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The Republic of Kazakhstan

**SOUTH WEST ROADS PROJECT:
WESTERN EUROPE – WESTERN CHINA
INTERNATIONAL TRANSIT CORRIDOR
(CAREC-1b & 6b)**

**ENVIRONMENTAL & SOCIAL IMPACT
ASSESSMENT**

Executive Summary

February 2009

Background:

The overall goal of the Government's Western Europe to Western China (WE-WC) Corridor development program is to improve transport efficiency and safety, and promote development along one of Kazakhstan's main strategic road transport corridors. Transport and trade efficiency will be improved through provision of better infrastructure and services along the entire corridor to reduce transport costