, buy local crafts, have walking experience, riding horses, bird watching, first schools, etc. See the Box 1 for a list of the ethno, cultural, and eco-tourism potential of the CWP catchment area.

b) Site Destination Management, Marketing and Promotion Campaign. To ensure sustainability of the site development in the long run, the site management plan need to be developed supported by the marketing and promotion campaign. The GoK and Bank team can work jointly with the UNESCO on the development of the Site Management Plan, which would identify the tourist carrying capacity and provision measures needed for fragile sites. Media campaign marketing through various media means (ads, posts, the Facebook, apps, etc.) would be also important for development of tourism and creation of jobs in the sector.

Box 1. Ethno-, cultural, and eco-tourism potential of the catchment area of the Center-West Corridor

Ethno-tourism: Turgay geoglyphs, including Eki Din, Sahna, and Kogai cross forming a pattern of equilateral crosses, swastikas, circles and lines produced on the ground and formed by rocks, live trees, gravel, and earth; these objects were actually discovered in 2007. They are perfectly visible on Google Earth satellite images, made above the territory of the Torgay region. The only thing that distinguished these "drawings on the ground" from the Nazca Lines - is that Kazakhstani geoglyphs are "made of mounds and barrows and exceed them in size". The largest object is Ushtogaysky square, which size and accuracy of geometric shapes amaze. The size of this square is 287 meters, i. e. 25% of the base of the Cheops pyramid. It consists of 101 mounds. The 101st one is located in the center, on each side are 15 barrows and 10 barrows in each half-diagonal. Another object is Torgay three-fold swastika of 90 meters in diameter. However, the soil in this area is different and the object's condition is very bad. In addition, there are the Big Ashi-Tastinsk and Ekindynsk crosses, as well as flat circles. British scientists found out that "the youngest" Torgay geoglyph was constructed between the first century BC and the first century AD, which means that they are 2,5 thousand years. Meanwhile, ancient Torgay geoglyphs, which can be viewed only from space, can be aged between 7000 years of age and older.

Cultural-tourism: places of birth and work of first Kazakh educators Ahmed Baitursynov, Ybyrai Altynsarin, civil leader Amangeldy Imanov, etc. There are existing museums – first Kazakh schools, but they are not known to public at large, there is a need for better marketing.

Eco/flora and fauna tourism: The eastern end of the route passes through the area adjacent to the buffer zone of Korgalzhyn State Nature reserve (part of the UNESCO heritage site Saryarka

— Steppe and Lakes of Northern Kazakhstan), which contains undisturbed areas of Central Asian steppe and lakes - a home for more than 60 rare species of animals and plants, listed in the Red Data Books. The reserve is located on the territory of two oblasts (Akmola and Kostanai) and occupies 16031 sq. km including the buffer zone and transition areas. It is a Ramsar site (1976) and a first biosphere reserve in Kazakhstan (2012). Korgalzhyn State Nature Reserve was given a classification of Ia (Strict Nature Reserve) by the International Union of the Conservation of Nature. The Zhanteke – Egindokyl section of the proposed route passes some distance to the north of Lake Tengiz- Korghalzhyn, a Ramsar wetland which is the location of the most Northern nesting population of Flamingo (its population in some years may reach 50,000-60,000 birds).

About 7000 people visited Korgalzhyn during 2014 and contributed to 16 million Kazakhstan Tenge revenue (85 thousand US dollars) in the form of admission fees, paying for guided tours and renting wooden houses for accommodation. This money formed a significant part of the district budget. However, the number of visitor and, hence, profit from tourism can be significantly higher. Preparation of development plan for tourism will be prepared with local authorities and MoID under Component 2. Local government also plans to develop traditional arts and crafts and build an ethnic village coinciding with "Astana Expo 2017", the Word Exhibition that will be conducted in Astana from June 10th to September 10th, 2017. It is expected that EXPO 2017 will be visited by up to 5 million people and Korgalzhyn might benefit from this amount of tourists. At the same time the tourist infrastructure and the tourism management system needs a significant improvement. The proximity of the new road may play a beneficial role in the development of tourism increasing the number of visitors coming from Astana.

Vast area to the West from the Tengiz- Korghalzhyn lake system is a natural habitat for Saiga antelope (Saiga tatarica) which went through the massive (up to 100,000 animals, about half of the world population) die-off in May-June 2015 due to unknown reasons. The project shall take necessary measures specified in the site-specific ESMPs to ensure that the preservation efforts are not jeopardized by the construction works even if they are undertaken outside of the protected areas. Such measures may include, but are not limited to, reduced activity during the Saiga migration season, specialized training for construction workers, provision of wildlife crossings and signage.

C. **Education for local population and Capacity building for local authorities (*akimats*) for improvement of rural economic development plans/action plans**.

a) Focus on agriculture, tourism, industry and business development given accessibility of the new markets and transport infrastructure. It would aim to define actions for the local authorities, businesses, farmers, and community in order to enhance production and economic opportunities. Taking into account improved transport connectivity, the plan would assess opportunities for value-added processing, technology, and infrastructure needs. Development plans should also include support to local livestock bazaars.

b) Provision of basic training to rural people and farmers on accounting, marketing, administration of small businesses (improving the quality of existing goods and services), streamlining the processes – key element that can increase the value added and productivity of existing SMEs.

c) The plan could also identify needs in skills development and set business/entrepreneurial couching services for the rural population, as well as explore opportunities in cross-regional cooperation and partnerships.

d) Provision of training on road safety at schools.

11. **Component 3: Operation and Maintenance (US$9.09 million).** The component will be implemented by CR. As the new road will become a republican road, it is necessary to invest on facilities and equipment for operation and maintenance. The location of facilities is identified by the feasibility study, as well as the type of equipment for routine maintenance of the proposed corridor. Construction of maintenance facilities (depots) is envisaged under financing of the Component 1. . The component will finance equipment for maintenance along the corridor including graders, bulldozers, snow blowers, tractors, and others. This component will increase the efficiency of the operations and maintenance of the Center-West Project corridor, which will help to extend the new road operation period. It is expected that the recommendations on the project development of the Quality Charters will be used within the framework of the legal norms.

Management of the maintenance on the republican road network

12. Kazavtozhol has 673 staff members, most of which are based in the oblast offices (303 staff) or in its Toll Road Directorate (261 staff). Kazavtozhol was recently transferred and is now under the responsibility of KTZ, allowing KAZ to operate as a commercial entity. KAZ is tasked with the daily management and supervision of republican road works. KAZ representation in each region is responsible for procurement and contract supervision on behalf of the government. While KAZ tenders out repair and upgrade works to contractors, routine maintenance stays with RSE and its 3,300 staff. RSE income is largely limited to CR payments for routine maintenance. RSE has 14 subsidiary oblast enterprises, 80 depots (DEUs), 196 sub depots (DEPs), and 8 tree planting nurseries (LPU).

Sustainability

13. About a quarter (23,700 km) of roads in Kazakhstan are republican roads. Category I or II roads (6,000vehicle per day and above) made up on third of the republican road network in 2010. By 2020 this percentage is expected to double. In 2014, 32% of republican roads were reported to be in good condition and 49% in satisfactory condition. But the ratings remains subjective and review of the activities conducted by RSE reveals that on average 17 m2 of potholes are repaired per lane-kilometer of republican road which indicates that road conditions are not as good as they are reported to be. The budget earmarked for road is increasing sharply under the Nurly Zhol program, doubling between 2011 and 2016. But the budget allocated to repairs does not increase. Mid-term maintenance can be carried on average only once every 20 years instead of the normally recommended 5-7 years. Allocations for routine maintenance have increased slightly. But the lack of financing for repairs forces RSE to increase maintenance activities on roads in poor condition.

Republican road network expenditure and length per year

Year	Maintenance	Mid-term repair		Capital repair		(Re)construction		Other	Total
	(KZT million)	(KZT million)	(km)	(KZT million)	(km)	(KZT million)	(km)	(KZT million)	(KZT million)
2001	2,049	2,960	1,471	11,042	211	7,687	119	418	23,738
2002	3,851	3,421	1,445	17,602	347	5,674	92	1,965	30,548
2003	2,439	3,640	1,448	18,348	443	9,984	168	220	34,411
2004	4,214	4,306	1,428	21,574	546	10,945	386	687	41,039
2005	4,490	7,328	2,200	29,589	734	13,501	391	106	54,908
2006	5,522	7,122	1,955	21,704	84	27,694	626	406	62,042
2007	6,977	6,649	1,573	24,113	112	68,888	688	141	106,627
2008	7,409	6,837	1,459	6,130	82	85,355	736		105,732
2009	7,788	6,412	1,155	7,118	76	70,567	700		91,885
2010	9,538	3,763	794	8,649	83	123,681	600	1,750	147,381
2011	11,683	7,085	1,164	11,072	77	157,722	1,013	1,995	189,557
2012	9,000	9,000	1,099	9,000	65	172,529	1,051		199,529
2013	10,710	9,548	1,107	9,000	58	200,260	557	2,330	231,848
2014	14,000	10,562	1,265	11,318	59	272,998	740		308,878

Source: COR

14. Funding from road user charges is on the increase mainly via toll road introduced in 2013 and with 7,000 km of toll roads planned for 2020. Currently there is only one toll road in Kazakhstan, running for 211 km from Astana to Schuchinsk. It is an open toll road with automated toll booths at the start in Astana and at the other end in Schuchinsk. The road is managed by KAZ which collects the toll revenue and uses this for the operation of the toll collection system and the maintenance of the road. Total expenditure in 2013 amounted to KZT 559 million, exceeding the revenues by 60%. In 2014, the situation improved with KZT 1.2 billion collected, still more than the revenue by 16%. Deficits are covered from the COR maintenance budget. For 2015 it is expected that the deficit will only amount to only KZT 30 million as traffic levels increase. As for the medium to long term, MoID expect to expand the program to 7,000km. When this materializes it could generate an annual revenue of KZT 40 billion, equivalent to the current repair and maintenance budget.

15. The maintenance mechanisms in place should evolve. The case of the Mangystau region can be used to describe how the arrangements currently work. Mangystau region is a Western region of Kazakhstan on the Caspian sea. Its capital is Aktau, which has a population of 154,500. The entire region has a population of 373,400. There is a branch office of KAZ in Artau with 12 staff. At the same premises 8 staff represent the local office of Zhollaboratory that report to CR on the quality control of construction and repair works on the republican roads network. There are also three units of RSE, 100 staff in total. Those units received in 2015 an annual budget of about 280 million Tenge (against 322 million that was planned) resulting in a US$2,000 equivalent for routine maintenance on the main network. The annual budget allocation is normative, based on a revised set of norms by KazDornII (Kazakhstan Road Design Institute) in 2013. RSE regional management considers that the budget they are allocated would suffice to perform their annual routine activities[10]. RSE management reports that the salary of the staff is also normative, but fails to take into consideration the cost of living in the region, which is significantly higher than the average in Kazakhstan. This is seen as the main reason to a severe

[10] Mangystau oblast spends about half less than other regions of Kazakhstan on winter maintenance. Winter maintenance in most of the regions of Kazakhstan represents about half the total expenditure for routine maintenance.

attrition of the staff. Most of the qualified staff is leaving to join the private sector, mainly the oil industry.

16. The current system has clear advantages: (i) it is stable and it allows a basic set of low volume activities to be carried out throughout the year. Those activities would most probably not attract the private sector; (ii) the financing of maintenance activities is stable and predictable with 250 million Tenge in 2013, 300 million in 2014 and 280 million in 2015 in Mangystau; and (iii) the management of all main road is handled by one single institution in each region, and thus at the country level. The disadvantage is that RSE is left with poor equipment that is 15 year old on average, unable to acquire new sets or implement new technology, and there is not incentive built in the system that remains 100% based on norms. Also results are not monitored. As a result there is no incentive to make the current system work better.

17. The project will support one way forward based on the following activities: (i) an assessment of the need for maintenance activities based on the real condition of the network (now possible with the Road Access Management System put in place under the South West Roads Project) and the adjustment of the staff salary to the cost of living in the region;

18. The Road maintenance agreement between KAZ and road maintenance service providers may sounds a modest reform. But it is a realistic option that can be implemented. Also the current normative contracting environment and the low volume of activities would not allow out-sourcing using performance-based types of contract. Road agencies such as KAZ and road maintenance service providers move towards maintenance reforms gradually after experiencing more conventional forms of contracting. The project will implement acceptable agreement for maintenance activities that are being prepared under the East West Roads Project and also under ADB-financed assistance. The service agreement is expected to contain the following core activities: routine maintenance; emergency response; repairs; inspection and monitoring; operation and maintenance of service areas; provision of information and assistance to road users; data collection and reporting, and maintenance of data systems. The following principles are expected to prevail in the day to day relations between KAZ and road maintenance service providers: (i) a ‘best for network’ approach; (ii) open communication and collaborative decision-making; (iv) transparency in decision making and cost accounting; and (v) recognition of the opportunities for developing and retaining core knowledge and skills.

19. **Component 4: Road Safety (US$ 2.88 million).** The component will be implemented by the CR together with the CAP –Kazakhstan’s lead road safety agency. The objective of this Component is to help the Kazakh authorities design and implement the RSP, improving design norms and standards, strengthen institutional capacity in relation to the RSP implementation, and increase road safety education and awareness of road users in Kazakhstan.

20. The work under this Component will build on the road safety activities carried out in the past by the Bank and other IFIs. As part of the Western Europe-Western China development corridor (Bank-financed SWRP) the GoK has implemented the following activities: (a) Road Safety Management Capacity Review in 2009; (b) Road Safety Audit of the 1,062km; (c) training on the Road Safety Audit; (d) RSA Manual Developed; (e) pre-opening RSA; (f) review of drafts of the laws "On Road Traffic" and "On amendments and addendum to some legislative acts of the Republic of Kazakhstan on the road", as well as by-laws to support implementation of

the laws; (g) Reports on traffic safety at road works for all 24 contractors, (h) Handbook/Guidance on Traffic Management at Road Works in Kazakhstan. The dialogue on the road safety is not limited to this project or the SWRP. Additional activities, specific to the Center South project being prepared in parallel are also discussed, the TRACECA has an ongoing dialogue with the GoK as well on the legislative framework.

21. Through this Component, the Bank aims to further help Kazakhstan in improving efficiency and sustainability of road safety activities and to contribute to the achievement of the ambitious road safety goals under the five pillars set in the UN Decade of Action 2011-2020.

- **Component 4.1: Design of the RSP.** This component will finance: (i) update of the 2009 Road Safety Management Capacity Review to provide a comprehensive assessment of needs of the CAP and other sectoral ministries and agencies on enforcement, emergency response, engineering, and education; (ii) development of a comprehensive RSP (including the monitoring framework and specific Multi-Sectoral Action Plan (Action Plan)); (iii) implementation of some key priority activities from the Action Plan.

- **Component 4.2: Comprehensive Review of Road Design and Safety Standards:** This component will support: (i) comprehensive review of road design and safety standards (SNiPs, СТРК, ПРРК, РРК standards and norms) including best international practices; and (ii) development and introduction of modern road design and safety standards based on the "systems view" (with focus on man, vehicle, and road) and "forgiving roads" concepts, e.g. changes to norms to introduce the road safety audit (at all stages from design to infrastructure safety inspection prior to the opening of the new infrastructure) and supervision of safety for users and workers on the construction sites.

- **Component 4.3 Road Safety Communication, Awareness, and Education.** The objective of this assignment is to increase road safety awareness of road users in Kazakhstan. This objective will be reached through development and implementation of a road safety communication, education, and awareness campaign (e.g., about road safety enforcement). The component among other things will support identification of key reasons for road accidents on roads; prioritization of high-risk behaviors to be targeted through awareness campaigns; development of key road safety messages to high-risk road user groups and their extended social and business networks; development of TV commercials, internet advertisement; arrangement of stories or interviews with victims about personal or family tragedies as a result of road accidents on TV or radio channels; arrangement of interviews with representatives of the CAP, CR, and other agencies about their work to improve road safety. This component will support provision of knowledge about a proper and consistent communication, awareness, and education system addressing road safety issues, based on international best practices, which then will be adapted to the needs and perception of road users and people living along roads of different age groups, including children, teenagers, parents, and care providers. Presentation of such examples should contribute to the development of strengthening capacity of CAP, CR, and other agencies to prepare and implement such component of RSP.

22. **Component 5 (US$5.37 million)**: **Project Management.** The component will be covered from the GoK budget, and not be financed from the Loan proceeds. CR identified KazAutozhol (KAZ) as a Project Management Consultant (PMC) for the CWP and other roads projects to be financed by other IFIs. While the MoID will retain the overall responsibility for the project implementation, KAZ is expected to assist the CR on day-to-day operations managing project activities, such as supervision of social, environmental, and fiduciary safeguards, provision of administrative support, M&E, inter-agency coordination, etc. The PMC staffing may include (a) specialists for procurement, FM, social and environmental safeguards, and M&E; (b) a small technical team of subject-matter experts; and (c) administrative support (e.g. assistants, office manager etc.).

Annex 3: Implementation Arrangements

Project Institutional and Implementation Arrangements

1. **GOK envisages the proposed project as a strategic operation to provide better connectivity within the regions along the Center-West corridor** to: (a) encourage agglomeration (contribute to the local development of the regions through which it passes and promote pro-poor growth by overcoming the spatial mismatch between the location of jobs and settlements for low-income residents) and (b) to stimulate provision of reasonable access to basic services in less developed, remote, and sparsely populated regions. Given the magnitude of Project's impact on economic development, such as job creation, regional development, development of small and medium enterprises, support of poorest communities, and citizen engagement, the following institutional and implementation arrangements have been agreed (Figure 1).

2. **Project implementing agency.** In accordance with Kazakhstan's legislation the Ministry of Investments and Development (MoID) will be designated as the general administrator of budget financing for Project implementation and the ministry responsible for the project. The CR of MoID will be nominated as the Project Implementation Agency. CR will be responsible for project budgeting, project management and implementation, and for tracking, monitoring, and reporting project results and impact. The MoID will nominate Deputy Chairman of CR as Project Director (same arrangement as for the ongoing projects).

3. **Project Management Consultant (PMC).** The KAZ will act as a PMC and report to the Project Director. The PMC will be responsible for project procurement, FM, social and environmental safeguards, disbursement, administrative support, M&E, and other project implementation functions. The PMC may be supported by individual consultants to be hired from Loan proceeds under component 2. The PMC staffing will include (a) specialists (on terms of reference to be agreed between the MoID and World Bank) for procurement, FM, accounting, social and environmental safeguards (with designated staff with presence in the field/Project catchment area), and M&E; (b) a small technical team of subject-matter experts to support participating agencies; and (c) administrative and logistical support (e.g. assistants, office manager etc.). As part of the ongoing SWRP and EWRP implementation, in February 2014 the Bank team finalized its legal and fiduciary assessment of the capacity of the KAZ and concluded that KAZ has adequate capacity to provide fiduciary supportive actions. The Bank will undertake additional capacity review of the KAZ with regards to the needs of the CWP implementation.

4. **Inter-agency Working Group (IWG)**. In view of Project's nature that cut across various areas under the responsibility of several agencies, there will be an IWG chaired by the Vice-Minister of Investments and Development, and composed of high level representatives of participating agencies, defined below. The IWG will meet at least twice a year and will assess and report progress in Project implementation, provide forum for discussion and resolution of issues, and develop proposals on improving Project efficiency. The PMC will be appointed as a Secretary of the IWG, which will provide general oversight, guidance, and strategic supervision of the Project, as well as forum for consultation with other stakeholders of the Project to ensure

that Project responds to the needs of local and business community and promote regional development.

5. **Participating agencies**. Each Project participating agency will ensure that its relevant units will be designated to undertake functions such as developing technical specifications and terms of reference for their project activities, participate in bid evaluation and other procurement processes, implement project activities under their respective components, accept outputs (e.g. from consultants), and report to the Project Director on a quarterly basis on project results for their respective components. The agencies participating in the Project are any or all of the following:

- Committee of Administrative Police (de facto lead road safety agency) of Ministry of Internal Affairs (CAP) will be leading implementation of Component 4: Road Safety. The PMC at KAZ will support CR in processing procurement and FM. CR, KAZ, as well as Ministry of Health, Education, Emergency will contribute to the project's road safety outcomes.

- *Akimats* of Akmola, Kostanai, and Aktobe oblasts will lead implementation of Component 2 A and C: Corridor Development as well as the rest of components as relates to regional and local initiatives support, development of agriculture, services and skills.

- Department of Tourism of Ministry of Investments and Development (MoID) will lead implementation of Component 2 B: Corridor Development and contribute to tourism related outcomes.

- Department of Technological and Innovation Development of Ministry of Investments and Development (MoID) will participate in implementation of Component 2: Corridor Development and contribute to regional development related outcomes.

- Department for SME Development and Department of Regional Development of Ministry of National Economy (MNE) will participate in implementation of Component 2: Corridor Development and contribute to SME development and regional development outcomes.

- Ministry of Agriculture, including its Committee for Forestry, will participate in implementation of Component 2: Corridor Development and contribute to rural development, agriculture, and livestock outcomes.

- Kazakhstan Temir Zholy Transport and Logistics Company participate in implementation of Component 2: Corridor Development with respect to the logistics, connectivity, mobility issues.

- Committee for Communication and Information of the MoID will participate in Component 1 and 2, and contribute to ICT related outcomes.

- Other public or non-governmental institution.

6. **These implementation and institutional arrangements will reinforce ownership and accountability on the part of the selected** agencies, strengthen institutional capacity in such agencies for designing and implementing their respective programs and provide the needed flexibility to the GOK in implementing this project. In addition, there will be a high demand for coordinated, consistent and expert support to address the diverse needs of participating entities. The PMC will be expected to respond effectively to such needs and demands by facilitating day-to-day operational issues such as procurement, FM, fiduciary compliance and provision of secretarial support.

Project administration mechanisms

7. The tables below briefly describes responsibilities of project participants in the implementation **process.**

Project Components	**Project cost/US$ mlm**	**IBRD Financing (US$ mln)**	**Borrower Financing (US$ mln)**	**Who manages the contract?**
Component 1: Infrastructure development and Supervision	1,088.08	962.17	125.91	CR
Component 2: Corridor Development (agriculture, education, skills devt) and Corridor Development (tourism)	5.78	5.11	0.67	CR together with *akimats* and CR together with MoID's Dept for Tourism Development
Component 3: Operation and Maintenance	9.09	8.04	1.05	CR
Component 4: Road Safety	2.88	2.55	0.33	CR together with CAP of MoID
Component 5: Project Management	5.37	0	5.37	CR
Total Costs	1,111.20	977.86	133.34	

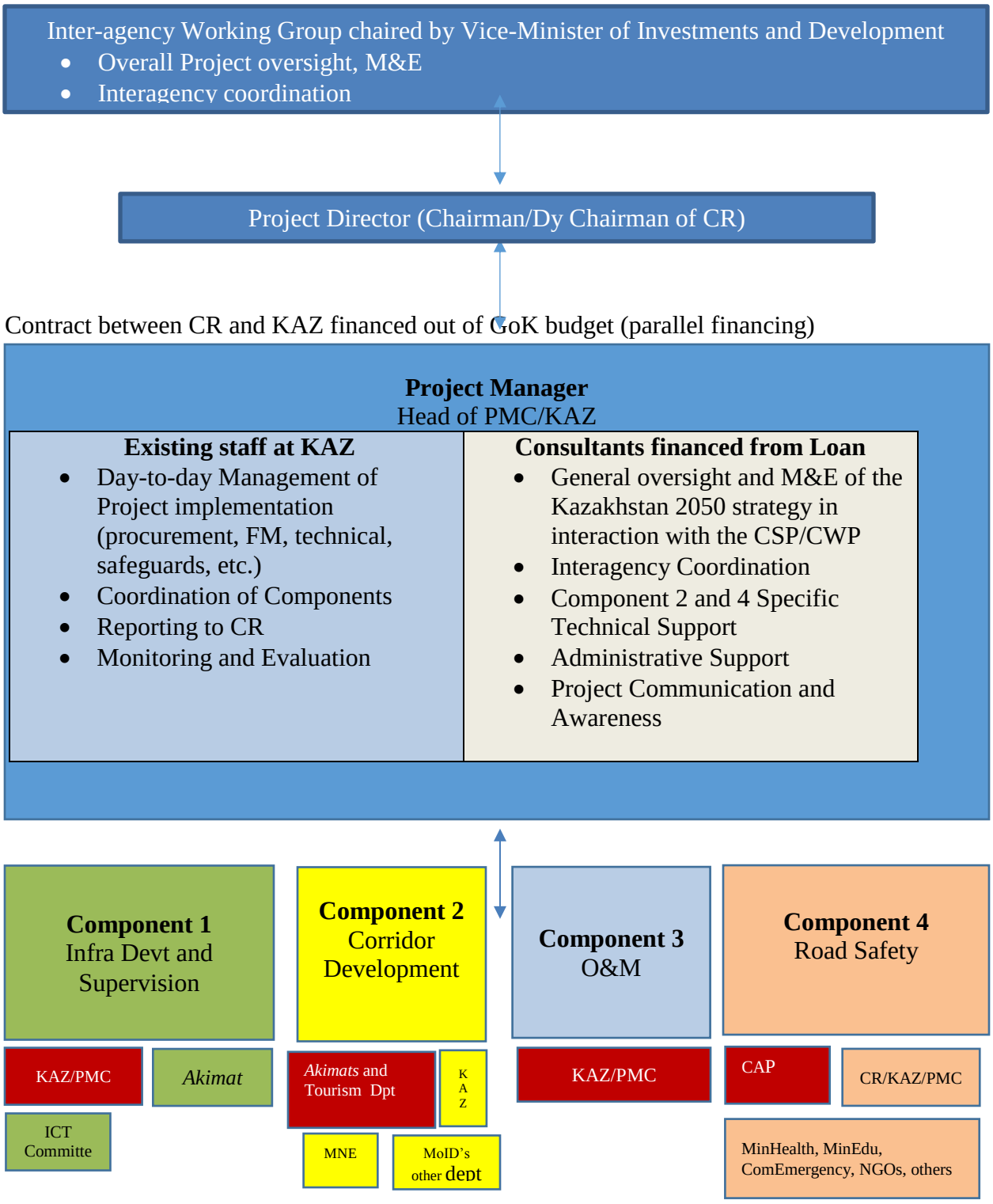
Participant	Activity	Supporting Documentation

MoID and Inter-Agency Working Group	• General oversight, guidance, and strategic supervision of the Project • Assessment of progress in Project implementation • Provision of forum for discussion and resolution of issues and for consultation with other stakeholders of the Project to ensure that Project responds to the needs of local and business community and promote regional development. • Development of proposals on improving Project efficiency	• Resolutions • Approvals
CR	• Overall Project management, implementation, and supervision • Project budgeting, FM, and accounting • Audit • Tracking, monitoring, evaluation, and reporting project results and impact • Inter-agency Working Group meeting at least twice a year. • Components implementation	• Periodic reports • Interim Financial Reports • Audit Reports
KAZ/PMC	• Supervision over social and environmental safeguards • Preparation of procurement documents • Tracking, monitoring, evaluating, and reporting project results and impact • Verification that Contractors have followed EIA procedures • Monitoring compliance of Contractors, Supervision Consultants, and other Consultants with implementation and safeguards plans • Management of disbursement • Administrative support • Inter-agency coordination and expert support to address the diverse needs of participating entities • Secretariat to the Inter-agency Working Group	• Periodic reports
Akimats	• Component 2: subcomponent on regional development (agriculture, services, education) management, implementation, and supervision • Tracking, monitoring, evaluation, acceptance of outputs (e.g. reports/deliverables from consultants) under Component 2 subcomponent on regional development • Developing technical specifications and terms of reference for their respective components	• Periodic reports

	• Acceptance of outputs (e.g. reports/deliverables from consultants) • Reporting to the Project Director on a quarterly basis on project results for component 2 subcomponent on regional development • Participation in Inter-agency Working Group meetings	
Department of Tourism of MoID	• Component 2: subcomponent on tourism development management, implementation, and supervision • Tracking, monitoring, evaluation, acceptance of outputs (e.g. reports/deliverables from consultants) under Component 2 subcomponent on tourism • Developing technical specifications and terms of reference for their respective components • Acceptance of outputs (e.g. reports/deliverables from consultants) • Reporting to the Project Director on a quarterly basis on project results for component 2 subcomponent on tourism • Participation in Working Group meetings	• Periodic reports
Committee for Administrative Police	• Component 4 management, implementation, and supervision • Tracking, monitoring, evaluation, acceptance of outputs (e.g. reports/deliverables from consultants) under Component 4 • Developing technical specifications and terms of reference for the Component 4 activities • Acceptance of outputs (e.g. reports/deliverables from consultants) • Reporting to the Project Director on a quarterly basis on project results for component 4 • Participation in Inter-agency Working Group meetings	• Periodic reports

Figure 1

KAZAKHSTAN: CENTER WEST REGIONAL DEVELOPMENT CORRIDOR PROJECT
Implementation Arrangements



8. **Context**. Kazakhstan has made good progress with reforming and strengthening its road sector institutions. As part of the SWRP the Bank supported the GoK in the reform aimed to introduce more efficient and commercially oriented management practices. In 2010 the Ministry of Transport and Communications (MoTC –now MoID) with the help from the Bank identified various options to reform the roads sector via restructuring the CR, including:

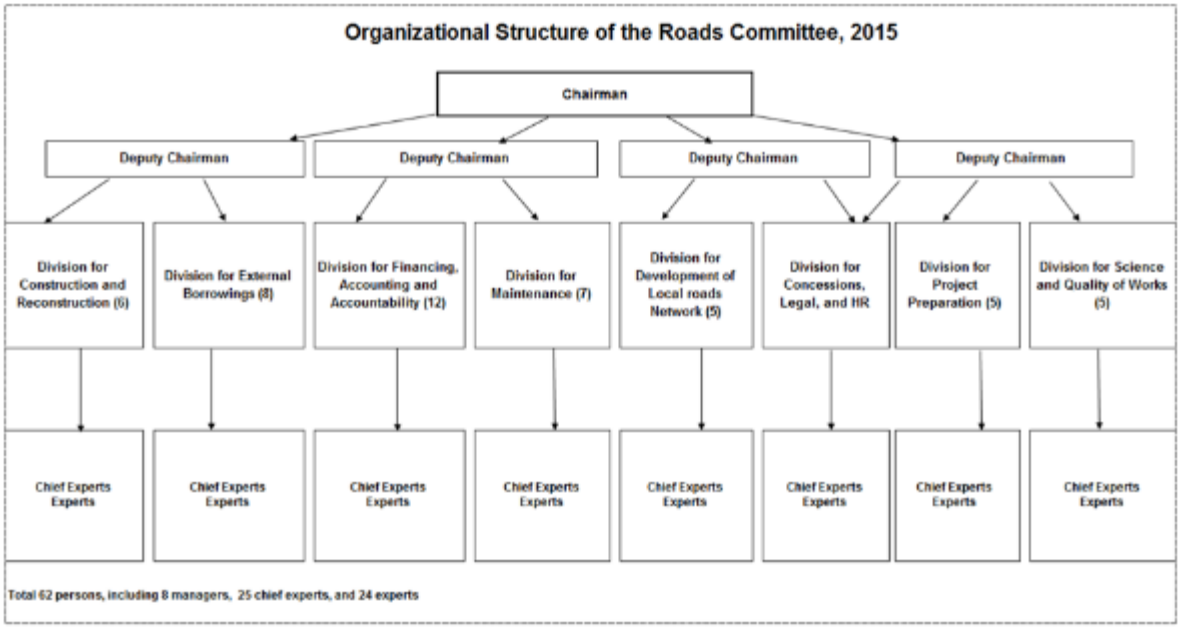
- Option 1 –CR to contract-out more management functions
- Option 2 – CR to design incentive mechanism at several levels to pay at market rate and motivate staff
- Option 3 – Decentralization of road management to oblasts
- Option 4 – Creating a Semi-Autonomous Road Agency
- Option 5 – Creating a Joint Stock Company (JSC)

9. **Despite selecting Option 1, as an initial step, and hence the concept of Project Management Consultants was adopted in the SWRP, the MoTC introduced important changes in the organization of the road sector by creating a Joint Stock Company Kazavtozhol (KAZ) in 2013** to reach the goal of strengthening the fight against corruption, reducing the burden of the road sector in the national budget, and better meeting road users' expectations. The reform aimed at the following results, which were aligned with best global practices and supported by the Bank through the ongoing SWRP and EWRP:

- Improved institutional structure with decision making level and sector policy at the level of the MoTC, road sub-sector policy management at the CR, and operational implementation of the road policy at KAZ;
- Separation of the client and supplier functions/organizations;
- Better management of road assets by a new commercialized organization KAZ;
- Increasing the efficiency of the system and ability to attract skilled personnel (managers, engineers, supervisors) in the sector for the implementation of the road policy (road construction, upgrading, rehabilitation, maintenance and operation, toll collection) while introducing PPP schemes and Pension Funds in the financing schemes.

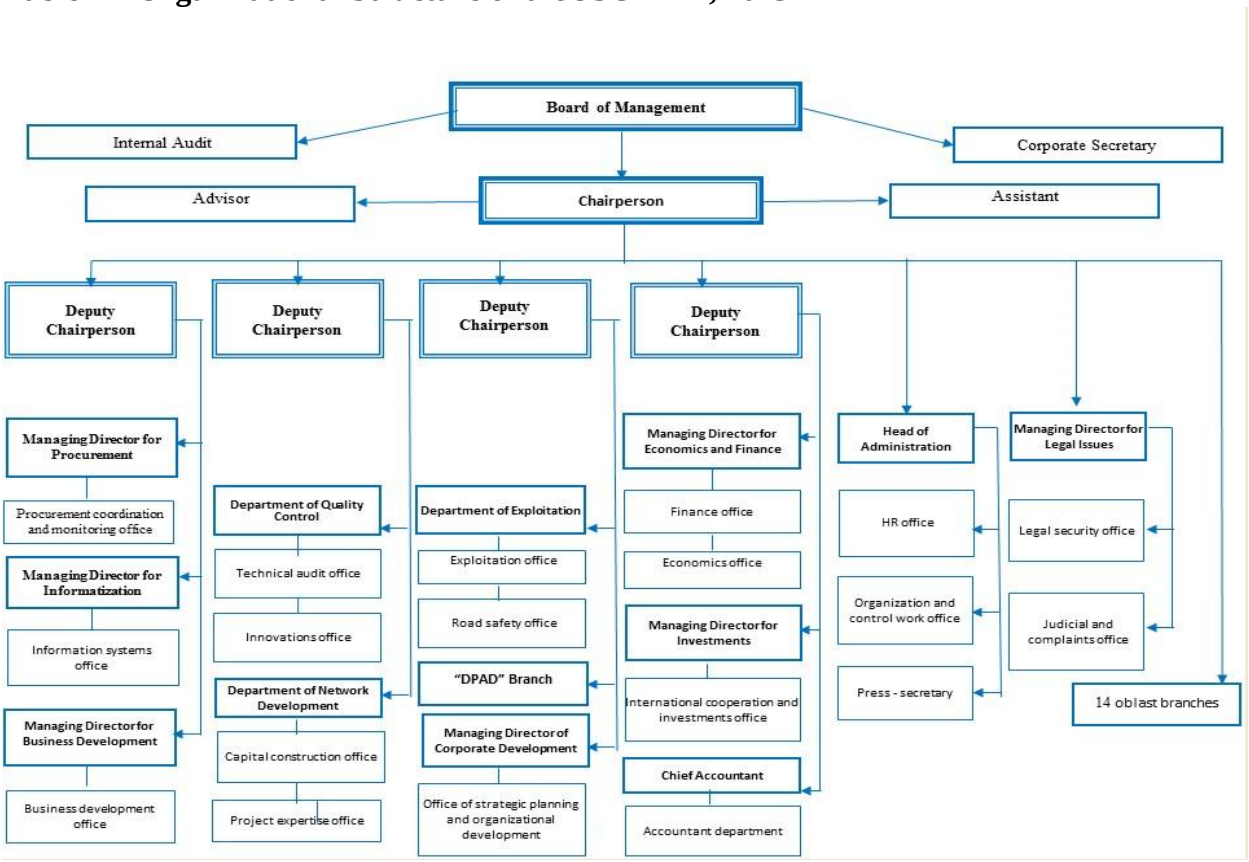
10. **As a result, the CR now is administering policy, including budget for republican network, and responsible for overall regulation and monitoring of the roads sector, including local roads.** It employees only 62 staff in Astana headquarters (Table 1) and has transferred staff of its local departments in 14 oblasts to the KAZ.

Table 1 – Organizational Structure of the CR, 2015



11. **Since September 2013 CR signs annual road maintenance agreements with KAZ to implement specific tasks on republican road network, ranging from supervision of civil works and development of design documents to operation of Astana-Borovoe toll road.** As of end of 2013 the JSC KAZ has employed 292 staff including the local departments in 14 oblasts. Today KAZ employees 642 staff (Table 2), including 107 staff in Astana headquarters, 303 staff in its local departments, and 261 staff engaged only in management and operation of the toll road Astana –Borovoe.

Table 2 – Organizational Structure of the JSC KAZ, 2015



12. **As of January 29, 2015, the KTZ, a national transport and logistics operator, has become a trustee manager of 100% shares of the KAZ**, while the Ministry remained a sole shareholder of the KAZ. The KTZ, originally a national railway company – a daughter company of the national holding JSC National Welfare Fund "Samruk-Kazyna" – embarked on an ambitious reform to become a single national transport and logistics operator. Besides railways and now roads, the KTZ has responsibility for management of key logistics hubs, including Aktau sea port, Khorgos dry port logistics hub, and a number of airports.

13. **As part of the changes in the GoK structure in autumn of 2014, the MoTC has been dissolved and merged into a newly created Ministry of Investments and Development (MoID).** All committees of the MoTC, including the CR, has been transferred to MoID. Beyond CR, which is a key Project administration agency, MoID in its organizational structure has other committees and departments that will play key role in the implementation of non- roads civil works Components of the Project. Specifically, the MoID's Committee for Communication and Information, Committee for Public Transport, and Department of Tourism are expected to contribute to the implementation of the Component 2: Corridor Development.

14. **Committee for Administrative Police of the Ministry of Interior (CAP) is a de facto road safety lead agency in Kazakhstan.** The designated legal authority is stipulated in the Order of the Minister on Approval of the Departments of the Ministry of Internal Affairs dated October 1, 2014 #662. Specifically, paras 20-26 of Section 2 Main tasks, functions, rights and responsibilities identify the CAP as an authorized agency to perform the following functions:

1) Provide for the regulation of traffic;

2) Agree on regulatory, design and technical documentation on the design, construction, repair, maintenance, and management of roads in terms of ensuring road safety, taking into account the needs of disabled people to ensure equal access;

3) Control the safety of traffic and issue binding orders;

4) Maintain a registry of training organizations for the training of drivers of vehicles;

5) Maintain a register of teachers, trainers and masters of driving instruction in the educational process for the preparation of vehicle drivers;

6) Agree on the established procedure documentation on territorial and transport planning and traffic management;

7) Create and maintains state information systems in the field of traffic and ensures its safety.

15. **As a de facto lead agency, CAP is leading the inter-ministerial coordination, which is a challenge because of the absence of a proper monitoring and evaluation instrument.** Through the Project CAP expects to design and develop the RSP with specific multi-sectoral Action Plans to be endorsed by the Government and supported by adequate budget allocation from the Ministry of Finance. Today CAP is tasked with the preparation of the National Report on the Road Safety Situation in Kazakhstan. The Project will help CAP to update the Road Safety Capacity Review prepared with Bank's support in 2009. All the activities envisaged in the Component 4: Road Safety were suggested by CAP, and the Bank team sees the CAP as a champion for moving the road safety agenda in Kazakhstan.

16. **CAP is committed to form a secretariat comprising 8-10 staff of different departments of CAP that would be responsible for implementation of the Component 4 on the Road Safety.** Given CAP's lack of experience with Bank procurement process, it was agreed that CR and KAZ/PMC, who are on the contrary very experienced in Bank project management, will be responsible for "processing" functions, such as procurement and FM. The CAP will undertake "substance" functions for the Road Safety Component activities, such as develop technical specifications and terms of reference, participate in bid evaluation; be the lead agency in the selection committee; implement Component activities, accept outputs (e.g. from consultants), and report to the Project Director on a quarterly basis on project results for Road Safety Component.

Financial Management, Disbursements and Procurement

Financial Management

17. **The CR with the support of the existing PMC will be responsible for the implementation of the FM function of the project including, the flow of funds, planning and budgeting, accounting, financial reporting, internal controls, and auditing.** Overall responsibility for the FM function under the proposed project will be with the Head of the Department for Financing, Accounting and Reporting of the CR. There are some actions that the

CR will need to complete for capacity building purposes. These are: (i) updating the existing POM of the SWRP and EWRP documenting FM arrangements for the new project, (ii) contracting dedicated FM Consultant for the Project; and (iii) updating the existing automated accounting software to capture the new arrangements.

18. **There are no major weaknesses at the CR, KAZ/PMC with respect to FM arrangements**. The significant strengths that would provide a basis for reliance on the project FM system include: (i) FM arrangements similar to existing projects being implemented currently and found to be adequate; (ii) no significant issues having risen in the audits of the active project being implemented by the CR; and (iii) experienced FM staff.

19. **Budgeting and Planning**. The CR will prepare annual budgets for the project based on procurement plans and project implementation plans. The budget procedures will be described in the FMM and will also follow the budgeting procedures of the GoK. The link between the budget and project activities will be established in the quarterly IFRs, and variances will be reported and monitored therein.

20. **Accounting and Information Systems**. The existing accounting software is adequate for project accounting and reporting. However, it needs to be tailored for this project.

21. **Internal Controls**. The CR and PMC are already operating under an adequate internal control framework defined by the regulations of the Ministry of Finance for budget organizations as well as specific procedures described in the POM for other projects they are implementing. The proposed project will be added in the existing POM of the SWRP and EWRP, which includes an FM section covering key internal control mechanisms to be followed by the staff in the application and use of project funds, with specific focus on ensuring completeness of accounting transactions, reliability of accounting data, safeguarding of project assets including safe custody of cash and other assets, proper monitoring of contracts, proper authorization and documentation of all project expenditures, and adequate segregation of functions, job descriptions for staff with different authority levels, as well as the flow of funds to support project activities, including proper manual management of the disbursement function, contracts management, and documentation flow. The manual will also describe procedures for regular financial reporting to ensure close monitoring of project activities.

22. **Financial Reporting**. Project management-oriented IFRs will be prepared under the project. A full set of IFRs will be produced every quarter throughout the life of the project. The format of IFRs will be agreed before negotiations and incorporated into the FMM. These financial reports will be submitted to the Bank within 45 days of the end of each calendar quarter. The first quarterly IFRs will be submitted after the end of the first full semester following the initial disbursement.

23. **External Audit**. The audit of the project will be conducted by independent private auditors acceptable to the Bank, using International Standards on Auditing (ISA). The auditor will be engaged on a standard TOR acceptable to the Bank. Audit of the financial statements under the project will be included in the bulk audit of the whole portfolio of donor-financed projects in Kazakhstan. Procurement of such an audit is the responsibility of the Ministry of Finance. Cost of the audit is covered by the funds of the republican budget outside the project's costs. Sample

audit TORs will be agreed with the Bank and are to be attached to the FMM, and the annual audited project financial statements will be provided to the Bank within six months of the end of each fiscal year, and for the project also within six months of the closing of the project. If the period from the date of effectiveness of the loan to the end of the borrower's fiscal year is no more than six months, the first audit report may cover financial statements for the period from effectiveness to the end of the second fiscal year. The GoK will have to disclose the audit reports for the project within one month of their receipt from the auditors, by posting the reports on a website. Following formal receipt of these reports from the GoK, the Bank will make them publicly available according to Bank's Access to Information policy.

24. **Table below identifies the audit reports that will be required to be submitted by the CR, along with the due date for submission**.

Table 2. List of Audit Reports

Audit Report	**Due Date**
Project financial statements (PFS). The PFS include sources and uses of funds, uses of funds by project activity, DA reconciliation statement, SOE withdrawal schedule, and notes to the financial statements	Within six months of the end of each fiscal year and also within six months of the project's close
Continuing Entity financial statements	NA

25. **Disbursements and Flow of Funds.** The CR staff and supporting FM consultants have knowledge and experience in the Bank's disbursement procedures. The Project will follow traditional disbursement procedures. The disbursement procedures will be communicated in the Disbursement Letter that is an integral part of the legal package of the Project.

26. The CR will open and manage a designated account (DA) specifically for this project, in a Treasury that is now an acceptable financial institution for the Bank. The project account (PA) will also be opened in Treasury for transfer of GoK counterpart funding. Project funds will flow from (i) the Bank, either via DA, which will be replenished on the basis of documentation specified in the disbursement letter, or (ii) by using the direct payment method or the special commitment. Further details on this are provided in the disbursement letter. Both Loan and Counterpart funds will flow via the Treasury system and will be managed by the CR with support from the PMC.

Procurement

27. **Procurement activities will be carried out by the CR with the help of PMC**. In addition to the procurement process management, the KAZ/PMC will provide (a) administrative support for training, conferences, seminars, workshops, and study tours; (b) other project

communications and outreach support such as the project webpage, project newsletter, communications, advertisements, travel, basic office equipment, and bank charges.

28. The risk assessment rating for the entire project was done through Procurement Risk Assessment and Management System (P-RAMS). The CR implemented SWRP and EWRP totaling $3 billion. So far there are no major issues or delays in procurement. Identified risks and proposed mitigation measures are described in table 1 at the end of this section. The procurement risk is rated as moderate. The procurement risk is rated as moderate before mitigation measures and after mitigation measures are implemented, the residual risk would be low.

29. The procurement plan covering the first 18 months of the project period is under preparation by the CR. The procurement plan for the first 18 months includes procurement of the Works contracts and the Technical Assistance (TA) consultancy contracts (supervision, and other specific tasks). The procurement plan will be updated at least once per calendar year and each update will be subject to the Bank's prior review. The initial procurement plan together with the subsequent updates will be published on the Bank's external web site in line with the requirements of the Bank's guidelines. A general procurement notice covering the project procurement activities will be prepared and published by negotiations. Specific procurement notices will be published for all ICB and National Competitive Bidding (NCB) procurement, as well as for all consulting services contracts as required under the respective guidelines.

30. *Procurement of Works*: Road construction works contracts above US$20 million equivalent will follow ICB procedures. Works contracts below US$20 million equivalent will be procured under NCB procedures. The ECA sample NCB bidding documents shall be used taking into account the NCB conditions set forth in the financing agreement. All bidding documents and contracts will include measures to minimize or mitigate environmental and social impact and will take into account recommendations in the EMPs and other safeguard documents. The Bank standard bidding documents (SBD) shall be used for all ICB packages.

31. *Procurement of Goods*: Goods contracts above US$2 million equivalent will be procured under ICB procedures using the Bank's SBD for procurement of goods. The NCB method will be applicable for procurement of goods contracts with the estimated budget of less than US$2 million. The ECA sample NCB bidding documents shall be used taking into account the NCB conditions set forth in the financing agreement. Goods contracts with an estimated budget less than US$100,000 equivalent may be procured using shopping procedures on the basis of at least three written price quotations obtained from qualified suppliers. The list of suppliers to be invited to submit quotations should be defined by an evaluation committee.

32. *Selection of Consultants*: The methods for selection of consultants will include quality and cost based selections (QCBS), quality based selections QBS), fixed budget selection (FBS), least cost selection (LCS), selection based on consultants qualifications (CQS) (up to US$300,000), single source selection (SSS) in compliance with paragraph 3.8 of the World Bank's Consultant Guidelines, and individual consultants (Ics). Contracts estimated to cost above US$300,000 equivalent will be advertised through United Nations Development Business (UNDB), the Bank's website, and local media (one newspaper of national circulation or the official gazette, and CR's website). Shortlists of consultants for services estimated to cost less than US$500,000

equivalent per contract may be composed entirely of national consultants under the provisions of paragraph 2.7 of the World Bank's Consultant Guidelines.

33. *Operating Costs*: The expenses of the CR PMC would include communications, translation/interpretation, bank charges, office supplies, cost of advertisements, mail and business trip expenses of GoK officials and other experts. Such costs will be financed by the project based on the annual budget prior reviewed and agreed by the Bank. Purchases will be carried out in accordance with the implementing agency's internal administrative procedures. Operating costs will not include salaries or allowances of civil servants.

34. *Training and Study Tours*: Training and study tours will be carried out based on the annual training/study tours program and budget to be prepared by the CR and reviewed and agreed by the Bank. The institutions for training/study tours would be selected considering the availability of such services, duration of training/study tour, and reasonableness of cost.

35. *Governance and Anti-Corruption Action Plan (GAC):* The project will follow the World Bank Group's anti-corruption policies as set forth in the "Guidelines: On Preventing and Combating Fraud and Corruption in Projects financed by IBRD Loans and IDA Credits and Grants (current edition)." The Bank team intends to maintain close oversight and will carry out prior review of all major contracts according to the thresholds that will be regularly reviewed and adjusted as needed in the procurement plan. The following measures will be carried out to mitigate corruption risk:

36. *Training of fiduciary staff* starting from project launch and periodically thereafter; training will be customized to the procedures and methods that would be required for the next 12 month period. The relevant project staff shall attend the Central Asia Regional Procurement Workshops organized by the Bank on a regular basis.

37. *Prior review.* There will be close supervision by the Bank's procurement accredited staff. *Publication of advertisements and contracts.* All publication of advertisements and contract awards, including the results of the awards, will be done in accordance with the Procurement Guidelines and published in the World Bank Client Connection system and on external websites—UNDB and World Bank websites.

38. *Debarred firms.* Appropriate attention will be given to ensuring that debarred firms or individuals—to be verified from the Bank's external website—are not given opportunities to compete for Bank-financed contracts.

39. *Temporarily suspended firms.* Appropriate attention will be given to ensuring that temporary suspended firms or individuals—to be verified through Client Connection—are not given opportunities to compete for Bank-financed contracts.

40. *Complaints*. All complaints by bidders will be diligently addressed and monitored in consultation with the Bank.

41. *Tender committee.* All members will be required to sign a confidentiality/impartiality and conflict of interest form.

42. *Monitoring of contract awards.* All contracts are required to be signed within the validity of the bids/proposals and, in case of prior review contracts, promptly after the Bank's 'no objection' is issued. Procurement plan format shall include information on actual dates (of 'no objections' and award) and will be monitored for cases of delay which will be looked at on a case-by-case basis to identify the reasons. The CR will maintain up-to-date procurement records available to the Bank staff and auditors.

43. *Monitoring of payment vs. physical progress.* Monitoring reports prepared for the CR will be customized to include a form to monitor physical progress compared to payment installments to avoid upfront-loaded payments.

44. *Timeliness of payments.* The CR will maintain a system/database to ensure payments to the suppliers and contractors are paid without delay according to the conditions of the contract.

Table 1. Summary of Procurement Risk Assessment

Risk	Rating Before	Mitigation	Rating After
CR not deploying staff with adequate capacity to undertake the proposed procurement work under the project, particularly regarding World Bank procurement guidelines.	Moderate	Qualified procurement consultant will provide on-the-job training to CR staff and to bid evaluation committee members. Consultant will provide assistance in the preparation of bidding documents, bid evaluation reports, and contract agreements. Training in procurement under World Bank guidelines will also be provided by Bank staff during the project launch workshop.	Low
Bid evaluation committee members (and internal approval authorities) are not fully familiar with international procurement procedures, and may obstruct or delay the procurement process, especially the evaluation of bids and proposals.	Moderate	Consultant will provide assistance in the preparation of bidding documents, bid evaluation reports, and contract agreements. The risk may continue to be moderate as some of the evaluation committee members may be replaced by new staff. So far in SWRP and EWRP, we did not face any issues.	Low
Lack of awareness of procurement opportunities available in the project for works, goods and services.	Moderate	Carry out public awareness programs using various media, such as newspapers, brochures, radio, TV, and project website. Business outreach for contractors was conducted during August 2015.	Low
Average Risk	Moderate		Low

45. *Frequency of procurement supervision.* Initially, procurement supervision will include prior review of contracts and procurement implementation support missions (part of project supervision missions) once every six months. Once the capacity of the implementing agency is strengthened, frequency of procurement supervision missions and prior review thresholds may be revised.

46. *Post review*. 20 percent out of all contracts not subject to prior review will be post reviewed. This will include a number of shopping contracts.

47. Prior review thresholds will be set up in the project procurement plan and will be generally based on the following requirements:

- All works contract awarded through ICB and NCB where estimated cost more than US$15 million and first NCB contract.
- All goods contract awarded through ICB and NCB where estimated cost more than US$3 million and first ICB and NCB contract.
- All consulting contracts for firms costing US$1 million or more and contracts with individual consultants estimated to cost US$300,000 equivalent or more. The individual consultancy contracts for procurement and legal services shall also be prior reviewed
- All direct contracts (estimated cost more than $80,000) and single-source contracts (estimated cost more than $10,000).
- Contract amendments of prior review contracts are subject to the Bank's prior review as detailed in Appendix 1 of Procurement and Consultant Guidelines.

48. The prior review thresholds will be periodically reviewed and revised as needed during project implementation based on risk assessment, procurement post-review reports, and capacity of the implementing agency.

49. *Disclosure*. The following documents shall be disclosed in the CR website: (i) procurement plan and updates, (ii) invitation for bids for goods and works for all ICB and NCB contracts, (iii) request for expression of interest for selection/hiring of consulting services, (iv) contract awards of goods and works procured following ICB/NCB procedures, (v) list of contracts/purchase orders placed following the shopping procedure on quarterly basis, (vi) short list of consultants, (vii) contract award of all consultancy services, (viii) list of contracts following direct contracting (DC), CQS, or SSS on a quarterly basis, (ix) monthly physical and financial progress of all contracts and (x) action taken report on the complaints received on a quarterly basis.

50. The following details shall be sent to the Bank for publishing (or published through client connection) in the Bank's external website and to UNDB: (a) invitation for bids for procurement of goods and works using ICB procedures, (b) request for expression of interest for consulting services with estimated cost more than US$300,000, (c) contract award details of all procurement of goods and works using ICB procedure, (d) contract award details of all consultancy services with estimated cost more than US$300,000, and I list of contracts/purchase orders placed following SSS, CQS, or DC procedures on a quarterly basis.

Environmental and Social (including safeguards)

51. **KAZ has built its capacity on safeguards through implementing projects financed by the World Bank** and other international development institutions such as ADB and EBRD. Staff of KAZ, who earlier worked for the CR have proven experience of implementation of WB projects and also have good general understanding of safeguards policies.

52. **Organizational structure of KAZ includes main office in Astana and 14 affiliated departments in each oblast**. Staff of the oblast departments of KAZ, which were/are involved in implementation of the on-going EWRP and SWRP also have understanding of basic requirements of safeguards policies. As key project implementation agency KAZ will have to rely on environmental and social specialists, who will be integrated into one of the departments of the central office of KAZ, or be hired by KAZ either individually or as part of external entity contracted for project implementation. It is important that the function of permanent supervision of safeguards (both environmental and social aspects) is maintained by KAZ through its Safeguards Unit.

53. **The Safeguards Unit will be subordinated to KAZ and will play the role of a focal point on safeguards for the whole corridor**. The Safeguards Unit will: (a) supervise the compliance with safeguards requirements along all Corridor through regular review of periodic (monthly) reports from Supervision Engineers, queries from PAPs (received by *akimats*, or other contractors) and other relevant documentation (e.g. licenses for borrow pits, permits for water abstraction and discharge, permits for waste disposal, etc.), (b) conduct regular (quarterly) inspections/field visits at all project locations, and (c) provide regular updates on compliance with safeguards requirements by contractors to KAZ and the WB. The Safeguards Unit will interact with environmental and social specialists of Supervision Engineer, oblast departments of K–Z - on specific problem issues of implementation (within the competence of KAZ), and oblast *akimats* and/or other agencies of oblast lev–l - on specific problem issues of implementation.

54. **Representatives of oblast departments of KAZ, *akimats* and other oblast authorities will be organized in an Oblast Working Group** to facilitate implementation of the project broadly at oblast level. Regarding safeguards - this working group will interact with Safeguards Unit of KAZ, contractors and supervision engineers on specific problem issues of incompliance with safeguards requirements when engagement and support from local authorities is required.

55. **Contractors and Supervision Engineers should have permanent (12 man/months a year) positions** for locally recruited staff to work on specific lots/sections of the road. Qualification requirements will include special education (environment, civil engineering, social science), experience of on-site supervision of projects. Given that involvement of expat staff for positions of environmental and/or social specialists is both costly and does not secure continuity of supervision it is recommended that contractors and supervision engineers rely on local specialists with relevant expertise.

56. **It is expected that social consultant will conduct monitoring of the land acquisition process strictly following provisions of the RPF/RPF**. The monitoring data will be further submitted as part of the regular monitoring reports to KAZ. The consultant will also need to review and maintain a copy of the logs for submitted and resolved grievances of the local population along the road corridor.

57. **For the purposes of on-site monitoring of environmental parameters (water quality, air quality, etc.) contractors will sub-contract a licensed company** with relevant expertise and sampling/laboratory equipment. Monitoring results will be communicated to Supervision Engineer on a regular basis.

58. **The Project will cooperate with Association for the Conservation of Biodiversity of Kazakhstan**. The proposed route might cross the migration routes of Saiga tatarica, an endangered species of the antelope. Should this be the case, site-specific EMPs shall contain mitigation measures to avoid or minimize environmental impact on Saiga. The association has agreed to collaborate with the Client and their contractors and make an input to site –specific EMPs in relation to Saiga impact mitigation.

Monitoring & Evaluation

59. **Impact Evaluation.** The team will apply for the Impact Evaluation (IE) grant to evaluate impact of the corridor through answering the following primary and secondary questions:

Primary questions:

- What is the impact of the transit corridor on household income, employment and wellbeing?
- What is the impact of the corridor on small business and SME activities along the way?
- What is the impact of the corridor on accident rates and health burden?
- Does the corridor reduce transport cost and time?
- Does the corridor trigger migration?

Secondary questions:

- Does the RSP and awareness campaign reduce accidents and decrease health burden?
- Do the trading and service areas increase small business activities and household wellbeing?
- Do access roads and bus stops increase small business activities, household wellbeing, and utilization of public transport?
- Does the corridor divert traffic flow from other routes?
- Are there heterogeneous effects on any of these dimensions by region, age, sex, etc.

Provided the grant is secured for the Impact Evaluation, the following IE methods will be used:

- IE design 1: A combination of difference in difference and propensity score matching for the corridor
- IE design 2: A randomized controlled trial for the subsidiary/access roads (RCT) and bus stops (phase in)
- IE design 3: A randomized controlled trial for the road safety awareness and education campaign (phase in)
- IE design 4: A randomized controlled trial for the trading and service areas (RCT) and business training (phase I)

Provided the grant is secured for the Impact Evaluation, data for impact evaluation of the corridor development program will be collected in four distinctive periods:

1. Before the construction of the corridor (2016): 2 rounds of baseline
2. Before completion of the corridor construction (2020)
3. Half year after completion to measure short term effects (2021): 2 rounds of end-line

4. After two years to measure long term effects (2023)

Data will be collected from households, SMEs, hospitals/clinics, administrative and traffic monitoring units.

Role of Partners (if applicable)

60. **The project is included in the Partnership Framework Arrangement (PFA) signed between the GOK and participating IFIs (the World Bank Group, ADB, EBRD, IsDB) in September 2014**. The PFA supports the GOK's efforts towards sustainable development, economic diversification, and inclusive growth. The Center West Regional Development Corridor project falls within the umbrella objectives for "Attracting Investment into the Economy and Development of Public-Private Partnerships", and specifically includes the reconstruction of Center West corridor, between Astana and Beineu. The PFA also envisages the participation of other IFIs (ADB, EBRD, and IsDB) under the scheme similar to the one implemented along the Western China Western Europe International Transit Corridor.

61. **The ADB jointly with IsDB is currently preparing a project to finance in parallel to the Bank-financed project the rehabilitation of a 460 km long section connecting Aktobe to Makat** of the Center West Corridor. The existing Aktobe–Makat road is a two-lane, category III/IV republican road constructed about 30 years ago, which connects the oil and mineral-rich provinces of Aktobe and Atyrau, where approximately 1.7 million people live. As a result of neglected and improper maintenance, the deteriorated road pavement as well as bridges and culverts are unfit for the rapidly rising and heavy traffic loads generated by the oil wells and refineries in the region. Road safety hazards on this section are a direct result of these conditions. More and more traffic between Aktobe and Atyrau are diverting to the northern Aktobe-Oral-Atyrau route, as it takes almost the same travel time despite an additional 500 km detour. ADB and IsDB are also planning to finance non-physical activities such as: (i) promoting road safety awareness and improving the CR and KAZ's road safety management capacity and (ii) smart highway initiative. The project outcome will be improved road connectivity and mobility between Aktobe and Artyrau, and impact will be enhanced regional cooperation and inclusive economic growth in Kazakhstan, particularly in the Atyrau and Aktobe oblasts.

62. **The ADB has also allocated financing for the reconstruction of 470 km Aktau-Beineu road section, which is also a part of the Center West Corridor, through its Multitranche** Financing Facility totaling US$800million. Today a first tranche, 240km of a 300 km of Beineu-Shetpe section has been completed and is open to traffic. A second tranche, works on a 170 km long Shetpe-Jetybay-Aktau section started in 2014 with works ongoing.

63. The proposed project complements efforts of the Central Asian countries described in the on-going Transport and Trade Facilitation Strategy and Action Plan for 2008-2017 endorsed by the Central Asia Regional Economic Cooperation (CAREC). This strategy foresees the rehabilitation of six strategic transport corridors in the Central Asia region based on their impact on economic growth and poverty reduction as highlighted by the CAREC program 2011-2020. The program has the aim to expand trade and improve competitiveness by developing "economic corridors" as well as improve trade facilitation. The CAREC countries

have designated six major transport corridors, four of which transit through Kazakhstan (Annex 2). The proposed project is linked to CAREC corridors 1, 2, and 6.

64. **Implementation of the EWRP and SWRP has provided valuable experience to GOK and participating IFIs regarding design and implementation considerations that are needed to take into account in Kazakhstan.** Cooperation between the GoK and the various IFIs has been fruitful in terms of preparation of various ongoing projects (e.g., a common set of safeguards documentation and similar procurement methods) and implementation arrangements (e.g., common Project management consultants). In particular the Western China Western Europe corridor as a sum of highway tranches connecting agglomerations and second-tier cities and rural towns with each other, had a great impact on the living standards of the population by enhancing access to basic services and providing labor and commercial opportunities (more than 30,000 jobs created). In this sense, the proposed CWP, viewed from a local perspective, can be a key mechanism for regional convergence, and an important mean for diminishing inequalities among rayons and oblasts within Kazakhstan. Thanks to the experience gained on implementation of civil works along the Western China Western Europe corridor, the Borrower is expected to manage the component 1 of the project (mainly civil works) without much difficulty and will be able to focus on institutional development and regional development (components 2, 3 and 4) from the early start of the project implementation.

65. **Based on the SWRP and EWRP experience, the Bank is well placed to play the convening role in coordinating the participation of the IFIs in undertaking the large investment required to develop the Center West Regional Development Corridor.** This will ensure that: (i) uniform technical standards will be applied; (ii) there is a common framework for environment and social safeguards; and (iii) appropriate technical assistance will complement the investments and institutional strengthening. This large program of proposed investments for the corridor will take several years to implement and will require the integration of the fiduciary and safeguards standards of Kazakhstan with that of the IFIs.

Annex 4: Implementation Support Plan

KAZAKHSTAN: Center-West Project

Strategy and Approach for Implementation Support

1. The strategy for implementation support would build on the experience gained during preparation and implementation of the ongoing SWRP and EWRP. The magnitude of the investment calls for support by the Bank and effective and robust management at the MoID and the CR. Given the acquired experience and sufficient fiduciary capacity to implement the Project, KAZ would be contracted by CR as a PMC and, given the nature of the Project that cuts across several areas, additionally supported by consultants hired from the Loan proceeds to provide interagency collaboration and task-related support to other participating agencies. The individual consultants will be competitively selected upon agreement between the MoID (CR) and the Bank.

2. ***Civil Works:*** The Project Team will conduct field trips at least 2 times a year to review the quality of the civil works. The Bank team will comprise an engineer, an environment specialist and a social development specialist. The review will be based on the Performance Assessment Tool developed by the Bank project team and already applied under the SWRP and EWRP.

3. ***Procurement:*** Implementation support led by the senior procurement staff based in the field will include: (a) review of procurement documents and provision of feedback to the CR and KAZ; (b) provision of guidance on the World Bank's Procurement Guidelines; and (c) monitoring procurement progress against the procurement plan. Two supervision missions will take place every year, during which ex-post reviews will be conducted for the contracts that are not subject to Bank prior review.

4. ***FM***: As part of its implementation support missions, the Project
Team will conduct risk-based FM supervisions, initially every six months during the first year and thereafter at appropriate intervals, depending on the level of assessed risk. The focus will be on: (i) project accounting and internal control systems; (ii) budgeting and financial planning arrangements; (iii) review of IFRs; (iv) review of audit reports, including financial statements and remedial actions recommended in the auditor's Management Letters; and (v) disbursement management and financial flows and counterpart funds.

5. ***Safeguards:*** Based on the experiences of the SWRP and EWRP and due to the Project's category 'A', senior level safeguard staff will join the field visits on a regular basis. The Project will ensure continuous engagement of the public and NGOs (participation at public consultations), and include civil works inspections during implementation.

6. ***Monitoring and Evaluation:*** The CR will retain the responsibility of monitoring and evaluation activities of the proposed Project with support of KAZ using the pattern that is already in place and is functioning properly. The Bank (the Project team) also will work closely with the country counterparts to measure project's long terms results including impacts on household welfare, employment, investment and enterprise activity and poverty alleviation.

Implementation Support Plan

7. About 50 percent of the staff in the Project Team is based in Kazakhstan's Country Office or in the country offices in the region. This will ensure timely, efficient and effective implementation support to the KAZ and CR. There will be about 4 implementation support missions per year, of which 3 will include site visits. Operational and technical staff located in the Country Office will provide the daily interaction with the MoID/CR and KAZ. The practice to interact regularly with the CR/KAZ via audios will also be retained in the Project.

8. ***Technical inputs:*** The team's engineer located in Astana will conduct site visits on demand when necessary—in addition to the 4 missions every year. Engineering inputs will also be required to review bid documents, technical specifications, etc. During construction and commissioning, technical supervision will be warranted to ensure technical contractual obligations are met.

9. ***Fiduciary requirements and inputs:*** Regular advice to KAZ (PMC) and CR of the Bank's FM and procurement specialists will be available as per the practice established during implementation of the SWRP and EWRP. Both the FM and the procurement specialists are based in the country office. Additional support from the Headquarters and Almaty will be available in these areas. Formal support for FM and procurement will be carried out semi-annually.

10. ***Safeguards:*** Inputs from a senior environmental specialist and a senior social specialist will be available throughout the implementation. They will provide regular support to the CR and KAZ through monitoring of social and environmental issues and during implementation support mission.

11. ***Interagency coordination:*** Under the Project, there will be an Inter-agency Working Group (IWG) chaired by the Minister of Investments and Development and comprised of high level representatives of participating agencies. The IWG will meet at least twice a year and will assess progress in Project implementation, address issues, and develop proposals on improving Project efficiency. The Bank representative (Project Team) will regularly join the meetings of the IWG to provide necessary support.

12. The Bank's implementation support is summarized as follows:

Time	**Focus**	**Skills Needed**	**Resource Estimate**
First twelve (12) months	Task leadership	Task Team Leader	16 wks
	Procurement Support for Component 1	Procurement Specialist	5 wks
	Construction supervision	Engineer	8 wks
	Procurement Support for	Procurement Specialist	1 wks
	Technical Review of Component 4	Transport Specialist	2 wks

	Safeguard review and supervision	Senior environmental specialist Senior social development specialist	6wks 6 wks
	FM capacity building and supervision	FM Specialist FM Analyst	2 wks 4 wks
	Implementation support	Operations Officer	20 wks
12-48 months	Task leadership	Task Team Leader	30 wks
	Oversight of construction Supervision	Engineer	25 wks
	Procurement support, supervision and training	Procurement Specialist	8 wks
	Technical Review of Procurement Support for Components 2-4	Transport Economist (regional transport development) Engineer Transport Specialist (road safety)	8 wks 4 wks 8 wks
	Safeguard review and supervision	Senior environmental specialist Senior social development specialist	12 wks 12 wks
	FM capacity building and supervision	FM Specialist FM Analyst	4 wks 10 wks
	Implementation support	Operations Officer	60 wks

13. The Borrower's entities responsible for the Project are:

Name	**Institution/Country**	**Role**
MoID	Ministry of Investments and Development/ Republic of Kazakhstan	Implementing agency
CR	Roads Committee/Government agency/Republic of Kazakhstan	Project budgeting, management and implementation
JSC KazAvoZhol	National roads operator/ Republic of Kazakhstan	Project Management Unit

Annex 5: Economic Analysis and Review of Pre-feasibility Report

1. The pre-feasibility study carried out by the government explored 6 alignment options and the review of the prefeasibility study showed that the alignment 1, 4, and 5 are economic viable (details of this assessment are also included at the end of this annex). In particular, alignment 4 and 5 yield more benefit to the less developed area and provide a great opportunity for regional development.

2. Based on conclusions of the pre-feasibility study and consultations with local communities and businesses, the feasibility study built on the original alignment 4 and 5 in the pre-feasibility study, and further considered three alternative alignment options. All these three alternatives traverse the center of the country from Astana to the west connecting Zhanteke, Arkalyk, Turgai, and Akshiganak (733 km). Then the three alternatives become different: one alternative connects to the existing corridor M-32 (Western Europe- Western China) passing via Yrgyz. Another alternative starts at Akshiganak and envisions construction of a 207 km road section connecting to M-32 at Karabutak. The last option is to construct of a new road from Yrgyz to Shalkar and also reconstruction of the existing section from Shalkar up to Kadyagash. This last option is the chosen one by the GoK. The map of the Project alignment is presented in Annex 8.

3. The Bank intends to finance road sections of about 890 km spanning from Astana to Yrgyz (20 km to the west of Yrgyz up to the junction with the WE-WCH corridor). If the required budget becomes available, the project might finance another road section further west to Shalkar (127 km), to be confirmed at negotiations. The improvement of the project roads is expected to start in 2016 with the exception of the Arkalyk – Amangeldy road section that is expected to be rehabilitated in 2020. Table 1 presents the basic current characteristics of the roads sections to be financed by the project. The current roads are in a flat terrain and are either Class IV or Class III roads in very poor condition. The roughness for each road section was estimated based on the current conditions of road sections reported by the Committee for Roads and recorded during the feasibility assessment. The project will improve the roads to Class II asphalt roads, except for the section from Astana to Zhanteke proposed as concrete by the feasibility study.

Table 1: Existing Road Sections Characteristics

Road Section	Road Class	Length (km)	Road Width (m)	Surface Type	Roughness (IRI)	Speed Limit (km/hr)
Astana –Zhanteke	III	79.8	7.0	Asphalt	8	100.0
Zhanteke – Egindykol	IV	70.2	6.0	Macadam/Top-Soil	14	80.0
Egindykol – Arkalyk	IV	239.7	6.0	Macadam/Top-Soil	16	80.0
Arkalyk - Amangeldy[11]	III	122.6	7.0	Asphalt	4	100.0
Amangeldy – Turgai	III	146.7	7.0	Asphalt/Top-soil	14	100.0
Turgai – Nura	IV	163.3	6.0	Asphalt/Top-soil	14	80.0
Nura - Yrgyz (WE-WCH)	IV	66.5	6.0	Macadam/Top-Soil	16	80.0
Yrgyz (WE-WCH) – Shalkar	IV	127.2	6.0	Macadam/Top-Soil	16	80.0

[11] The section is currently under repair from oblast budget and is planned to be rehabilitated in 2020 from the republican budget (to be confirmed at negotiations).

Total	1,016.0

4. The GoK plans to rehabilitate the entire corridor further up to Kandyagash (the section Shalkar-Kandyagash is planned to be rehabilitated with ADB financing).The entire corridor from Astana to Kanhdygash (Aktobe) will be around 1,260 km total. The eastern end of the corridor financed by the Bank will directly connect around 87,000 of rural population currently living along the corridor (Astana population excluded). Many of the settlements along the corridor are considered lagging and are in need of economic stimulus. If the corridor is completed up to Kandyagash, another 84,000people in settlements along the road will be better connected with the two regional growth centers Astana and Aktobe.

1. Evaluation of Traffic Demand

5. Traffic forecast was conducted based on available traffic data on the existing sections, however, lacking origin-destination data. The traffic demand assessment follows the approach described below:

1.1. Annual traffic growth rate based on the estimated annual GDP growth rate in Kazakhstan from 2106 to 2020 given by the IMF[12]; this was estimated based on elasticity with respect to annual GDP growth of 1.3. The average annual GDP growth rate from 2016 to 2020 is predicted to be 4.2 percent per year, thus the assumed annual traffic growth during this period is 5.5 percent per year, reducing to 4.0 percent per year afterwards.

1.2. Forecasts of locally generated traffic as a result of the road improvements and reduction in road user costs; this was estimated based on elasticity with respect to travel time of -0.5[13] at each road section. Savings of travel time were estimated using HDM-4, referring to a relationship between travel speed and road conditions. Generated traffic is expected to vary between 27 and 85 percent of the normal traffic among the project road sections.

1.3. Forecasts of induced traffic between pairs of settlements along the route and the two regional centers at both ends of the assessed alignment. It is expected that induced traffic will occur once connectivity is improved. Vehicle trips per day for these origin-destination pairs along the corridor were estimated after taking into account the population in each province and the distance of each trip, using relationships developed in Australia for similar types of trips and after adjusting for the difference in vehicle ownership.

1.4. Forecasts of long-distance diverted traffic from existing alternative roads with the same origin and destination of the project corridor. Given lack of data on origins and destinations for domestic and international traffic, the assessment of long-distance traffic diverting from the existing roads was based on the current volumes of traffic flows on the existing road corridor Astana-Kostanay-Karabutak-Aktobe and expected growth of normal traffic before the project is implemented. This traffic includes long-distance domestic

[12] IMF World Economic Outlook Database April 2015.

[13] Based on analysis of local travel in Australia under similar settlement patterns and road conditions. A reduction in travel time of 20% would thus generate an additional 10% of traffic on the road.

traffic between Eastern and Western regions of the country and existing international flows on a representative road section with possible pair of origin-destination of traffic in Astana and Aktobe. Traffic projection at the sections from Astana to Arkalyk also included diverted trips from the existing road Astana-Atbasar-Dzerjavinsk-Arkalyk. It was assumed that 20 percent of the alternative roads traffic will divert to the project roads[14].

6. Table 2 presents the current traffic on the project roads and the estimated traffic in 2020 once the project improvement works are completed. On average, the project roads will carry around 2,003 vehicles per day in 2020.

Table 2: Road Sections Traffic

Road Section	2015 Traffic (AADT)	2020 Traffic Normal (AADT)	Generated (AADT)	Induced (AADT)	Diverted 1 (AADT)	Diverted 2 (AADT)	Total (AADT)
Astana –Zhanteke	2,100	2,745	752	197	229	292	4,215
Zhanteke – Egindykol	1,000	1,307	956	197	229	292	2,981
Egindykol – Arkalyk	500	653	554	197	229	292	1,926
Arkalyk - Amangeldy	1,000	1,307	0	55	0	292	1,654
Amangeldy – Turgai	1,000	1,307	955	55	0	292	2,609
Turgai – Nura	250	327	236	55	0	292	910
Nura - Yrgyz (WE-WCH)	100	131	114	55	0	292	592
Yrgyz (WE-WCH) - Shalkar	100	131	114	55	0	292	592
Average	759	992	502	117	100	292	2003

Diverted 1: Astana to Arkalyk

Diverted 2: Astana-Kostanay-Aktobe-Kandagash

Arkalyk – Amangeldy is expected to be rehabilitated in 2020

2. **Road User Costs.**

7. The economic analysis accounts for costs and benefits associated with the project. They include the cost of construction/upgrading each of the road sections, as well as maintenance and periodic repair costs; vehicle operating costs for existing and generated/induced/diverted traffic, costs associated with travel time and CO^2 emission with and without the project. Vehicle operating costs were estimated using HDM-4 and country-related input data. The table 3 presents the vehicle fleet characteristics adopted for the evaluation.

Table 3: Vehicle Fleet Characteristics

	Car	Large Bus	2 Axle Truck	3+ Axle Truck
Financial Costs				
New vehicle price (US$)	12,000	140,000	30,000	50,000
Replacement tire (US$)	25.64	176.28	160.26	160.26
Fuel/liter (US$)	0.37	0.34	0.34	0.34
Lubricant/liter (US$)	9.62	9.62	9.62	9.62

[14] The traffic estimates were based on the lowest traffic volumes, since it differs significantly at road sections of the existing alternatives, and present conservative traffic forecast.

Maintenance labor costs (US$/hour)	1.81	1.81	1.81	1.81
Crew costs (US$/hour)	0.00	3.02	3.02	3.02
Annual interest (%)	12.00	12.00	12.00	12.00
Passenger working time (US$/hour)	6.05	4.04	0.00	0.00
Passenger non-working time (US$/hour)	1.81	1.21	0.00	0.00
Cargo delay time (US$/hour)	0.00	0.00	2.50	2.50
Basic Characteristics				
Annual Vehicle km	18,000	80,000	60,000	60,000
Annual Working hours	300	1333	1000	1000
Vehicle life (years)	10	10	14	14
Passengers	2	40	0	0
Gross Vehicle Weight (ton)	1.6	16.5	15.2	21.3
ESA Loading Factor	0.00	0.80	1.25	4.63

8. Based on traffic flows data from control arches installed on republican road network, the following composition of traffic was assumed in the analysis: 60% cars, 1% heavy bus, 19% 2 axle trucks and 20% 3-axle or more trucks. Bus passenger's time costs were based on average values of US$ 4.04/hour and US$ 1.21/hour for work and non-work time respectively. The table 4 presents the average unit road user costs, in US$ per vehicle-km, for the without and with project scenarios.

Table 4 Unit Road User Costs (US$ per veh-km)

		Car	Large Bus	2 Axle Truck	3+ Axle Truck
Without Project (16 IRI)	Vehicle Operating Costs	0.23	1.19	0.50	0.91
	Travel Time Costs	0.13	3.85	0.07	0.08
	Road User Costs	0.36	5.04	0.57	0.99
With Project (2 IRI)	Vehicle Operating Costs	0.16	0.58	0.31	0.58
	Travel Time Costs	0.05	1.54	0.03	0.03
	Road User Costs	0.21	2.13	0.33	0.60
Savings (percent)	Vehicle Operating Costs	30%	51%	39%	36%
	Travel Time Costs	64%	60%	58%	69%
	Road User Costs	42%	58%	41%	39%

9. The estimation of economic implications from the change in CO^2 emissions with the project were included on the economic evaluation based on a unit cost of CO^2 emissions of US$ 30 per ton of CO^2 increasing by 3 percent per year.

3. **Construction and Maintenance Costs.**

10. Based on the data available for the SWRP and preliminary estimated unit costs by the feasibility study, average unit costs for construction and rehabilitation, (see Table 5) adjusted for the exchange rate were adopted in the analysis. Possible variations from the average are accounted in the sensitivity analysis. Road maintenance costs of the upgraded road sections are based on the allocated republican budget per km of a 2-lane road for maintenance and periodic repairs.

Table 5: Unit Costs for Construction and Maintenance Used in Evaluation

Type of works	Cost per unit US$ million per km[15]
Construction/Rehabilitation of a 2 lane road, asphalt	0.90
Widening from 2 to 4 lane road, concrete	2.00
Maintenance cost, annual for 2 lane road	0.005
Repair cost for 2 lane-km	0.036

11. The table 6 presents the estimated financial costs of the improvement works for each project road section. Economic costs, net of taxes and subsidies, were estimated to be 80 percent of the financial costs. The road section Astana – Zhanteke will be widened to four lanes with Class 1b standards, and the rest of road sections will stay (or construct) as two lanes and be upgraded to Class II standards.

Table 6: Road Works and Costs

Road Section	Road Work	Financial Cost (M US$)	Financial Cost (MUS$/km)
Astana –Zhanteke	Widening to 4 Lanes	159.4	2.00
Zhanteke - Egindykol	Rehabilitation and New Construction	63.3	0.90
Egindykol - Arkalyk	Rehabilitation and New Construction	216.0	0.90
Arkalyk - Amangeldy	Rehabilitation in 2020	110.5	0.90
Amangeldy - Turgai	Rehabilitation and New Construction	132.2	0.90
Turgai – Nura	Rehabilitation and New Construction	147.1	0.90
Nura - Yrgyz (WE-WCH)	Rehabilitation and New Construction	59.9	0.90
Yrgyz (WE-WCH) - Shalkar	Rehabilitation and New Construction	114.6	0.90
Total		1,003.0	0.99

4. Economic Evaluation Results.

12. The economic evaluation was done for the entire corridor from Astana to Shalkar. The evaluation considered road agency costs, normal, generated and induced traffic road user costs and CO^2 emissions costs, evaluated during an evaluation period of 25 years at a discount rate of 5 percent. The table 7 presents the economic evaluation results for each road section and the project as a whole. The overall Economic Internal Rate of Return (EIRR) of the project is 15.6 percent and the NPV is US$ 1,054 million, at 5 percent discount rate. A sensitivity analysis show that the NPV reduces to US$ 183 million at 12 percent discount rate.

Table 7: Economic Evaluation Results

Road Section	EIRR (%)	NPV at 5% (US$ M)	NPV at 12% (US$ M)
Astana –Zhanteke	17.9%	208	49
Zhanteke – Egindykol	25.6%	141	47
Egindykol – Arkalyk	19.7%	359	96

[15] Averaged unit costs based on the analysis of existing civil works contracts under SWRP, as well as aggregated estimates by feasibility study were used in evaluation, estimated in 2015 US$ equivalent.

Arkalyk – Amangeldy	13.9%	85	8
Amangeldy – Turgai	20.7%	204	59
Turgai – Nura	9.2%	56	-19
Nura - Yrgyz (WE-WCh)	5.1%	0	-19
Yrgyz (WE-WCh) - Shalkar	5.1%	1	-37
Total	15.6%	1054	183

13. Sensitivity analysis tested robustness of results of economic evaluation against changes in capital costs and traffic. Capital costs were increased by 20 percent. Road user benefits on the project roads after the improvement works were decreased by 20 percent. If capital works are increased by 20 percent and road user benefits are reduced by 20 percent, the overall EIRR of the project reduces to 10.5 percent (Table 8), confirming the satisfactory economic justification of the project. Switching values analysis shows that if capital costs increase by 156 percent the overall project EIRR becomes 5 percent.

Table 8: Sensitivity Analysis Results

	Base EIRR (%)	A: Costs 20% (%)	B: Benefits -20% (%)	C: A & B (%)
Astana -Zhanteke	17.9%	15.2%	14.7%	12.3%
Zhanteke - Egindykol	25.6%	22.0%	21.2%	18.1%
Egindykol - Arkalyk	19.7%	16.8%	16.3%	13.8%
Arkalyk - Amangeldy	13.9%	11.8%	11.3%	9.3%
Amangeldy - Turgai	20.7%	17.6%	16.9%	14.2%
Turgai - Nura	9.2%	7.5%	7.1%	5.5%
Nura - Yrgyz (WE-WCH)	5.1%	3.7%	3.4%	2.1%
Yrgyz (WE-WCH) - Shalkar	5.1%	3.7%	3.4%	2.1%
Total	15.6%	13.2%	12.7%	10.5%

5. GHG Emissions.

14. Carbon dioxide (CO^2) emissions are estimated based on aggregated composition of traffic, existing travel conditions, and possible impacts from project interventions.[16] The evaluation compares anticipated baseline without project emissions, when there are no project interventions, and with project scenario emissions. Baseline emissions are estimated from the existing traffic allowing for annual growth, while the with project scenario accounts for changes in emission levels of (i) the normal traffic, due to improved ride quality conditions and speeds; and (ii) the added generated and induced traffic with the project.

15. Table 9 presents a summary of the estimated CO2 emissions with and without the project in year 2020 and over the entire evaluation period (2016 to 2040). In year 2020, when the road improvement road works are completed, the total CO^2 emissions will increase from 193,969 tons without the project to 388,744 tons with the project (100 percent increase). Over the valuation period, the total CO^2 emissions will increase by 104 percent (from 6,566,697 tons without the project to 13,415,165 tons with the project), where the normal traffic accounts for 22 percent due to the increase in vehicle speeds and fuel consumption, and the generated and induced traffic

[16] Evaluation conducted using the HDM-4 model.

accounts for the reminding 82 percent. The increase in CO^2 emissions with the project is due to: (i) the increase in vehicle speeds of the normal traffic brought by the project[17] that increase the fuel consumption of the normal traffic and increase the corresponding CO^2 emissions; and (ii) the added generated and induced traffic with the project. Economic development brought by the project may allow the modernization of the vehicle fleet and the use of more fuel efficient vehicle, which will reduce the CO^2 emissions.

Table 9: CO^2 Emissions

Scenario		Year 2020	2016-2040 Evaluation Period
Without Project (tons)	Astana -Zhanteke	44,277	1,557,081
	Zhanteke - Egindykol	19,642	656,999
	Egindykol - Arkalyk	33,534	1,189,657
	Arkalyk - Amangeldy	38,479	1,186,879
	Amangeldy - Turgai	41,045	1,373,732
	Turgai – Nura	11,412	404,352
	Nura - Yrgyz (Junction M-32)	1,916	67,975
	Yrgyz (Junction M-32) - Shalkar	3,665	130,021
	Total	193,969	6,566,697
With Project (tons)	Astana -Zhanteke	79,239	2,676,602
	Zhanteke - Egindykol	43,373	1,453,027
	Egindykol - Arkalyk	102,404	3,401,100
	Arkalyk - Amangeldy	38,479	1,676,326
	Amangeldy - Turgai	85,334	2,869,139
	Turgai – Nura	25,340	851,613
	Nura - Yrgyz (Junction M-32)	5,004	167,317
	Yrgyz (Junction M-32) - Shalkar	9,571	320,041
	Total	388,744	13,415,165
Change (percent)	Astana -Zhanteke	79%	72%
	Zhanteke - Egindykol	121%	121%
	Egindykol - Arkalyk	205%	186%
	Arkalyk - Amangeldy	0%	41%
	Amangeldy - Turgai	108%	109%
	Turgai – Nura	122%	111%
	Nura - Yrgyz (Junction M-32)	161%	146%
	Yrgyz (Junction M-32) - Shalkar	161%	146%
	Total	100%	104%

16. The inclusion of the CO^2 emission cost on the economic evaluation affects slightly the economic evaluation results. Without CO^2 emission cost, the overall EIRR of the project increases marginally to 16.3 percent from the base 15.6 percent including CO^2 emissions costs in the evaluation. The table 10 presents the distribution of the project net benefits (NPV) indicating that the emission costs (US$ 93 million) represent 5.3 percent of the total road user cost benefits (US$ 1,737 million) derived from the normal, generated and diverted traffic.

[17] It is estimated that vehicle speeds will increase from around 45 km per hour to around 95 km per hour with the project.

Table 10: Net Benefits Distribution

	Agency Cost (US$ M)	Normal Traffic (US$ M)	Generated Traffic (US$ M)	Diverted Traffic (US$ M)	Emissions Costs (US$ M)	NPV (US$ M)
Astana -Zhanteke	-98	224	38	62	-18	208
Zhanteke - Egindykol	-36	93	40	55	-11	141
Egindykol - Arkalyk	-134	215	172	131	-27	359
Arkalyk - Amangeldy	-52	113	13	19	-8	85
Amangeldy - Turgai	-75	194	73	33	-20	204
Turgai - Nura	-91	73	32	47	-6	56
Nura - Yrgyz (WE-WCH)	-36	14	9	15	-1	0
Yrgyz (WE-WCH) - Shalkar	-69	26	17	28	-2	1
Total	-590	953	393	390	-93	1,054

6. Agglomeration benefits.

17. Recognizing that the above economic analysis based on a conventional Cost and Benefit Analysis for roads does not account for 'wider economic benefits', the analysis in this section is focused on quantifying "agglomeration effects". Transport-induced agglomeration increases business productivity, i.e. the productivity effects that arise from expansion of markets for inputs and products, better matching between producers and consumers, and improved learning and dissemination of knowledge through face-to-face communication, which leads to the improvements in competitiveness and innovation.

18. There is strong theoretical and practical support for the hypothesis that there can be significant benefits from transport projects that are not captured by conventional cost-benefit analysis. But there is no well-established and generally-accepted methodology for estimating these, although various approaches have been developed for specific applications. The most widely used is one developed by UK DfT (2006) based on a relatively simple partial equilibrium framework. This has been used to quantify the agglomeration benefits in a number of road and rail projects in the UK. This approach is based on a comparison of the economic mass with and without a transport project. The economic mass d_i^B for a given location is defined as

$$d_i^B = \sum_j \left\{ \frac{E_j^B}{\left(g_{ij}^B\right)^a} \right\}$$

where

i	Location of economic activity
j	Other locations in the region where other economic activity are located
g_{ij}^B	The generalized cost of travel from j to i, where B denotes 'Base Case', normally calculated as the conventional combination of cost and travel time. All the zone pairs ij can be considered in the calculation if appropriate.
E_j^B	A measure of economic activity. In the UK approach, the number of workers is used as this measure but as the units cancel out, regional GDP has been used

in this project.

a Distance decay parameter (normally taken as 1)

The economic mass of this location i increases if:

a. there is an increase in the level of economic activity in i, or the surrounding areas

b. there are decreases in the generalized costs of travel between i and j (especially where the economic activity level is high).

19. The generalized cost of travel has been derived from the estimated costs and times assumed in the demand forecasts. This was calculated for both the 'with-project' and 'without-project' cases; the latter allowed not only for the current transport network but also for any other improvements which would be made in the absence of the project.

The agglomeration benefits are calculated based on changes in economic mass for an Alternative Case (A) versus a Base Case (B), as

$$W^{A/B} = \sum_i \sum_k \left[\left[\left(\frac{d_i^A}{d_i^{B_0}} \right)^{\gamma_k} - \left(\frac{d_i^B}{d_i^{B_0}} \right)^{\gamma_k} \right] \times h_{i,k} \times E_{i,k}^A \right]$$

where

$W^{A/B}$	Agglomeration benefits for the Alternative Case (A) vs. the Base Case (B)
I	The location for which agglomeration benefits are being calculated
K	Industry sector
d_i^A, d_i^B	Economic masses of location i in for A and B respectively
$d_i^{B_0}$	Economic mass for the Base Year
γ	Productivity parameter with respect to economic mass (empirically estimated)
h_i	GDP per worker in I
E_i^A	Employment (in the Alternative Case A)

20. The above equations have been applied to the current project to demonstrate the potential magnitudes of the effects. The estimation of specific Kazakhstan parameters would involve extensive analytical work and the analysis in this annex instead uses a range of parameter values imported from studies in the UK and China. The distance decay parameter and productivity elasticity are considered as 1 and 0.05.These values are consistent with the consensus view from a comprehensive review of such evidence in the developed economies that 'doubling city size seems to increase productivity by an amount that ranges between 5 and 8%[18].

[18] See, for example, Rosenthal, S and WC Strange (2004). Evidence on the nature and sources of agglomeration. Review of Economics and Statistics, Vol 85, pp377-393.

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21. Table 11 summarizes the results. The impact on many of the small centers is low, typically increasing the EIRR by up to one percentage point and the NPV by a few million US$. However, the benefits for the Egindykol – Arkalyk link are relatively more significant, as this allows much shorter travel times between Arkalyk and Astana. The impact on Yrgyz-Shalkar section is also significant. The impact on the link between Nura and Yrgyz is more significant as well, although there is little local traffic on this route to receive user benefits, this is the final link which allows more direct routes between the major western cities and Astana, enabling the potential agglomeration benefits from the upgrading of the other sections to be actually realized. The impact on the link between Shalkar and Kandygash is primarily due to the improvement in the connectivity with Aktobe. Overall, the inclusion of agglomeration benefits increases the project EIRR to 16.1% and the NPV (discounted at 5% to 2015) to US$ 1124 million.

Table 11: Economic evaluation results with agglomeration

	Without agglomeration			With agglomeration		
Road Section	EIRR (%)	NPV at 5% (US$ M)	NPV at 12% (US$ M)	EIRR (%)	NPV at 5% (US$ M)	NPV at 12% (US$ M)
Astana –Zhanteke	17.9%	208	49	18.1%	213	51
Zhanteke – Egindykol	25.6%	141	47	25.8%	143	48
Egindykol – Arkalyk	19.7%	359	96	20.3%	385	106
Arkalyk – Amangeldy	13.9%	85	8	13.9%	85	8
Amangeldy – Turgai	20.7%	204	59	20.9%	208	60
Turgai – Nura	9.2%	56	-19	9.7%	63	-17
Nura - Yrgyz (WE-WCH)	5.1%	0	-19	6.8%	10	-16
Yrgyz (WE-WCH) - Shalkar	5.1%	1	-37	6.4%	15	-32
Total	15.6%	1054	183	16.1%	1124	210

REVIEW OF PRE-FEASIBILITY REPORT INTRODUCTION

1. The Government of the Republic of Kazakhstan (GoK) adopted on 13 January 2014, the State Program for the Development and Integration of Transport Infrastructure to 2020, (hereinafter called the SPDITI).

2. The objectives of the SPDITI are the formation of a modern transport system in Kazakhstan that:

a. increases the flow of freight through the country by properly integrating and linking the land, sea and air transport systems;

b. provides connectivity between regional cities and towns, and

c. allows for the creation of infrastructure centers[19] within regions.

3. The SPDITI reflects earlier technical reviews and inputs from IBRD into the Transport Sector Strategy 2020 and builds on the President's annual address dated January 17, 2014, describing the development of the highest priority road development corridors known broadly as the Centre South, Centre East and Centre West corridors. In this address the President indicated that the Centre West corridor, comprising a road transport corridor from Astana to the Caspian Sea port town of Aktau, commands a very high Government infrastructure priority.

4. According to the GoK, the Centre-West road corridor is intended to be mainly of a two lane standard (which indicates a well-grounded consideration of standards and costs), and also considered an expansion to 4 lanes through some critical urban locations. Tolling is also considered along some sections consistent with a broader tolling plan. The Centre-West corridor will be part of an overall network upgrade program that will also enhance existing links between Astana and Almaty (Centre South from Astana – Pavlodar – Semei – Kalbatau – Ust-Kamenogorsk) and between Astana and Ust-Kamenogorsk (Centre East from Astana – Pavlodar –Semei – Kalbatau – Ust-Kamenogorsk). The Government is aiming for completion of all the corridors by 2020.

5. In December 2013, Ministry of Transport (MoTC) and Committee of Roads (CR) officials conveyed to a Bank transport sector mission that Government wanted to start developing a first stage feasibility study for the planning and design development of the Centre West Corridor in order to consider starting works sometime in 2017. CR advised that under Kazakhstan legislation a feasibility study is not required for reconstruction of an existing road, but clearly appreciated that IBRD could assist in looking at a first stage feasibility concept which would assist them in determining the optimum route and viable development concepts, and also

[19] Infrastructure Centre is defined as a node that is suitable located to provide centralized services, i.e. health, education, legal and regional transport hubs.

that that such a study would definitely be required in the event that financing is sourced through IFIs[20]

6. It became clear during the mission discussions in December that a pre-feasibility study on the corridor is required, as it could assist in reviewing the viability in terms of economic impacts, complementary with other investments, technology choice and standards within a proposed budget, and also to support CR's efforts to develop well prepared detailed feasibility and impact assessments.

7. To this end, the Bank fielded a further mission to Kazakhstan in February 2014, to determine the viability parameters of the proposed Centre – West corridor, in order to prepare the pre-feasibility study. This report describes the findings of the pre-feasibility study.

1. COUNTRY AND SECTOR CONTEXT

8. Over the past decade, Kazakhstan has made impressive policy strides, absorbed large resource-based earnings responsibly, progressed towards developing a rules-driven fiscal framework, strengthened public management and the business climate, and allocated resources for improved social services and critical infrastructure to sustain growth. GDP per capita rose, in terms of constant 2011 dollars, from US$5,982 in 2000 to US$11,245 in 2011 and poverty incidence fell from 46.7 percent to 6.5 percent over the same period.[21]

9. Kazakhstan is the ninth largest country in the world and has a land area equal to that of Western Europe (2.7 million km^2). With a population of 16.3 million in 2010, it has one of the lowest population densities in the world, which makes the provision of road transport infrastructure both critical and costly. Strategically, it has the potential to link the fast growing markets of China and East Asia with Russia and Western Europe by road and rail, and through ports on the land-locked Caspian Sea.

10. The total public road network was estimated in 2012 as 93,611 km giving a density of 0.035 km per square kilometer.[22]

Table 1 – Kazakhstan: Road Network Condition, 2012

	Length (km)	Good	Satisfactory	Unsatisfactory
Republican Roads	23,495	30%	49%	21%
Local Roads	70,116	16%	47%	37%

11. The economic and geographic features of Kazakhstan pose significant transport challenges. The country is vast and land-locked, with uneven spatial distribution of the population and natural resources. Travel distances within the region are substantial, for example,

[20] It should be noted that to date there has been no request from GoK to the World Bank for financing for the Centre West Corridor.

[21] The World Bank, "*Country Partnership Strategy for the Republic of Kazakhstan for the Period FY12 – FY17"*, March 2012

[22] Egis International, *"Final Report – Road Maintenance System Improvement Project"*, August 2012.

in relation to the Centre West corridor, the most direct central route from Astana to Aktau (Route 2) is about 1,940 km, whereas the indirect northern route (Route 1) is about 2,730 km.

12. Such distances result in significant travel times and costs for accessing markets within the region and beyond. It has been estimated that transport costs account for 8-11 percent of the final cost of goods, which is about double the cost in most industrialized countries. Within this context, the development of transport infrastructure combined with efforts to increase the efficiency of the sector itself, are seen as enabling factors for the development of the country.[23]

13. The Bank is currently providing a US$2.125 billion loan under the on-going South West Roads project (SWRP) to upgrade 1,145 km of the Western Europe – Western China (WE-WC) Road Corridor[24] within the South Kazakhstan and Kyzylorda Oblasts, and to improve the management of the road transport sector. A further US$ 1.068 billion has been provided under the East West Roads project (EWRP) to finance the reconstruction of 305 km within the same corridor. Assistance for the financing of the WE-WC project has also been provided to GoK by the Asian Development Bank (ADB), the European Bank for Reconstruction and Development (EBRD), the Islamic Development Bank (IsDB) and the Japan International Cooperation Agency (JICA). The cost of the entire project is around 1,088 billion KZT (US$ 7.5 billion at an average US$ 2.4 million per kilometer)[4].

14. The implementation of these projects has provided invaluable experience to Government and the Bank regarding design and implementation considerations that take into account climactic conditions in Kazakhstan some of which result in cost of construction increases. In those parts of the North and East of the country where there is extreme winter weather, it is good practice for the road formation to be raised sufficiently to protect the pavement from movements in the subgrade created by the freeze / thaw cycles, to allow for snow shedding and to help protect the surface from snow drift.

15. As a result of road sector reforms carried out under the Bank-financed SWRP, the responsibility for road assets and developments is tiered at three levels of responsibility. At the political level, the Ministry of Transport and Communication (MoTC) reports to GoK and is responsible for decision making and overall regulation in the transport sector, including the republican roads network. At the administration level, the Committee for Roads (CR) reports to MoTC, and is responsible for policy formulation and management and implementation of national policy for the road sector is assigned to the Ministry of Transport and the interface with the general public. At the implementation level, the recently created Kazavtozhol JSC (KAZ) is now responsible for public road sector operational implementation, including day-to-day operations under EWRP from CR. KAZ is represented by departments in each of the fourteen Oblasts (Regions). Quality control is provided through a dedicated unit in each Oblast, the "Oblzhollaboratory", staffed with engineers and technicians who carry out works inspections, sampling and testing of materials to check compliance with specifications.

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[23] The World Bank, *"Project Appraisal Document, East West Roads project"*, March 2012.

[24] Also known as the CAREC corridors 1b and 6b.

16. The total volume of goods in transit through Kazakhstan in 2012 amounted to 17.8 million tons, income from which amounted to more than US$ 1 billion. The majority of goods in transit are transported via the rail network (16.3 million tons), the rest by road (1.46 million tons), and by water transport (0.16 million tons). Most of the items in transit originate in Russia, whose share was 50% in 2012. China accounts for 15% of the total goods in transit, with Georgia and Uzbekistan about 9% each. The main destination countries for transit cargo through Kazakhstan are countries in Central Asia; (Uzbekistan - 36%, Kyrgyzstan - 19%, Afghanistan - 13%, Tajikistan - 11% and Turkmenistan - 8%), while Russia and China accounted for 5%. [25]

2. GOVERNMENT STRATEGIES THAT RELATE TO THE TRANSPORT SECTOR

17. GoK adopted its State Program for the Development and Integration of Transport Infrastructure to 2020 (SPDITI). The objectives of the SPDIT are the formation of a modern transport system in Kazakhstan that:

a. Increases the flow of freight through the country by properly integrating and linking the land, sea and air transport systems;

b. Provides connectivity between regional cities and towns, and

c. Allows for the creation of infrastructure centers[26] within regions.

18. The SPDITI also builds on the Kazakhstan Program for Regional Development (PRD). The PRD is a mechanism for predictive spatial development of Kazakhstan to be implemented over the period to 2020[27]. The program aims to create development centers that improve both the economic potential of the country and the living conditions of the general population. It promotes state support for the development of regions through the formation of centers of economic growth, and will allow state funding to be directed to those areas where it will have the greatest development impact.

19. The main planning feature of the PRD is the emergence of “urban agglomerations”, in which about a third of the total population will be concentrated. Type 1 urban agglomerations[28] include Almaty, Shymkent, Astana and Aktobe. An identified challenge for the PRD is the development of critical engineering infrastructure, including not only that required within regions (i.e. gas, heat, electricity, water and sanitation systems), but that required for connectivity between the regions, i.e. transport systems.

20. The PRD also anticipates the development of fourteen "second tier" cities. These “second tier” areas include Kokshetau, Shymkent, Atyrau, Uralsk, Taraz, Karaganda, Kostanay,

[25] Kazakhstan State Program for the Development and Integration of Transport Infrastructure to 2020, January 2014.

[26] Infrastructure Centre is defined as a node that is suitably located to provide centralized services, i.e. health, education, legal and regional transport hubs.

[27] Approved by the Decree of the President of the Republic of Kazakhstan dated July 21, 2011 № 118.

[28] The PRD defines a type 1 agglomeration as an urban cluster of closely spaced settlements around one or more urban cores, which are united by economic and cultural ties.

Kyzylorda, Pavlodar, Petropavlovsk, Ust-Kamenogorsk and Aktau. GoK recognizes these cities as the centers for industrial, financial and population in their regions. Similarly to the urban agglomerations, significant challenges for development of the "second-tier" cities include the provision of urban infrastructure, and transport connectivity, i.e. roads.

21. The Government's aims, as deliberated in the SPDITI and RDP, which are to increase the flow of freight through the country; properly link all land, sea and air transport systems; and provide connectivity between and within the urban agglomerations and the second tier cites; are likely to be met at least partially, through the completion of the Centre South, Centre East and Centre West road corridors, and through the realization of the east-west rail link.

22. In terms of the Centre West corridor, the corridor subject to viability analysis generally follows existing road stretches along the northern Route 1 which starts in Astana and passes through Aktobe, thus linking two of four identified "urban agglomerations", and two of the identified "second-tier" towns, Kostanay and Aktau. Direct routes (new construction) may connect Astana to Aktau through a shorter distance but will require massive new construction and consideration is made of the fact that direct connectivity will be improved for certain freight flows through the construction of the 1,200 km long east-west railway via Zheskazgan - Shalkar - Beyneu, forecast to be finalized in 2015. The Central-West corridor infrastructure (road and rail) will be a main gateway to the west through Caspian Sea and beyond through the Caucasus to Europe, and to the east, to the port of Lianyungang on the Pacific Ocean. It is noted that significantly higher volumes of freight are currently being transported through Kazakhstan via the rail network, so further development of the east-west rail link for transit freight will have a significantly higher impact than an east-west road link. In this context, it is postulated that the viability of the development of a northern road route for the Centre-West corridor, is closely linked to GoKs objective to link regional agglomerations and promote regional development through infrastructure interventions, complementing the goal of promoting transit freight by further development of the rail infrastructure.

3. ALIGNMENT OPTIONS

23. Six routes for the Centre-West corridor have been identified by GoK. These routes are shown on the map in Annex A. For reference, the map in Annex B shows the Central Asia Regional Economic Cooperation (CAREC) corridors. Four of the six proposed Centre-West routes can be loosely described as crossing through the center of the country, with the two remaining routes traversing east-west through the north and south of the country respectively.

- **Route 1**, proposed by CR, traverses Astana, Zhosky, Kostanay, Kurabutak, Aktobe, Dossor, Beyneu to Aktau.
- **Route 2**, proposed by CR, traverses Astana, Zhanteke, Egindykol, Arkalyk, Turgay, Akshiganak, Yrgyz, Shalkar, Beyneu to Aktau.
- **Route 3**, proposed by CR, traverses Astana, Atbasar, Arkalyk, Turgay, Akshiganak, Yrgyz, Shalkar, Beyneu to Aktau.
- **Route 4**, proposed by KAZ, traverses Astana, Zhanteke, Egindykol, Arkalyk, Turgay, Akshiganak, Yrgyz, Aktobe, Dossor, Beyneu to Aktau.

- **Route 5**, proposed by KAZ, traverses Astana, Zhanteke, Egindykol, Arkalyk, Turgay, Akshiganak, Yrgyz, Shalkar, Kandyagash, Dossor, Beyneu to Aktau.
- **Route 6**, proposed by KAZ, traverses Astana, Atbasar, Arkalyk, Zhezkazgan, Kyzylorda, north to just east of Shalkar, then west to Shalkar, Beyneu and Aktau

24. Routes 2 and 3 differ only in the alignment between Astana and Arkalyk, while Routes 2, 4 and 5 only vary between Yrgyz and Beyneu. Route 6 initially follows Route 3, but then diverts south before joining up with Routes 2 and 3 near Shalkar.

25. The central and southern routes (Routes 2 – 6) traverse some sections where existing road infrastructure is either non-existent or in very poor condition. For this reason, in general, through traffic between Astana and Aktau currently takes the northern route. The northern route not only provides a connection between Astana and Aktau, but also serves the important function of connectivity between the town and cities in the north of the country. In contrast, the central routes pass through very sparsely populated regions, and would do little in terms of advancing the regional connectivity and accessibility objectives described in the PRD and SPTIDI.

26. All routes use the recently rehabilitated Beyneu – Aktau highway and all descriptions and distances in this report only cover the sections between Astana and Beyneu.

Route 1 - Northern Route

27. The Northern route (Route 1) is not a single road as such but instead uses a combination of existing highways joining major centers along the northern border of Kazakhstan:

- M-36 (Ekaterinburg-Almaty), Km 963-1286
- P-13 (Zhaksy-Yesil-Busuluk) Km 0-82
- A-16 (Zhezkazgan-Petropavlovsk) Km 496-512
- P-36 (Kostanay-Auliekol-Surhan) Km 3-260
- A-22 (Kostanay-Karabutak) Km 0-547
- M-32 (Samara-Shymkent) Km 753-965
- A-27 (Aktobe-Dossor) Km11-512
- A-33 (Atyrau-Beyneu) Km 95-422

28. It has a total distance of 2,266 km to Beyneu (2,731 km to Aktau) but this can be shortened by about 250 km by constructing two cut-offs by upgrading local roads. One cut-off is to the south of Kostanay, from Auliekol to Adaevka, which would save about 150 km, and the other is to the east of Dossor, from Mukur to Kulsary, and would save about 100 km. Neither of these has been considered in the analysis in this report.

29. This route passes through agricultural land in Akmola and Kostanay oblasts, with several intermediate settlements, but this gradually converts to rough pasture and, after leaving Aktobe,

becomes progressively more arid and lightly-populated, with the last 500 km being salt lakes and desert. The total population in the rayons[29] served by this route is about 1.4 million, including the oblast capitals of Kostenay and Aktobe, while Atyrau, a third oblast capital, is within 100 km of the route. Table 2 summarizes the main centers along the route.

[29] Oblasts (of which there are 14 in Kazakhstan) are equivalent to provinces. Each oblast is then subdivided into rayons, together with a small number of independent cities.

Table 2 - Regions Served by Routes 1-3[(a)]

Oblast	Rayon	Centre	Population (000) [(b)]		Av income	Density
			Rayon	Centre		
Route 1						
Akmola	Akkol	Akkol	60	14		6.4
	Astrakhan	Astrakhanka	25	6	57	3.4
	Atbasar	Atbasar	50	30	65	6.8
	Zhaksy	Zhaksy	20	n.a.	51	2.1
	Esil	Esil	26	12	68	3.3
Kostenay	Karasu	Karasu	28	n.a.	71	2.2
	Auliekol	Auliekol	46	n.a.	74	4.1
	Kostenay	Zatobolsk	69	n.a.	99	9.2
	Kostenay (city)		219	219	110	
	Rudniy (city)		128	128	125	
	Taran	Taran	28	n.a.	105	3.7
	Lisakovsk (city)		41	41	91	
	Kamysty	Kamysty	14	n.a.	63	1.2
Aktobe	Aytobebi	Komsomol	26	n.a.	64	0.7
	Khromtau	Khromtau	41	22	110	3.2
	Aktobe (city)		372	372	93	
	Alga	Alga	39	19	54	5.2
	Mughalzhat	Kandyagash	65	29	99	2.3
Mangystau	Beyneu	Beyneu	58	32	73	1.4
			1355			
Route 2						
Akmola	Akkol	Akkol	60	14	0	6.4
	Astrakhan	Astrakhanka	25	6	57	3.4
	Atbasar	Atbasar	50	30	65	6.8
	Zharshan	Derzhavinsk	15	8	64	1.2
Route 3						
Akmola	Korgalzhyn	Korgalzhyn	10	4	61	1.1
	Egindikol	Egindikol	6	4	57	1.1
Routes 2 and 3 (common)						
Kostenay	Arkalyk	Arkalyk	45	28	85	2.9
	Amangeldi	Amangeldi	17	0.3	70	0.8
	Zhangeldi	Torgay	14	6	63	0.4
Aktobe	Yrgyz	Yrgyz	15	5	63	0.4
	Shalkar	Shalkar	46	27	90	0.7
	Bayganin	Karainkeldy	23	1	55	0.4
Mangystau	Beyneu	Beyneu	58	32	73	1.4
Route 2 (total)			234			
Route 3 (total)			368			

(a) In view of the similarity of most of the inhabited portion of the route, details are not given separately for Routes 4-6
(b) n.a. - population data not available but these are small villages, with populations of a few thousand at most.

Route 2 - Central Route via Zhanteke

30. The Central Route via Zhanteke follows only limited sections of existing main highways, with most of its route currently consisting of either local roads or, in the western end, tracks in the desert. It has a total distance from Astana to Beyneu of 1,473 km (1,938 km to Aktau), of which all but 241 km would need full reconstruction of local roads, many of which are no more than earth or sand tracks in the desert.

- P-2 Astana Korgalzhyn (up Zhanteke) (100 km)
- local road Zhanteke-Egindykol (67 km)
- local road Egindykol-Arkalyk (134 km)
- local road Arkalyk-Torgau (290 km)
- local road Torgau Akshiganak (71 km)
- tracks Ashiganak – Yrgyz (80 km)
- local road Yrgyz-Nura (90 km)
- A-26-Kandyagash Yrgiz (Km 260-401) (Nura – Shalkar section)
- local road Shalkar-Beghimbetov (93 km)
- tracks Beghimbetov - Turushev(327 km)
- local road Beyneu-Turushev (80 km)

31. This route passes through semi-arid land almost immediately after leaving Astana, which continues to after Arkalyk. The land then becomes progressively more arid. There are two major centers, Arkalyk and Shalkar, but otherwise the population is very sparse with the total population in the rayons along this route only being 234,000, half of which is in the starting and finishing rayons (Table 1). Arkalyk was previously the center of extensive mining operations but its population has reduced by two-thirds since independence. Shalkar is primarily a railway settlement on the Atyrau – Kyzyorda main line.

32. The eastern end of the route passes the World Heritage-listed Korgalzhyn State Nature reserve, which contains substantial undisturbed areas of Central Asian steppe and lakes. The Zhanteke – Egindokyl section of the proposed route passes some distance to the north of Lake Korghalshyn, a Ramsar wetland that has been protected for nearly 50 years.

Route 3 - Central Route via Atbasar

33. This route has a total distance from Astana to Beyneu of 1,682 km (2,147 km to Aktau), of which all but 341 km would need full reconstruction of local roads.

- M-36 Ekaterinburg-Almaty (Km 1058-1247)
- local road Atbasar-Kiyma-Arkalyk (290 km)
- then as Route 2 to Beyneu

34. The route follows the same alignment as Route 1 on leaving Astana but at Atbasar it diverts south along a network of local roads to meet the existing Esil – Arkalyk road near Derzhevinsk and follows it to Arkalyk. From Arkalyk onwards, the route is as for Route 2. This route passes through more densely settled lands between Arkalyk and Astana, with a total

population in the rayons along this route of 368,000, more than for Route 2 but again concentrated at each end of the route (Table 2).

Route 4 - Central Route via Aktobe

35. This route is the same between Astana and Yrgyz but then, instead of constructing a new alignment from Shalkar to Beyneu, it instead diverts northwest to Aktobe and then follows the same alignment as Route 1.

36. It has a total distance from Astana to Beyneu of 2,097 km (2,562 km to Aktau), of which 462 km would involve full reconstruction of local roads.

Route 5 - Central Route via Shalkar and Kandyagash

37. This route is the same as Route 4 except that it connects to Route 1 at Kandyagash, using roads from Yrgyz via Shalkar. This is a shorter connection than Route 4 by 100 km but involves an extra 300 km of renewal of existing roads.

38. It has a total distance from Astana to Beyneu of 1,997 km (2,462 km to Aktau), of which, as in Route 4, 461 km would involve full reconstruction of local roads and 817 km would involve renewal of existing highways.

Route 6 – Southern Route via Kyzylorda

39. This route is the same between Astana and Arkalyk as in Route 2 but it then runs south to Zhezkazgan and Kyzylorda before using the Kyzylorda – Aktobe road as far as the junction south of Saksaulsk, from where it goes direct to Shalkar; it then follows Route 2 again to Beyneu. This option provides a through. route to Beynau and Aktau but upgrades existing roads rather than providing what is effectively a new road between Arkalyk and Yrgyz.

40. It has a total distance from Astana to Beyneu of 2,247 km (2,712 km to Aktau), of which 1,495 km would involve full reconstruction of local roads and 244 km would involve renewal of existing highways.

4. THE CENTRE WEST CORRIDOR IN RELATION TO THE WORLD BANK TWIN GOALS

41. The World Bank twin goals are:

GOAL 1 - End extreme poverty. The percentage of people living with less than $1.25 a day to fall to no more than 3 percent globally by 2030

GOAL 2 - Promote shared prosperity. Foster income and consumption growth of the bottom 40 percent of the population in every country.

42. An overarching theme across both goals is sustainability, where a sustainable path of development and poverty reduction is one that: i) manages the resources of our planet for future generations, (ii) ensures social inclusion, and (iii) adopts fiscally responsible policies that limits future debt.

43. Kazakhstan has made important progress related to the first goal, to reduce extreme poverty.[30].

44. In terms of this potential project, it is the Bank's second objective regarding increase in shared prosperity, related to fostering income and consumption growth of the bottom 40 percent of the population, which needs to be specially considered. It is envisaged that this goal will be partly addressed though application of the GoK's objectives to create a transport corridor that (a) increases the flow of freight through the country, (b) provides connectivity between regional cities and towns, and (c) allows for the creation of infrastructure centers[31] within regions. Roads promote mobility, and mobility is a precondition for development. Much as a dynamic economy depends on the movement of goods and services, people rely on roads to access employment, education and health facilities. Roads, in particular regional and low volume roads, provide the first value-enhancing link for a product to move from farm to market. For people in regional areas, accessibility provided through a road, creates the opportunity to improve their social and economic well-being.[32]

45. GoK recognizes that successful integration of Kazakhstan into the world economy system in the context of globalization is impossible without the development of the transport system in the country. Currently, GoK estimates that 20% of its public roads are in good condition, 47% in satisfactory condition and 33% in poor condition. Through the TSRDP and RDP, GoK is trying to reduce the "economic distance" of regions which GoK has identified is created as a result of the poor condition of its roads. By reducing the "economic distance", GoK aims to increase the factors that determine the attractiveness of doing business in the regions and urban agglomerations, though not only making skilled labor more available through improved mobility, but increasing the availability of markets, goods and services, through the development of transport links. Such an approach will promote shared prosperity.

46. Currently, the bulk of the population lives and works in the regions. In this regard, the country faces a particular challenge - to provide the regional population with comprehensive improvements in their living conditions through improvements in the provision of education, health, water and sanitation services, as well as establishing a framework for the emergence of new industries which will create new jobs in the regions. Current development polices being prepared by GoK are aimed at the formation of centers of economic growth of the country on the basis of rational territorial organization of production and placing capacities in the regions through "infrastructure centers". However, they recognize that achievement of these objectives depends on availability of quality regional transport infrastructure.

[30] According to the World Bank's most recent estimates (2004 – 2010), less than 2% of the population survived on less than $1.25 a day. A more appropriate measure of poverty in ECA, is the percentage of people living with less than $2.50 per day, and the measure for this indicator is 5.1% [30], and this shows a steady average decline since 2001.

[31] Infrastructure Centre is defined as a node that is suitably located to provide centralized services, ie health, education, legal and regional transport hubs.

[32] Transportation Research Board, Transportation Research Number E-C167, "The Promise of Rural Roads. Review of the Role of Low-Volume Roads in Rural Connectivity, Poverty Reduction, Crisis Management, and Livability", September 2012

5. BROAD SAFEGUARDS ISSUES

47. Given the need for the road formation to be raised above natural surface to provide a separation zone from the movements created in the subgrade zone due to thaw and freeze cycles, significant quantities of embankment are envisaged under all options. This will result in the need for the establishment of borrow sources. Such borrow sources will need to be carefully managed and rehabilitated, in accordance with the EMP, which would be developed through the application of the WB OP 4.01. Water sources are also envisaged to be critical, given the low precipitation rates, shortages created by freezing conditions, and few naturally occurring reservoirs. Such sources will need to be carefully managed to ensure there is no undue impact on water required by local communities.

48. Significant social impacts include road safety, both during implementation and in operation. The current TA to develop a system of road safety audits will be in place by the commencement of this project, and the principles developed can be applied to the design of the projects. In addition, the GOK is currently preparing road safety legislation, which will assist in managing the safety aspects of the post-construction operational stage of the roads.

49. Additional social impacts are related to land acquisition, particularly around urban and densely populated areas. The risks associated with environmental safeguards are rated moderate because (i) the areas adjacent to the construction are unlikely to be disturbed by the construction and the impact of the new construction and its associated activities is likely to remain minimal; (ii) counterparts have gained experience in managing EMPs and related activities during construction; (iii) reviews by Bank staff of the ongoing activities under the SWRP and EWRP have not raised major concerns. However, in anticipation of the weaker capacity of local administration to carry out resettlement activities under the updated land code, coupled with increased attention to the social impacts of the road corridor in Kazakhstan, the rating is substantial. The client is preparing an Operations Manual for the implementation of land acquisition at the local level.

6. TRAFFIC FORECASTS

50. Table 3 gives the current traffic volumes on the various links comprising the route options. These will include some traffic currently travelling between Astana and Aktau; no origin-destination data is available but based on experience on other countries, it will be very small compared to the other flows using the roads.

51. The traffic forecasts have therefore been done in two stages:

- Forecasts of total traffic on each road section, allowing for traffic generation as a result of the road improvement but ignoring any impact from long-distance traffic diverting from alternative routes
- Forecasts of long-distance flows which could divert from their current routes as a result of an alternative route becoming preferable

52. Although this approach could result in an element of double-counting, this will be very small compared to the overall traffic volumes.

Sectional traffic flows

53. A common growth rate of 6% p.a. was used for all road types. In addition, some generation was allowed for to reflect the improved service level on those sections where improvements were undertaken; this was estimated using an elasticity with respect to travel time of -0.5.[33]

[33] Based on analysis of local travel in Australia under similar settlement patterns and road conditions. A reduction in travel time of 20% would thus generate an additional 10% of traffic on the road.

Table 3 - Route Section with Traffic Volume and Condition Data

Section	Road	Dist (km)	Surface (a)	Condition	AADT
Route 1					
Astana-Kostanay	M-36 Ekaterinburg-Almaty Km 963-1286	323	a / b	Good	3900
	P-13 Zhaksy-Yesil-Busuluk Km 0-82	82	a / b	Good	2500
	A-16 Zhezkazgan Petropavlovsk; Km 496-512	16	a / b	Good	2500
	P-36 Kostanay Auliekol-Surhan Km 3-260	257	a / b	Good	3300
Kostanay Aktobe	A-22 Kostanay Karabutak Km 0-247	247	a / b	Satisfactory	2400
	A-22 Kostanay Karabutak Km 247-547	300	a / b	Good	2400
	M-32 Samara-Shymkent Km 753-965	213	a / b	Good	3700
Aktobe-Beyneu	A 27-Aktobe Dossor Km 11-512 km	501	a / b	Good -50km; Satisfactory-220km Unsatisfactory - 230km	3490
	A 33-km-Atyrau Beyneu Km 95-422	327	a / b	Good	3100
	Total:	**2266**			
Route 2					
Astana-Korgalzhin Arkalyk	P-2 Astana Korgalzhin (to Zhanteke)	100	a / b	Satisfactory	2100
	Local road Zhanteke-Egindykol	67	h / u	Unsatisfactory	1000
	Local road Egindykol-Arkalyk	134	Macadam	Unsatisfactory	500
Arkalyk-Torgau Yrgyz	Local road Arkalyk – Torgau	40	a/ b	Good	1000
	Local road Arkalyk-Torgau	250	Part macadam	Satisfactory - 100km Unsatisfactory - 150km	1000
	Local road Torgau Akshiganak	71	top-soil	Unsatisfactory	50
	Tracks	80		Unsatisfactory	20
	Local road Yrgyz-Nura	90	Top-soil	Satisfactory – 27 km Unsatisfactory – 63 km	50
Yrgyz-Shalkar	A-26-Kandyagash Yrgyz 260-401 km	141	Macadam	Unsatisfactory	120
Shalkar-Beyneu	Local road Shalkar-Beghimbetov	93	Macadam	Unsatisfactory	100
	Tracks	327		Unsatisfactory	20
	Local road Beyneu-Turushev	80	Top-soil	Unsatisfactory	50
	Total:	**1473**			

Route 3					
Astana Atbasar	M-36 Ekaterinburg-Almaty, Km 1058-1247	200	a / b	Good	3900
Atbasar-Arkalyk	Local road Atbasar-Kiyma-Arkalyk	290	Macadam	Unsatisfactory.	1000
	As for Route 2 from Arkalyk to Beyneu	1172			
	Total:	**1662**			
Route 4					
Astana - Yrgyz	As for Route 2	832			
Yrgyz – Aktobe	M32 – Samara - Shymkent Km 260-401	437	a/b	Good	3800
Aktobe-Beyneu	As for Route 1	828			
	Total:	2097			
Route 5					
Astana - Shalkar	As for Route 2	972			
Shalkar – Kandyagash	A26 Kandyagash – Yrgyz	427	Macadam (mostly)	180 km satisfactory; 247 km unsatisfactory	600
Kandyagash - Beyneu	As for Route 1	738			
	Total:	1997			
Route 6					
Astana - Altaryk	As for Route 2	301			
Altaryk - Zhezkazgan	A-16 Zhezkazgan Petropavlovsk	340	Part macadam	Unsatisfactory	1100
Zhezkazgan – Kyzylorda	A-17 Kyzylorda – Pavlodar	438	Gravel/ macadam	Largely unsatisfactory	1000
Kyzylorda – Aralsk	M32 Samara – Shymkent	478	a/b	Satisfactory	3940
Aralsk – Shalkar	Local roads	190	Mostly earth	Unsatisfactory	100
Shalkar - Beyneu	As for Route 2	500			
	Total:	2247			

(a) a/b = Asphalt / Bitumen; h/u = Black Macadam

Long-distance traffic flows

54. No data is available giving long-distance traffic flows within the corridor and these have instead been estimated from first principles. They have been divided into two groups:

- Domestic flows between origins and destinations within Kazakhstan
- International flows to and from Aktau port
- SPTIDI.

55. All Domestic flows were estimated for those origin-destination pairs which might divert from their existing routes to one or other of the routes in the corridor (Table 4).

Table 4 - Domestic OD pairs for which Trips could potentially divert

Origin	Destination	Distance (km)					
		Route 1	Route 2	Route 3	Route 4	Route 5	Route 6
Aktau	Astana	2731	1938	2147	2562	2462	2712
Atyrau	Astana	2036	1895	2084	1895	1895	2036
Aktobe	Astana	1438	1253	1442	1253	1253	1438
Kyzylorda	Astana	1154	1021	1210	1021	1021	1021
Kyzylorda	Aktau	2747	2222	2222	2747	2747	2222

56. Both Route 2 and Route 3 save a significant distance over Route 1 for travel between Aktau and Astana (and by extension to other north-east centers such as Pavlodar). Routes 4 and 5 save about half the amount that Route 2 saves but Route 6 is about the same distance. Routes 2, 4 and 5 also save nearly 150 km for trips between Atyrau and Astana but Route 3 and Route 6 are about the same distance. Trips between Aktobe and Astana would save about 200 km by using Routes 2, 4 or 5 instead of Route 1[34].

57. Trips between Aktau and Kyzylorda and beyond (e.g. Shymkent and Almaty) save a significant distance under Routes 2, 3 and 6 by being able to travel direct from Shalkar to Beyneu. Trips between Kyzylorda and Astana in theory save over 100 km under Route 2 compared to the existing route via Karaganda. However, the road between Kyzylorda and Arkalyk is in poor condition and would probably need to be rehabilitated (as in Route 6) to make this a practical option.

58. Table 4 estimates the domestic vehicle trips per day for these origin-destination pairs. These have been derived after taking into account the population in each province and the distance of each trip, using relationships developed in Australia for similar types of trips and after adjusting for the difference in vehicle ownership and allowing for travel by non-road modes.

[34] The Route 1 distances can however be reduced by about 150 km by using local roads south of Kostenau.

59. The improved routes will generate additional trips and this has been allowed for in the forecasts, using an elasticity with respect to travel time for this type of trip of -1.5.

Table 5 - Domestic vehicle trips/day 2014

Origin	Destination	Vehicle/trips/day					
		Route 1	Route 2	Route 3	Route 4	Route 5	Route 6
Aktau	Astana	11	19	16	19	19	11
Atyrau	Astana	18	20	18	20	20	18
Aktobe	Astana	34	41	34	41	41	34
Kyzylorda	Astana	48	58	48	53	53	73
Kyzylorda	Aktau	31	42	42	31	41	41

International flows to and from Aktau Port

60. A ferry service operates between Aktau port and various other ports on the Caspian. The most important destination is Baku in Azerbaijan and in 2013 about 4,000 trucks used the ferry, carrying 22,000 tons of imports and 8,000 tons of exports. Most of this freight was almost certainly to and from Turkey[35]. But the ferry traffic only represented about 20% of the total road traffic between Kazakhstan and Turkey and so is unlikely to have travelled far beyond the hinterland of the port. Most road traffic between Kazakhstan and Turkey is almost certainly travelling either via Tashkent (to southern Kazakhstan) or via Illychevsk (to northern Kazakhstan), depending on relations with Russia.

61. This travel pattern seems unlikely to change even with an upgraded Centre-West road corridor and no specific allowance has therefore been made in this analysis for international road traffic between north-east Kazakhstan and Aktau.

7. CONSTRUCTION AND MAINTENANCE COSTS

62. Unit construction costs have been developed from recent projects and contracts in Kazakhstan (Table 6).

	Section	Road Category	Cost/km (US mill)	Pavement Type	Construction Type
IBRD contracts					
Kyzylorda	Aktobe Border – Kyzylorda	2 lane	1.4	Asphalt	Rehabilitation
Kyzylorda	Kyzylorda- South KZ border	2 to 4 lane	2.0	Asphalt	Upgrade
Kyzylorda	Kyzylorda- South KZ border	2 to 4 lane	2.3	Concrete	Upgrade
South Kazakhstan	Shymkent- Zhambul border	4 lane	2.8	Concrete	New construction
Committee for Roads data					
North Kazakhstan	Astana-Petropavlovsk		1.4		
West Kazakhstan	Uralsk, Aktobe		1.3		
East Kazakhstan	Omsk-Pavlodar-Maikapshagai		1.0		
Mangystau	Beyneu-Aktau		1.4		

[35] In 2012, the total road trade with Turkey was 157,000 tons of imports and 24,000 tons of exports; trade to and from the other countries served by the ferry (Azerbaijan, Georgia and Armenia) was only about 2,000 tons in each direction.

Aktobe	Uralsk, Aktobe	1.4
Almaty	Bypass of Sarkand	1.0
Average		1.3

Table 6 - Unit construction costs (US$ million per km)

63. Unit construction costs of $2 million per km for a new 2-lane road and $1.4 million for the reconstruction of a 2-lane road were adopted for the analysis based on this data. Table 7 gives the aggregate construction cost assumed for each route.

Table 7 - Construction costs by route option

Section	Road	Dist (km)	Works assumed	Cost(US$ mill)
Route 1				
Kostanay Aktobe	A-22 Kostanay Karabutak Km 0-247	247	Rehab	346
Aktobe-Beyneu	A 27-Aktobe Dossor Km 11-512 km	501	Rehab	701
	Total Route 1:	**748**		**1047**
Route 2				
Astana-Korgalzhin Arkalyk	P-2 Astana Korgalzhin (to Zhanteke)	100	Rehab	140
	Local road Zhanteke-Egindykol	67	New	134
	Local road Egindykol-Arkalyk	134	New	268
Arkalyk-Torgau Yrgyz	Local road Arkalyk – Torgau	40	Rehab	56
	Local road Arkalyk-Torgau	250	Rehab	350
	Local road Torgau Akshiganak	71	New	142
	Tracks	80	New	160
	Local road Yrgyz-Nura	90	New	180
Yrgyz-Shalkar	A-26-Kandyagash Yrgiz 260-401 km	141	Rehab	197
Shalkar-Beyneu	Local road Shalkar-Beghimbetov	93	New	186
	Tracks	327	New	654
	Local road Beyneu-Turushev	80	New	160
	Total Route 2:	**1473**		**2627**
Route 3				
Atbasar-Arkalyk	Local road Atbasar-Kiyma-Arkalyk	290	Rehab	406
	As for Route 2 from Arkalyk to Beyneu	1172		2085
	Total Route 3:	**1462**		**2491**
Route 4				
Astana-Yrgyz	As for Route 2	832	As Route 2	1430
Yrgyz Aktobe	M-32-Samara-Shymkent km 753-1190	437		0

Aktobe-Beyneu	As for Route 1	828	As Route 1	701
	Total Route 4:	**2097**		**2131**
Route 5				
Astana-Yrgyz	As for Route 2	832	As Route 2	1430
Yrgyz-Kandyagash	A-26-Kandyagash Yrgiz 0-401 km	427	Rehab	598
Kandyagash-Beyneu	As for Route 1	738	As Route 1	575
	Total Route 5:	**1997**		**2603**
Route 6				
Astana – Arkalyk	As Route 2	301	As Route 2	542
Arkalyk - Zheskazgan	A16 "Arkalyk-Kyzylorda" Ulbitau	196	New	392
	A16 Ulbitau - Zheskazgan	144	Rehab	202
Zheskazgan-Kyzylorda	A-17 "Kyzylorda-Pavlodar-Uspenka-gr.RF"	438	New	876
Kyzylorda-Aralsk	M-32 Samara)-Shymkent	478		0
Aralsk-Shalkar	M32 – Saksaulsk Local road	30		0
	Shalkar-Saksaulsk (local network)	160	New	320
Shalkar-Beyneu	As Route 2	500	As Route 2	1000
	Total Route 6:	**2247**		**3332**

64. For simplicity, the analysis has not made any allowance for any future changes in road upgrading as a result of the above works,

65. Road maintenance costs of the upgraded roads are estimated at $8,000 per kilometer per year for a 2-lane road based on the 2012 study by Egis for the Kazakhstan Roads Committee.

8. ECONOMIC EVALUATION

Evaluation by road section

66. The economic evaluation first considered the costs and benefits associated with upgrading each individual road section. This is identical in concept to a standard road evaluation, although undertaken at a relatively broad level given the nature of the study. The analysis compares, for each road section:

- Construction cost
- Annual maintenance cost
- Vehicle operating costs, for both the existing and generated traffic, with and without the improvement

- Time costs for road users, for both existing and generated traffic, with and without the project

67. The analysis does not consider any benefits for road users as a result of reduced congestion following the road upgrading, as most traffic volumes are sufficiently low that any such benefits would not appear for several years. Nor does it consider any impact on road accidents; while road operating conditions will be improved, speeds will also increase significantly and it is unclear if there would be a net gain or loss from any change in road accidents.

68. Estimates of the impacts are made for the current year and then projected forward in line with traffic growth. Time savings are also increased in line with the forecast increase in average wage, taken as 4% p.a. The evaluation is done over a period of 25 years from 2020, assuming a three-year construction period from 2017.

69. Vehicle operating costs were based on those used in the 2009 ADB evaluation of the Aktau-Beyneu road. These, which are a function of roughness using IRI, were updated to current costs using the Kazakh Consumer Price Index. Vehicle speeds as a function of roughness were derived from the relationships embedded in HDM4, ranging from 90 km/hr for an IRI of 2 to 26 km/hr for an IRI of 16 (equivalent to a poor earth road). The IRI for each road section was estimated from the current road condition as reported by the Roads Committee.

70. The analysis assumed a uniform vehicle classification with 60% of vehicles being car and jeep, 5% heavy bus, 25% small/medium trucks and 10% heavy trucks. Time costs were based on average values of $5/hour and $1.50/hour for work and non-work time respectively.

71. Table 8 summarizes the results of the analysis for each road section considered. They clearly show that the Route 1 projects perform far better than those on Route 2. This is a direct reflection of the forecast traffic volume on each link and both the possible links to Arkalyk (Route 2 via Korgalzhyn and Route 3 via Atbasar) also perform well for this reason, as do the more heavily-trafficked sections in Routes 5 and 6. However, the central sections of Route 2 (which are common to Route 3) simply do not have the forecast traffic volume to achieve a reasonable EIRR at the current time.

Table 8 - Evaluation of upgrades – EIRR and NPV (@ 12% to 2017 ($US 2014 million)

	EIRR	NPV
Route 1		
Kostanay - Karabutak	14	89
Aktobe - Dossor	33	2194
Route 2		
Astana - Korgalzhin - Arkalyk	131	-47
Arkalyk – Torgau	10	-102
Torgau – Yrgyz	-6	-415
Yrgyz – Shalkar	-1	-154
Shalkar – Beyneu	-6	-865
Route 3		

Atbasar – Arkalyk	19	172
Route 4		
All sections included in Routes 1 – 3 abov		
Route 5		
Yrgyz – Kandyagash	10	-125
Kandyagash - Dossor	17	1379
Route 6		
Akalyk – Zhezkazgan	7	-233
Zhezkazgan – Kyzlorda	11	-89
Kyzlorda – Shalkar	1	-230

Evaluation of Alternative Corridors

72. The results in Table 8 do not include any benefits from long-distance traffic diverting from its current routes. This will only happen if the route as a whole has been upgraded. Two potential benefits have been identified and included in the comparative evaluation:

- Benefits to long-distance traffic which has a shorter route than previously

- Wider economic benefits as a result of the regional centers improving their accessibility to the two major centers in Kazakhstan, Astana and Almaty

73. Forecasts of traffic which would potentially divert were derived in Table 4. These trips will benefit from the reduced travel distances and travel times created by the different options and this has been evaluated using the same values and assumptions as for the individual road sections.

74. The wider economic benefits arise because improving the accessibility of the regional centers to the major centers will generate longer-term benefits through agglomeration. Such benefits are associated with widening the range of products for production inputs, sharing a wider and more flexible pool of labor, capital, and raw materials, and the greater opportunities for the transfer of technology and innovation. Such agglomeration economies have long been understood to exist and methodologies have been developed in recent years to quantify such impacts, particularly when there has been a step change in accessibility. The estimates included in the evaluation are based on research in several countries and are consistent with the procedures used for similar projects in China which provide a step quantum improvement in accessibility.

75. The evaluation results for the corridor as a whole, derived from Table 8 but also including the benefits from the diversion of long-distance traffic and from agglomeration, are given in Table 9. These results show a similar pattern to those for the individual sections; the projects along Routes 1, 4 and 5 show a strong result, while those along the Central corridor which require new construction beyond Shalkar, whilst having a positive NPV, do not have an average traffic volume high enough to provide a stand-alone economic case for the investment at this time.

Table 9 Evaluation of corridor upgrades – EIRR and NPV (@ 12% to 2017 ($US million 2014)

	EIRR	NPV
Route 1	28	2283
Route 2	6	-1197
Route 3	7	-1025
Route 4	19	1872
Route 5	17	1379
Route 6	8	-1248

76. Table 10 gives the structure of costs and benefits for each option

Table 10 : Costs and benefits by option NPV ($US million, 2014) (discounted at 12% to 2017)

	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Capital cost	-917	-2302	-2183	-1867	-2280	-2919
Maintenance cost	-19	-61	-63	-19	-32	-85
Existing traffic VOC benefits	1081	303	336	1219	1188	529
Existing traffic time savings	1595	475	546	1825	1779	824
Generated traffic savings	506	160	215	614	598	298
Diverted traffic savings	0	133	79	61	80	92
Wider economic benefits	0	95	45	40	46	14
Total	2283	-1196	-1025	1872	1379	-1248

77. The robustness of these results was tested against changes in three base case assumptions, as shown in Table 11.

- Increasing capital costs by 50%
- including VOC cost savings only
- including VOC cost savings and time savings only

Table 11 Sensitivity of Project IRR to changes in assumptions

Test	IRR (%)					
	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6
Base	28	6	7	19	17	8
Capital costs +50%	21	4	4	15	13	5
VOC savings only	16	0	0	10	8	1
VOC savings and time savings only	28	6	7	19	17	8

9. CONCLUSIONS

78. Based on the information assessed, there will be positive economic impacts resulting from the construction of the Center-West Corridor, particularly if Routes 1, 4 or 5 are adopted.

Route 1, a less direct northern route, and the one currently being used for road travel between Astana and Aktau has the highest estimated IRR and also has additional benefits when compared with the Government's "Program for Regional Development". It also fits well with the objectives of the "State Program for the Development and Integration of Transport Infrastructure to 2020". Moreover, as the link roads that comprise this corridor already largely exist, further development of this route would provide additional benefits in terms of being able to stage the upgrade works for priority links within the corridor, and therefore realize accrual of benefits on a planned and progressive basis.

79. The IRR for Routes 4 and 5, which generally follow the central corridor before joining the northern corridor before or after Aktobe, also show a strong result due to the economic benefits on most of the existing sections arising from high traffic volumes (generally higher than Route 1), but the overall economic argument is reduced compared to Route 1 because of the higher capital costs resulting from a greater amount of new construction and the low traffic volumes on the central section between Torgau and Yrgyz.

80. Routes 2, 3 and 6 which mostly follow the central or southern corridors, all require new construction beyond Shalkar, and hence have higher capital costs. Whilst these routes have an EIRR of around 7%, the average traffic volume is not high enough to provide a stand-alone economic case for investment at this time.

81. Route 2 creates the greatest improvement in accessibility of the regional centers to the major centers and thus will generate the greatest longer-term benefits through agglomeration as well as the largest benefits for diverted traffic. These two benefits together comprise about 20% of the total benefits for Route 2. The other routes which include the new route to Shalkar also generate agglomeration benefits, although not as great as for Route 2. These benefits arise not only from better accessibility to Astana but also better accessibility to Almaty and the centers in southern Kazakhstan. However, because of the long distances, the traffic volumes affected are relatively small and these benefits are recover only a small proportion of the relevant capital costs.

82. In summary, there is a strong economic case for upgrading Route 1 via Kostenay and Aktobe (especially the Aktobe – Dossor section), followed by Route 4 or Route 5. Improving individual sections of the other routes also has an economic case, as does some limited improvement of local roads, but new construction that will benefit only a very low volume of long-distance inter-regional traffic does not appear a priority at present time.

Annex 6: Rural Access Map Poverty, Distributional Analysis and Summary of Development Plans for Arkalyk, Amangeldy, and Torgay

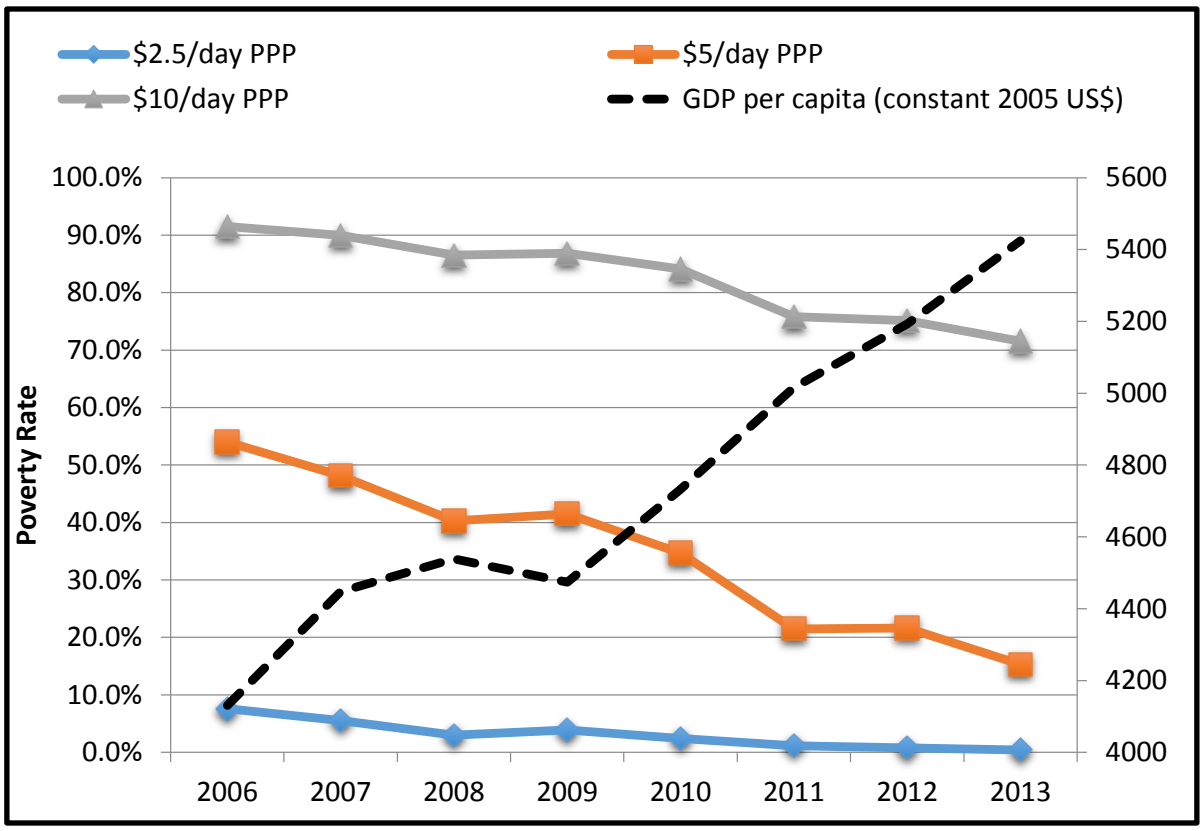
1. This annex presents key socio-economic and demographic aspects in the four oblasts where the Center West Corridor Development Project will be constructed. With data published by the National Committee on Statistics the annex geographically identifies the location of the poor and bottom 40 percent and the country's record in poverty reduction and shared prosperity. It further examines the extent to which connectivity constraints in the catchment areas may be a factor explaining poverty and social exclusion. Drawing on anecdotal evidence on the potential impact of corridor development in remote areas in terms of economic growth and poverty reduction, the annex subsequently discusses how the proposed intervention will benefit road users, households, firms and settlements in the area of influence. The annex concludes by describing the conceptual underpinnings and the methodology that will guide a future impact assessment.

Poverty and Shared Prosperity in Kazakhstan and the Catchment Area: A Snapshot

2. In the last decade, Kazakhstan has experienced pro-poor growth, which has increased shared prosperity (Azevedo, Sattar, Yang, 2015). GDP per capita has grown steadily almost every year, boosted by high commodity prices, and favorable international economic conditions. Broad-based work has been associated with significant poverty reduction. Indeed, the poverty headcount ratio defined by the consumption-based measure used by the National Committee on Statistics[36] fell from 8.2 percent to just over 3 percent in the 2009-2013 period. When looking at other measures of poverty that can be compared internationally such as per capita income of US$5 a day (PPP) the results are equally impressive. Over the period 2006 to 2013, Kazakhstan experienced a decline in poverty at all levels (poor, vulnerable, and middle class). With the exception of the period during the financial crisis (2008-2009), poverty was falling. In 2006, 54 percent of the population lived in poverty, compared to 17.8 percent in 2013. With a population of 17 million in 2013, the reduction in poverty from 2006 to 2013 translates into about 6.6 million people moving out of poverty. However, the pace of poverty reduction has differed significantly, with Akmola, Aktobe and Kostanay oblasts having the smallest declines since 2011.

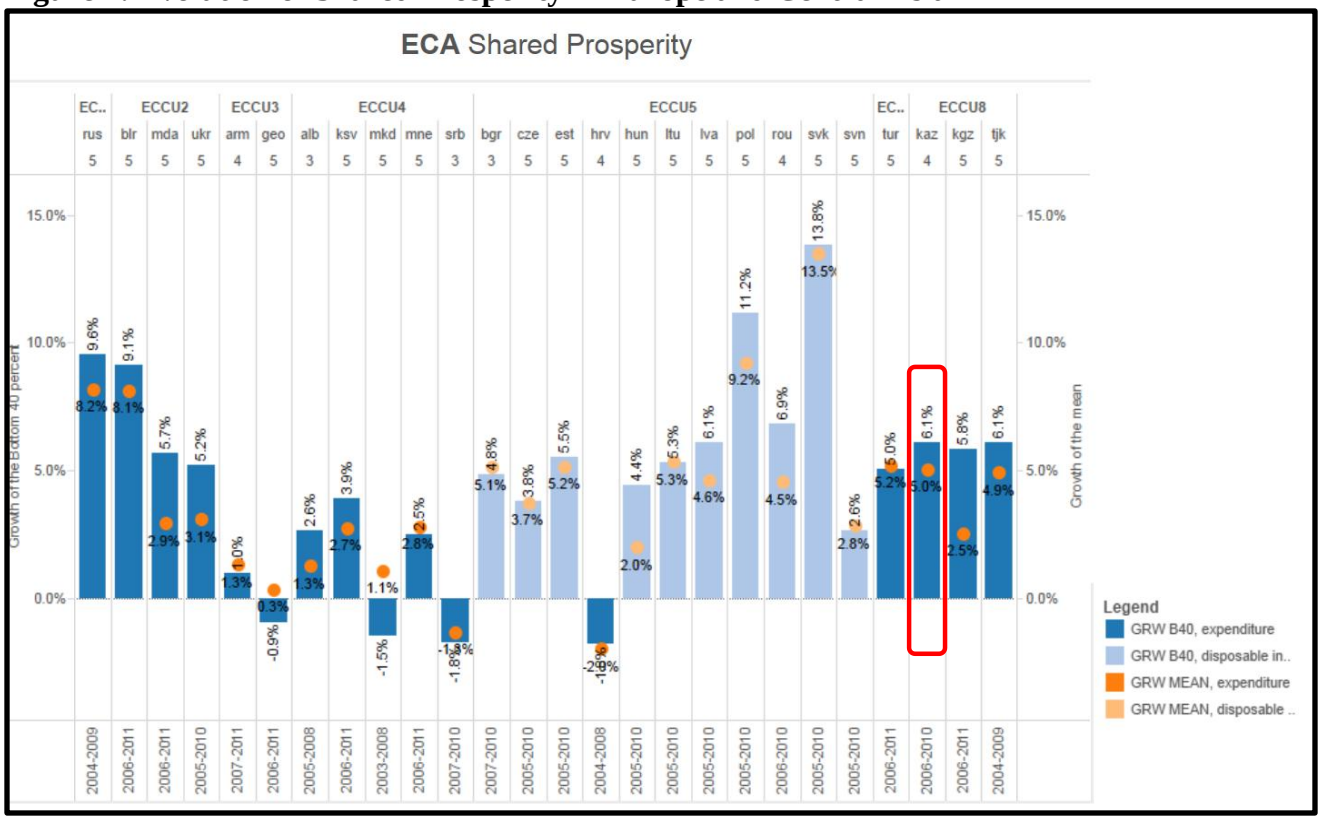
Figure 1: Kazakhstan: Evolution of GDP per capita and international poverty rates

[36] The minimum subsistence level defined by government as the national poverty line was set in 2013 as consumption of US$35 per person per month.



3. Income data shows that prosperity is being shared and inequality is declining. Across all 4-year intervals from 2006 to 2013, the growth of consumption and income per capita among the bottom 40 has been higher than growth of the mean (6.1 percent against 5 percent per year). Indeed as can be observed in figure 1, Kazakhstan has been a good performer in the region. Related to shared prosperity, inequality measured using the Household Budget Survey (HBS) is low compared to other countries but has changed significantly in the last years (Gini coefficient was 0.26 in 2013 against 0.28 in 2006).

Figure 2: Evolution of Shared Prosperity in Europe and Central Asia

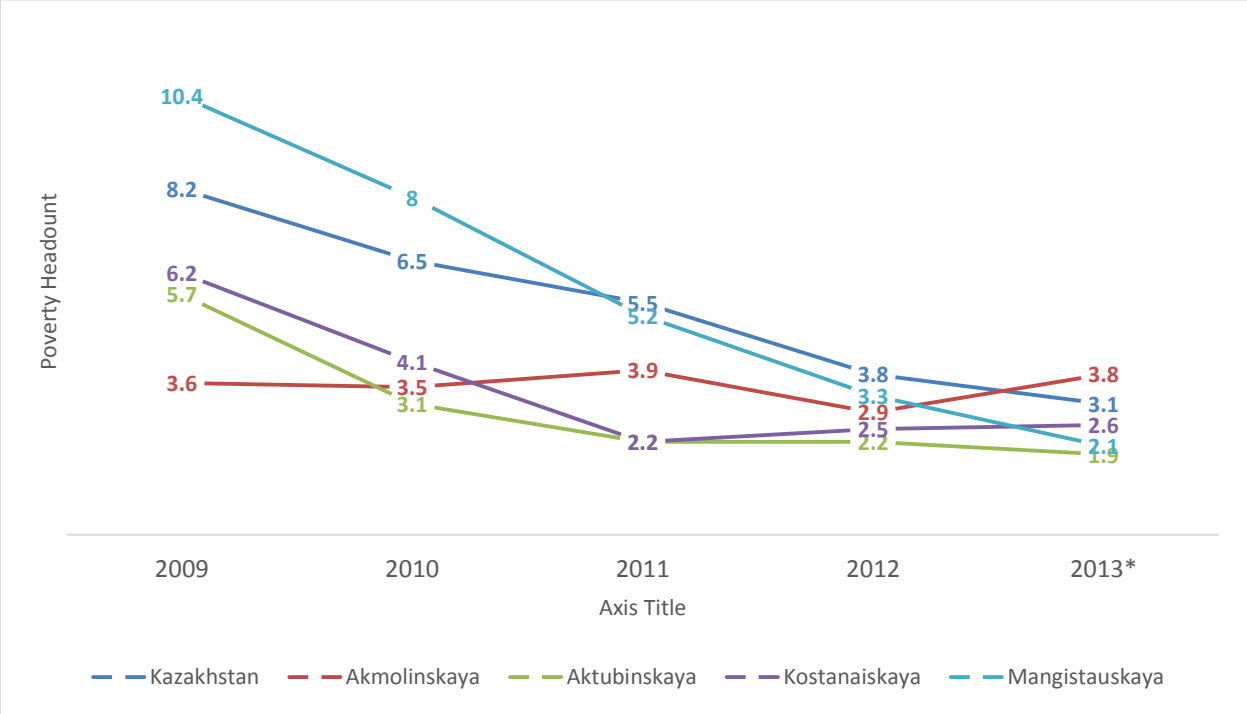


4. In spite of income convergence across regions, Kazakhstan still exhibits significant and persistent spatial disparities. Indeed, data from the HBS shows that poverty reduction was less pronounced in the regions with initially high levels of poverty in the 2006-2013 period. Economic activity has not been evenly distributed across the different regions of the country. To begin with, poverty levels are much more severe in rural areas than in urban ones. In rural areas, the share of people living below subsistence levels is more than three times higher than the share in urban areas. In accordance, average household income is much lower among rural population, compared to urban households. Promoting shared prosperity cannot be achieved without improved living standards in all regions.

5. The Project's immediate area of influence defined by the alignment of route 2 (see annex 2) traverses 10 main cities with an estimated population of 318,000. The extended area of influence covers the Oblasts of Akmola, Kostanay, Aktobe, and Mangistau. Together they are home to over 3 million inhabitants or roughly 18 percent of the total population of Kazakhstan and contribute about 16 percent of national GDP. These four oblasts are highly different from one another: Mangistau has showed a very good performance over the last years, exhibiting dynamic growth in economic activity accompanied by reductions in income inequality and poverty levels. This is the Oblast with the highest GDP per capita among those served by the future Corridor and with the highest contribution to national GDP, despite being the less populated among the four. Mangistau and Aktobe have relatively low rates of poverty, with 1.9 and 2.1 of people living below the national poverty line respectively, the oblasts of Kostanay and Akmola have slightly higher poverty rates (2.6 and 3.8 percent) (Figure 2).

Figure 3: Selected demographic and economic indicators in Oblast covered under the Centre West Project

Figure 4: Poverty Rates in Oblasts covered under the CW Project

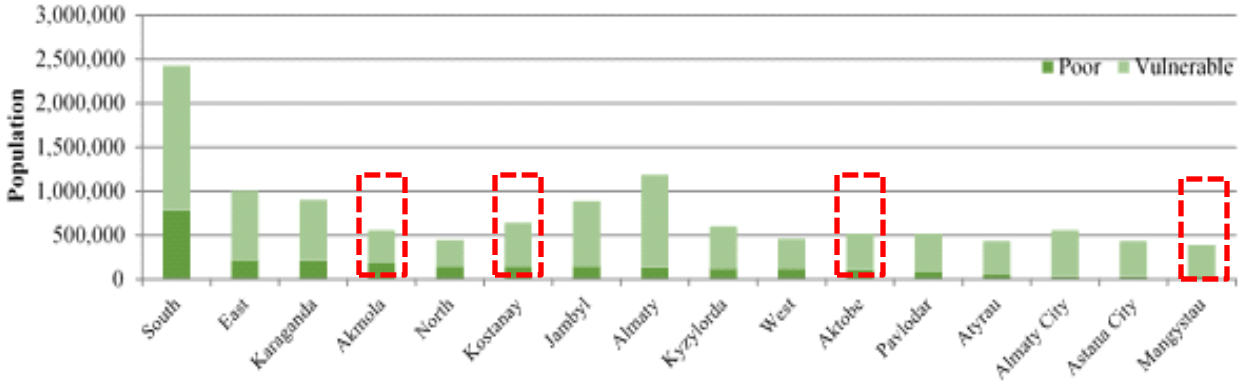


Source: Source: Agency of Statistics of the Republic of Kazakhstan. National Poverty Incidence
**As of Third quarter*

6. While extreme poverty has become virtually inexistent with levels below any other country in Central Asia, when looking at the international poverty rate of US$5 a day in PPP terms the incidence of poverty is however significantly higher. Using this measure, the poverty headcount in the extended area of influence extends to about 16 percent of the total population, while the rate of vulnerability as defined by living between US$5 and US$10 dollars a day amounts to 72 percent[37]. In other words, 460,000 people have problems meeting the minimum subsistence levels and about 1.6 million people risk falling into poverty (Figure 5).

Figure 5: Poverty and Vulnerability in Kazakhstan, 2013

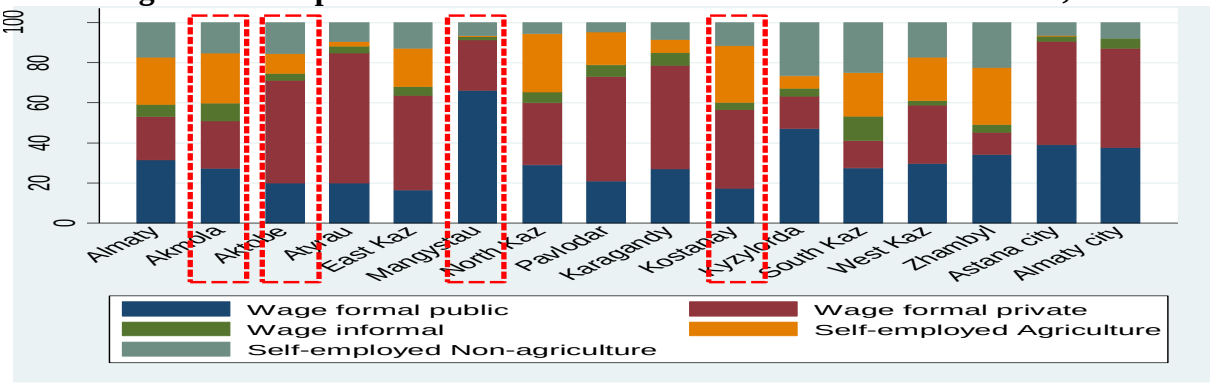
[37] The vulnerability rate includes those considered poor as this income group is vulnerable by definition.



Notes: The welfare aggregates are in consumption per capita including health, durables, and rent. Poor households are considered to have less than $5/day PPP per person, vulnerable households have $5-10/day PPP per person, and the middle-class have $10/day PPP per person.
Source: WB staff calculations, Kazakhstan Household Budget Survey 2013

7. Strong economic growth has been accompanied by steady job creation and this trend has been consistent throughout most regions in Kazakhstan. In 2013, the unemployment rate stood at 5.2 percent down from 6.6 percent in 2009. Kostanay and Aktobe exhibit the lowest rates of unemployment (about 6 percent each), while Mangistau has the highest rate, but even there the percentage of the active labor force without a job is only 7.1 percent. However, some regions located within the Projects' catchment area exhibit large shares of unproductive or precarious employment, signaling the need for the creation of more formal jobs in high value added sectors.

Figure 6: Occupational Structure of the Labor Market in Kazakhstan, 2013



8. It is important to mention however that oblast-level welfare indicators are not informative enough for targeted policy making. There is large variation in welfare by oblast, and likely even more heterogeneity if examined at more disaggregated levels. To fill in the potential knowledge gaps and better understand the socio-economic fabric of the project's direct beneficiaries as well as the livelihood conditions in the beneficiary communities, a series of consultations have taken place. The next sub-section presents the findings and delves deeper into the mobility and accessibility needs of these communities.

Potential Market Accessibility Index

9. Access to markets and social services is a major determinant of economic status and welfare. Reliable access to and connectivity among markets, populations, and regions are essential elements of economic development. Poor access, especially in rural areas is associated with a range of development problems— in getting to health facilities for both emergency and non-acute treatment; farmers have less incentive to exploit the full agro-ecological potential of remote farming areas due to problems in reaching markets; or they face low farm gate prices offered by traders (Yoshida and Deichmann, 2009). Ensuring that these connections are maintained, all year round and in the event of shocks, is linked to reduced poverty and economic development.

10. In spite of its large land area and sparse population, Kazakhstan has several regions with severe connectivity constraints. This is the case for most of the Project's Catchment area. Figure 8 below demonstrate that Kazakhstan has very low connectivity and thus market accessibility indexes as measured by distance to the closest medium-sized city, suggest that for over 40 percent of the rural population it takes on average over three and five hours to reach a city of over 100,000 and 250,000 inhabitants respectively. In fact, as illustrated in figure 9, some communities located in the immediate catchment area of the CWP exhibit travel times of over 8 hours to access major cities. Removing barriers related to distance are critical for ensuring country-wide market integration.

11. Given that most economic activity in Kazakhstan takes place in larger urban centers and larger populated places lead to agglomeration economies by efficiencies in production, proximity to economic distance matters. Connectivity from the leading regions to the lagging regions can help reduce poverty by providing access to agglomeration economies, additional educational opportunities, specialized social services and greater size and type of markets. In more remote areas, farmers may have increased incentive to produce the full potential of the land when provided less middle traders and easier access to markets (ibid, 2009). It is expected that the construction of the Centre West corridor significantly reduces travel times between villages and larger cities by at least 30 percent thereby ensuring better market and service access.

Figure 8: Rural travel time to cities with a populations greater than 100k and 250k

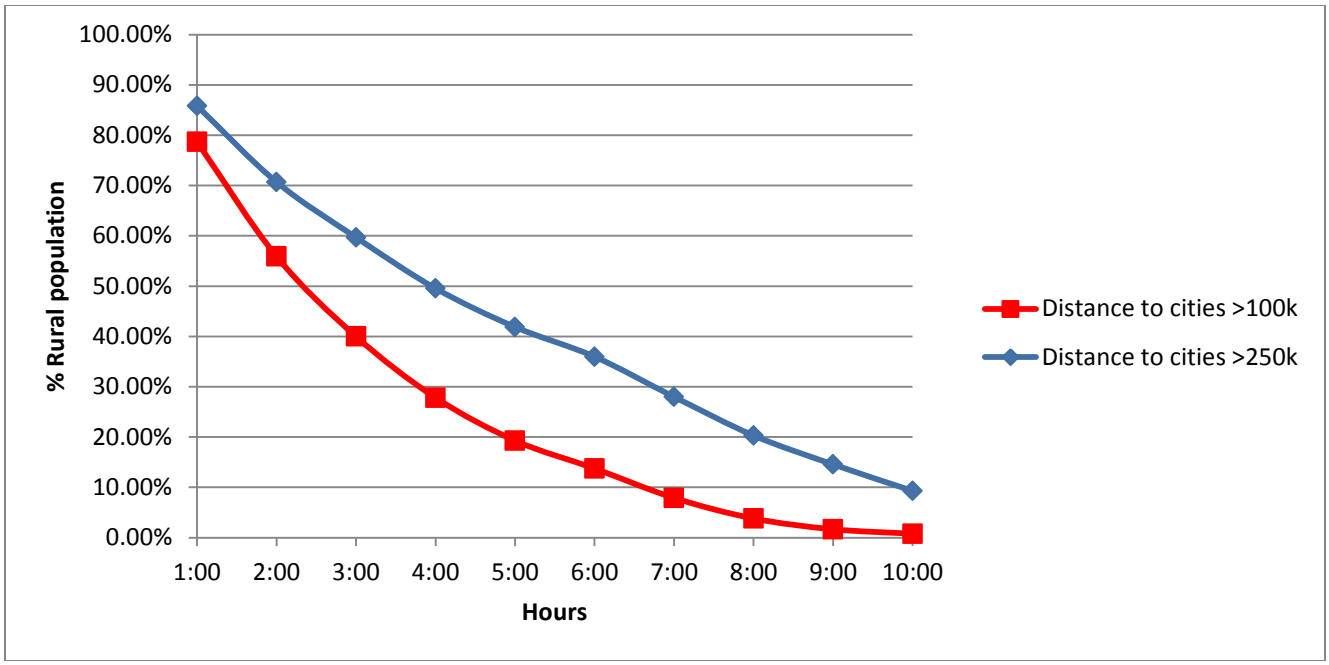
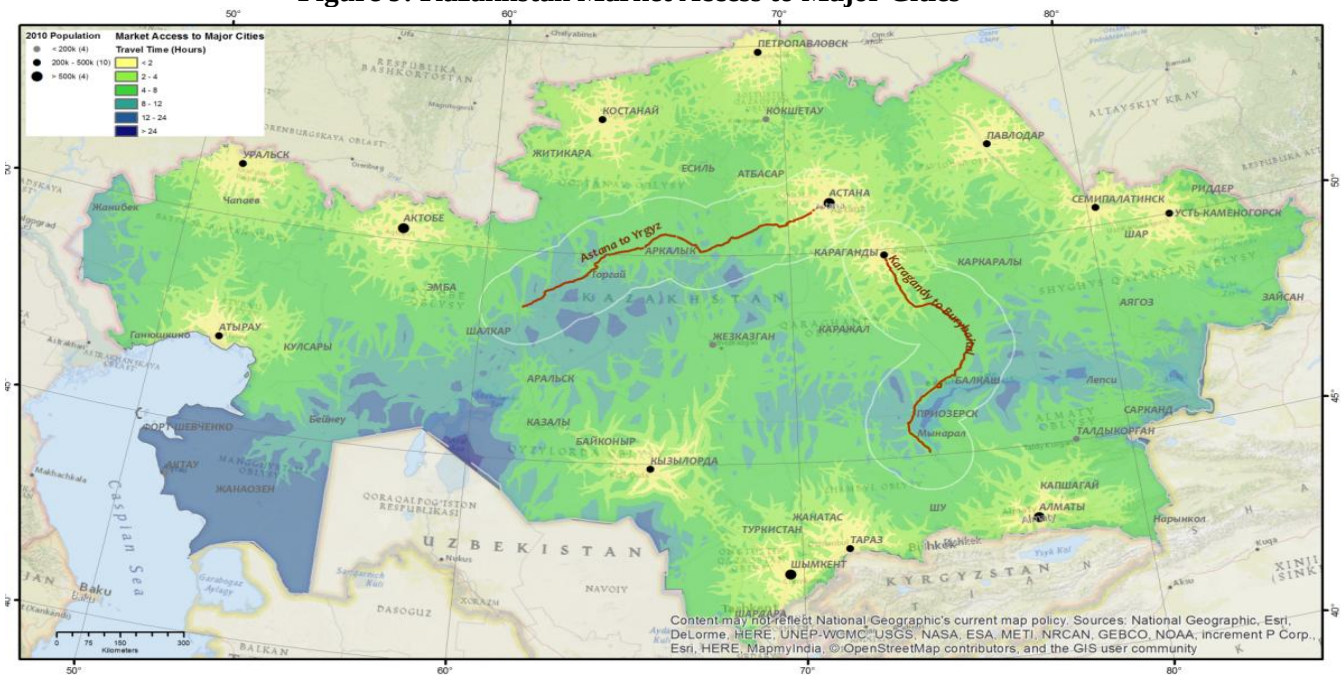


Figure 9: Kazakhstan Market Access to Major Cities



Expected Project Impact and contribution to the twin goals

12. Adequate transportation infrastructure is an essential ingredient for economic development and growth. Beyond simply facilitating cheaper and more efficient movements of goods, people, and ideas across places, transportation infrastructure impacts the distribution of economic activity and development across regions, the extent to which agglomeration economies and efficient sorting can be realized, the levels of competition among industries and concomitant reallocation of inputs towards productive enterprises, and much more. Through the construction

of a large-scale highway to connect some of Kazakhstan's most remote regions to many of the major industrial, agricultural and commercial centers of the country, the Project can have positive impact on regional economic growth on one hand, and improve several household welfare indicators on the other. This sub-section presents some of the differentiated economic impacts for different units of analysis, namely i) road users, ii) beneficiary households iii) settlements located in the catchment area, and iv) firms in the area.

Road users

13. The most direct and shorter term impacts will accrue to both freight and passenger transport companies with inter-regional mobility needs. Road users will benefit from lower vehicle maintenance and operating costs stemming from better roads and pavements, as well as from the associated better mobility and access to jobs, markets, social services and improved road safety. Among road users and beneficiaries, the project equally targets both men and women.

14. The road-users would benefit on two levels. First, along the corridor from improved connectivity (particularly from small underserved villages to second-tier towns and agglomeration centers), better road condition, and reduced travel time. For instance, the construction of the highway will cut transit time by 35 percent through the whole corridor and reduce transport costs by between 30 and 51 percent depending on the vehicle type. Road users would also benefit from better services provided along the corridor including rest areas, improved sanitary conditions, information, emergency response, and other. Second, at the national level, road-users would benefit from the formulation and implementation of the national RSP, as well as the improved road conditions through strengthened road asset management system.

Beneficiary households and workers

Households and communities located near project road sections are likely to benefit from local market development, increased investment and employment, improved access to public services and ultimately improved and more sustainable livelihoods. One of the main beneficiaries of this project are the households. There are numerous ways through which the construction of the Centre West Corridor affects them both directly and indirectly. Directly, the project will make available jobs in construction and maintenance, as well as temporary jobs sectors for providing services at project sites, and road side services once the corridor is operational. The number of direct jobs created in Kazakhstan will depend on local conditions but according to international experience it may range between 20-30 per USD 1 million. Indeed, the South West Road Improvement project created between 30,000 and 35,000 jobs in civil works in its five years of construction. In this respect, the CWP could create between 20,000 and 25,000 in the area of intervention of Bank-financed works.

Indirectly, it is expected that up to 60,000 indirect jobs opportunities arise particularly in the cement, steel, logistics, tourism, and freight forwarding sectors. Greater connectivity and lower cost of transportation are important factors which facilitate job searching outside the region,

especially during off season. Hence, households are expected to be more likely to travel outside their own region. More employment is translated into more income for each household, thus expanding the household´s consumption possibility frontiers.

15. Another important set of social outcomes expected to arise from improved access to health, education and public services. Where transaction costs related to travelling to schools or hospitals falls, utilization should increase with a corresponding improvement in long run outcomes (Ahmed and Hossain, 1990; Levy and Porter, 2002; Mu and van de Walle, 2008). While health and basic education coverage is extensive in the region, attending university or the TVET system may be cumbersome for some given the distances and generalized travel costs to their residences. Similarly, the option of accessing improved health facilities and accessing certain treatments may not be available in some of the most remote communities. With the construction of the road corridor, this option will now be available. From a supply side perspective, the new link will provide an added incentive for education and healthcare professionals to relocate and work in villages and towns with a shortage of trained doctors, nurses and teachers. A skilled labor force in the education and health sectors, should too influence health and schooling outcomes for households in some of the more isolated communities which, at times, tend to be the poorest too.

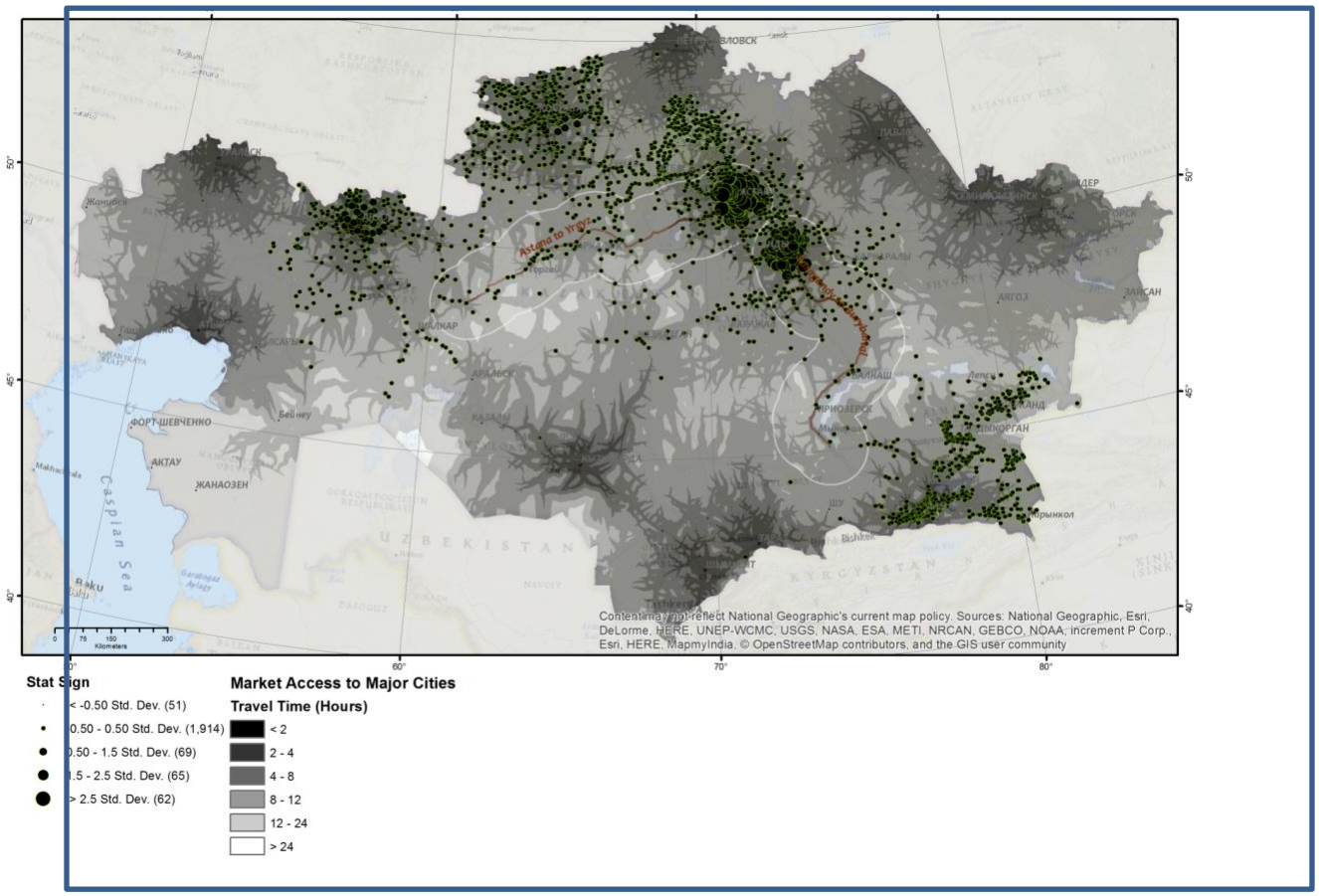
Settlements located in the catchment area

16. The construction of the road corridor will stimulate investment and industrial activity in parts of the entire alignment. This should result in significant multiplier impacts to the local economy in terms of higher municipal GDP and increased tax revenue. By stimulating investment and facilitating inter-regional trade, the project will contribute to regional development, alleviating the existing economic isolation of some settlement and potentially enhancing productivity levels for agriculture, which are significantly lower than those of other sectors. In this regard, the project is expected to contribute to increased economic production, as a result of improved accessibility, and increased productivity, thanks to lower costs of transport.

Firms utilizing the future corridor

17. Another beneficiary of greater connectivity, especially to Astana and the Caspian Sea, and lower transportation costs are companies, small business, farmers and craftsmen. Easier access to the capital opens new opportunities in terms of new markets where goods produced in the region can be sold. Lower transportation cost implies that the goods do not loose there competiveness in terms of price as the products travel further from the region. This too should improve household budget constraints as additional income could be expected to be gained from improved access to markets. While added demand for goods tends to put upward pressures on regional prices, it is expected that more supply needs of local dwellers are met thanks to lower transportation prices.

Figure 10: Firms along the CWP Corridor compared to market access to major cities



18. A study from India[38] found that the Golden Quadrilateral Program, which aimed at improving the quality and width of existing highways connecting the four largest cities in India, decreased transportation obstacles to production, reduced average stock of input inventories, and a higher probability of having switched the supplier who provided them with their primary input. The Centre-West Corridor should substantially help reduce some cost drivers for sectors that are key in the local economy, particularly mining and oil, metallurgy, and agriculture. This is so because the construction of new corridors not only reduces the geographic distance between suppliers, distributors, retailers and customers, but improves capacity utilization, access to technology, and the degree of vertical integration within a specific value chain. Hence, the project could create cost significant cost advantages and economies of scale for producers, shippers of goods and distributors.

Small scale farmers

19. The agricultural sector will be an important beneficiary of the corridor as farmers in the project area will be able revisit their planning and business development approaches, as they will have reduced travel cost and time, and gain access to new markets. This will enable them to sell their fresh produce in markets, preventing wastage and encouraging more frequent trips to larger markets to sell their perishable goods. The project will enable farmers to take advantage of

[38] Data, Suagato (2008), "The Impact of Improved Highways on Indian Firms". World Bank Group.

cheaper inputs as well as new technologies and farming practices that were previously unavailable.

Summary of Development Plans for Arkalyk, Amangeldy, and Torgay

Information on Arkalyk town of Kostanay Oblast
for Implementation of the Center West Regional Development Road Corridor Project.[39]

Background
Arkalyk was founded in 1956. It is located in the South of Kostanay oblast. The town population as of January 1, 2014 was 41.622 thousand people.

Mineral and raw material base of Arkalyk town is represented by deposits of bauxites, lead, nephritoids, marble, clay, building stone and sand. Agricultural products are produced and the list of enterprises processing them is being expanded (grain, flour, grits, confectionary and bakery products, vegetable oil).

Economy
Economic status of Arkalyk town is determined by 2 town-forming enterprises: Torgaisky bauxite ore deposit of "Aluminium of Kazakhstan" JSC (is functioning partially) and "Alyuminstroy" LLP (regional enterprise with a well-developed building base, with 587 people employed).

Agrarian sector is not only economic but also social component of the region, because 18 rural settlements enter into the composition of the town. 388 agricultural organizations carry out their activities at the town area. Increase of livestock production in perspective is planned by means of extension of livestock and poultry population including breeding-stock, and through improved soil fertility. In perspective it is planned to build a feed lot and a slaughter unit.

Unemployment rate is quite high and is equal to 6.5%. It is planned to create new jobs in the town by means of implementation of large investment projects " Construction of a wind electric power plant with capacity of 48 MW near Arkalyk town" (10 jobs will be created in the course of its operation), "Construction of pilot concentrating plant of "Mayatas" LLP" (creation of 200 jobs), construction of "Arkalyk-Shubarkol" railway line (572 jobs will be created in the course of its construction and 120 jobs – in the course of its operation).

Opening of a transit railway corridor on August 22, 2014 is a new promising direction of economic activity and will provide railway exit to Zhezkazgan city and southern regions of the country.

Open market will allow to increase production output produced by the town enterprises. Besides that a cheap coal supply to the city will be provided.

With the purpose of further development of transit potential of the town it is necessary to implement the project "Reconstruction of "Zhezkazgan-Arkalyk" section of "Petropavlovsk-

[39] All information are taken from open sources, mainly from the Development Plan of Arkalyk

Arkalyk-Zhezkazgan" republican road (length is 329 kilometers, creation of 20 jobs). Unsatisfactory condition of "Arkalyk-Zhezkazgan" section of 205 kilometers length and "Arkalyk-Derzhavinsk" section of 110 kilometers length, by means of which connection with the South, Center and North of the country is guaranteed, is one of the problems faced by Arkalyk region for its development and development of small business.

Funds for design and estimate documentation for "Zhezkazgan-Petropavlovsk" motor road are foreseen in 2014, construction works are planned from 2015. 40

From 1998 the city airport does not work but *akimat* of Arkalyk town addresses the issue of resumption of flights. Upon reconstruction of the airport flight strip, air communication with the regional center will be provided to perform special flights and work of air medical service by means of small-sized planes and helicopters. Thus, implementation of these projects in coordination with the railway line has positive impact on development of logistics potential of Arkalyk town.

Tourism

Near Arkalyk town there is Naurzumskiy nature reserve (zapovednik) and Sarykopinskiy wildlife reserve (zakaznik). It provides opportunities for development of ecological tourism in this region. At present *akimat* of the town carries out work on studying opportunity to open an ornithological center to control birds' migration routes. Also in association with "Kazinturokhota" LLP opportunities appear to open additional tourist routes for the region visitors considering local flora and fauna.

Opportunities

Potential opportunities for diversification of the town economy are related to implementation of investment projects in the framework of the State Program of Accelerated Industrial and Innovative Development of the Republic of Kazakhstan, "Business Road Map 2020" State Program and the Program of Regions Development 2020. These activities include:

Project 1. Modernization and development of a poultry factory focusing on production of eggs, with production capacity up to 300 mln. eggs per year - "Agrointerptitsa" LLP with creation of 500 permanent jobs.

Project 2. Construction of a breed livestock multiplying farm and a feed lot for 3000 heads of cattle in Arkalyk town - "Nur-Zhailau NS" LLP.

Project 3. Construction of a wind electric power plant with capacity of 48 MW near Arkalyk town.

Support to SME:

1. Organization of work of the Regional Coordination Council focused on the projects review for subsiding of entrepreneurs of Arkalyk town.

[40] http://kazautozhol.kz/zakupki/zakupki-po-byudzhetu-goszadaniya/item/2605-protokol-ob-itogakh-zakupok-rabot-po-rekonstruktsii-uchastka-avtomobilnoj-dorogi-zhezkazgan-petropavlovsk-km-946-954-i-obkhod-g-petropavlovsk-km-11-8-na-uchastke-shchuchinsk-kokshetau-petropavlovsk-gr-rf-i-yj-puskovoj-kompleks

2. Review and approval of the projects to provide grants for establishment of new productions on a competitive basis.
3. Realization of measures of the State Partner Program for Development of Small and Medium Business.
4. Assistance in development of entrepreneurship in Arkalyk town with participation of the International Business Academy (Almaty city).

Information on Amangeldy Rayon of Kostanay Oblast
for Implementation of the Center West Regional Development Road Corridor Project.[41]

Background

As of January 1, 2015 its population is equal to 17,166 people including 10.4 thousand of economically active population. The rayon center is Amangeldy village, its population is 8.1 thousand people. Distance to the oblast center is 420 kilometers; distance to Astana city is 608 kilometers (about 8 hours' drive). Administrative division of the rayon: 11 rural districts, 30 rural settlements. Total area of Amangeldinskiy rayon is 2,250,988 ha.

Economy

Agriculture is the first core sector of material production of the rayon. As of January 1, 2015, 391 peasant farms and 27 LLPs are engaged in agriculture. Gross agricultural output as of 01.01.2015 made up KZT 6,927.3 mln. including: crop production – KZT3,502.5 mln., and livestock production – KZT 3,424.8 mln.

Overall **862 small businesses** are registered in the rayon. **836** entities (97%) run business[42].

Main objectives of the rayon development plan:

- Scaled and systematic attraction of investments to development of agricultural sector and establishment of modern productions for maximum agricultural products processing upon realization of activities regarding improvement of investment attractiveness of the agricultural complex of this rayon.
- Development of market infrastructure meant for rendering assistance for agricultural producers on the issues of products profitable sales.
- At the area of Aksay rural district there is Orlovskoye brown coal deposit with supposed coal stock equal to 1 bln.tones. For implementation of this investment project in Social Entrepreneurial Corporation "Tobol" the work is carried out with investors represented by "Assets Coal" LLP.
- At the area of Urpekskiy rural district there is Zhylanshykskoye oil deposit with supposed stock equal to 40 mln.tones. Work is carried out with investors represented by "NORTH OIL" LLP.

Tourism

In terms of touristic attractions, there are some historical heritage objects.

To save biodiversity of ecosystems of semi-desert steppes and northern deserts of Central Kazakhstan, to save the key places for lambing and wintering, ways of migration of the biggest Betpak-dala saigas population, "Altyn-Dala" state natural reserve is operated, which area is equal to 489,776 ha. This area covers steppes, sandy lands and wetlands that are important inhabitations for many wild animals, especially for saigas.

[41] All information are taken from open sources, mainly from the Development Plan of Amangeldinskiy rayon
[42] http://amangeldy.kostanay.gov.kz/ru/economic/2015?node=7170

Opportunities

Perspectives in case of implementation of the Center West Regional Development Road Corridor Project:

1. Opportunity for development of transportation and logistics infrastructure.
2. Solution of the issues regarding agricultural products selling.
3. Entrepreneurial activities development by means of new jobs creation.
4. Tourism development.

Information on Zhangeldy Rayon of Kostanay Oblast
for Implementation of the Center West Regional Development Road Corridor Project. [43]

Background

Dzhangeldinskiy rayon is located in the south of Kostanay region. It was founded in 1927. The rayon total area is more than 37.6 thousand square kilometers. It borders rayons of Karaganda and Aktobe oblasts. The rayon center is Torgay village. Dzhangeldinskiy rayon includes 13 rural districts and villages. The total number of the district settlements is 23.

As of January 1, 2014 the rayon population was equal to 13,776 people. Comparatively high negative migration balance is observed in the rayon. Population density is 1 person per 0.4 square kilometer. The population of Dzhangeldinskiy rayon is mainly engaged in livestock production, melon and wheat growing as well as trade.

Economy

The main priority of the policy of the region forced industrialization is implementation of investment projects in agricultural sectors, in particular, livestock production development.

In the context of industry this rayon is one of weakly developed districts of Kostanay oblast. A little more than 80 people are employed at industrial enterprises. Wages at industrial enterprises are lower than the average wage level over the rayon by 27.2%.

Thanks to availability of hot springs for mud therapy at the rayon area, summer recreation is mainly developed. Disadvantages include lack of developed infrastructure and distance from the oblast center.

For sustained development of economy, modernization of transportation and communication network is required. Reconstruction and thorough repair of hard-surfaced motor roads of oblast and rayon significance; improvement of surface types; development of road-side car service level. This rayon due to its geographic location is the farthest from the oblast center, that's why roads quality would significantly shorten time needed to reach the oblast center. Average time spent to reach the oblast center is 7-9 hours by car and 9-10 hours by bus. It is also difficult to transport seriously ill patients if they are sent to the oblast center for medical treatment.

It is supposed that the southern direction of Astana-Aktobe-Aktau highway will pass through Dzhangeldinskiy rayon that would give powerful momentum to development of this rayon.
Road traffic accident level is still high and has a tendency to grow. The proof of that is the stated increased number of accidents in the country as a whole and in the oblast, including Dzhangeldinskiy rayon. At the area of Dzhangeldinskiy rayon 11 road traffic accidents are registered in 2014. The reasons for accidents are poor discipline of drivers violating Driving Regulations, absence of relevant road signs in the streets in villages or non-correspondence of existing road signs to the state standard requirements.

[43] All information are taken from open sources, mainly from the Development Plan of Zhangeldy rayon

The main activity in the district is livestock production. More than 90% of agricultural production is accounted for by private backyard.

In crop production there is a number of problems impeding development: absence of large entities fully engaged in crop production; extensive technologies for crop production; low technical level of equipment of production processes of strain testing; low efficiency of irrigated lands usage; scientifically grounded agro-technologies are not observed that precondition low crop yield of agricultural crop; absence of modern technically equipped storage warehouses for vegetables, fruit and potatoes, their preparation and processing is not tuned; old age and reduction of areas of perennial plantations of fruit and berry crops.

For efficient crop farming, preservation and recovery of soil fertility further fertilizer stimulation is necessary (except organic fertilizers).

Growth in number of cattle and poultry in all categories of farms is observed in livestock production and commercial poultry production sectors.

There is a number of restraints: about 90 percent of agricultural livestock is in private backyards; a share of breeding livestock is still low, primitive technologies for livestock management and feeding, low level of mechanization and automation of the processes in livestock production; insufficient development of specialized farms with medium-and large commodity production; lack of sufficient feed concentrates.

Tourism

The most developed recreation type at the rayon area is summer recreation. The reason is that the recreation places and hot springs located along the river and lakes are of seasonal nature due to inability to arrange winter recreation. In the district there are two functioning hot springs of health-related character in Kargaly settlement and near Akkol village where one can get mud therapy and sunbathing and etc. Hot water temperature at hot spring is up to 57 degrees in average.

To identify the main problems SWOT analysis has been carried out:

Strengths

- Availability of hot springs for mud therapy. Earlier analyzed data evidence of unique character of hot springs. Recognition of hot spring in neighboring countries.

Weaknesses

- Absence of developed tourism infrastructure.
- Distance from the oblast center; this fact does not attract investors for further development and contributions.

Opportunities

- Creation of new jobs in tourism sector.
- Development of tourism infrastructure.
- Increase in tourists flows (inbound and domestic tourism).

Threats

- Reduction of tourists flows.
- Low level of investment activities.

Opportunities

The main goals of the rayon economy development are: 1) development of industrial potential; 2) growth of competitiveness of agricultural sector in volume; 3) improvement of business environment; 4) development of domestic trade; 5) improvement of investment climate; 6) investment development; 7) arrangement of conditions for sustained development of domestic production of competitive goods, works and services, and their promotion in the domestic market.

The goals of agricultural sector development will be reviewed more detailed as this sector is one of top priority for the rayon. For the purpose of growth of competitiveness of agricultural sector in volume it is necessary to ensure food security of the rayon through:

-increase in volume of crop production and livestock production output;

-increase in quality of agricultural products for the purpose to increase their competitiveness;

-implementation of the following programs: “Sybaga”, “Altyn Asyk”, “Kulan”, “Employment Roadmap 2020”;

-active support by the government of livestock production sector and other labor-intensive sectors of agrarian production, and technical and technological re-equipment of agricultural producers;

-attraction of investments to development of livestock production and establishment of modern productions for maximum processing of agricultural products while realization of activities aimed at increase of investment attraction of agro-industrial complex of the rayon.

-implementation of investment projects of agroindustrial sector: feedlots, processing shops, storage warehouses for vegetables.

Annex 7: Building Climate Resiliency

Climate Change Vulnerability Context

The Republic of Kazakhstan is located in north-central Eurasia and is the ninth largest country in the world. Kazakhstan's terrain is diverse, with the country situated in four climate zones: forest-steppe; steppe; semi-desert and desert. It is estimated that around 75 percent of the country is at increased risk of adverse environmental impact to climate change.

Kazakhstan faces climate change challenges, increasing pressure on natural resources and assets such as water, land, biodiversity and ecosystems, with rising costs for key development sectors, such as agriculture and energy, as well as for economic and population centers (through weather-related hazards and impacts on human health). According to the country's latest National Communication to the United Nations Framework Convention on Climate Change (UNFCCC)[44], mean annual temperature has risen steadily over Kazakhstan, on average at a rate of 0.28°C per decade over the last 70 years — a rate of warming much higher than the global average. Further, the south – west and south – east regions of Kazakhstan are experiencing more frequent flood hazard.[45]

With respect to the road sector and the proposed project corridor in particular, the most salient climate risks are related to increased temperature and more frequent weather events. Climactic events can accelerate road deterioration, impact mobility, and increase remoteness of rural communities. Much of the road is in poor condition—about 60 percent of republican roads require major rehabilitation and proper maintenance. Moreover, the feeder road serving the rural population is not fully developed, and is characterized by poor conditions and a low service level, especially during winter. The greatest concerns revolve around a cluster of extremes, such as heavy snow, rainfall and flooding or heatwave and drought, with implication for planning, design, construction and maintenance of road infrastructure. Poor maintenance aggravates the problem. More intense rains can stress roads, with sub-grade pavement becoming de-stabilized and retaining walls and abutments becoming weaker. Flooding can trigger landslides and slope failure, washing out roads. Snowmelt during spring, extreme floods of meltwater during spells of hot weather, or permafrost thawing can also damage roads. Intense heat or drought can lead to soil settling beneath key structures and roads, and extreme temperature alone can accelerate road deterioration. Additionally large winter/summer temperature gradient, and natural hazards on the rise are putting the road infrastructure under pressure.

Specific Project Activities Addressing Climate Resilience

The proposed project considers climate resiliency along road sections prone to extreme weather conditions and natural disasters. Adaptation to the adverse impacts of climate change is a priority for the Government of Kazakhstan, as stated in the Intended Nationally Determined Contributions submitted in 2015 to the UNFCCC. In this project, in order to address the vulnerability to climate change, the road designers have adopted some climate resilient road

[44] National Communication to the United Nations Framework Convention on Climate Change (UNFCCC), 2015 http://unfccc.int/files/national_reports/annex_i_natcom_/application/pdf/kaz_nc3,4,5,6_eng.pdf

[45] World Health Organization (WHO). Protecting Health from Climate Change in Kazakhstan. http://www.toplotnibranovi.mk/en/downloads/publications/Republic_of_Kazakhstan_Protecting_Health_from_Climate_change_en.pdf

design standards, with specific measures for road pavement construction to better withstand extreme seasonal temperature differentials. In addition, snow and wind barriers and an elevated road formation are approaches being used to ensure the road performs better during snow and floods. These features will help the road survive during extreme weather conditions such as intensive snow, flood, and wind, as well as large winter/summer temperature gradient. Moreover, modern road-side service facilities will provide emergency services and evacuation points for road-users caught in extreme events.

Project Adaptation Co-benefits Quantification

The project adaptation co-benefits are calculated based solely on the component 1. Three main features of road construction that are adopted to address climate issues including: extra height of embankment (to address extensive rain, flood and snow), Stone Mastic Asphalt (to address extreme temperatures), and snow/wind barrier. Given the detailed designs of the proposed road are not yet available, the Bill of Quantity from ongoing civil contracts from a comparable project (the East West Road Project) is used to estimate the cost of these features in comparison with the total cost. It is found that in general 8.7 percent of the total road construction cost of is used to make the road climate resilient.

Table 7.1 Cost Estimate of Climate Resilience Designs

	Cost of II-category road (2 lane) per 1km (KZT)	Cost of II-category road (2 lane) per 1km (US$)[46]	Percentage of Total Cost[47]
Embankment	6,688,275	21,505	2.4
Stone Mastic Asphalt	10,757,812	34,591	3.8
Snow-Retaining fencing	7,044,057	22,649	2.5
		Total	8.7

Given 8.7 percent of the loan in component 1 (USD974.48 million), USD85.26 million can be attributed to the climate resilient designs. Compared with the total project loan USD 1 billion, the percentage of adaptation co-benefit will be 8.5 percent.

Table 7.2 Adapationa and Mitigation Co-benefits

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %
Transportation	Rural and Inter-Urban Roads and Highways	100	8.5	0

[46] 1 USD is equivalent to 311 KZT.

[47] The total construction of 1km II-category road is about 0.9 million USD

Annex 8: Project Map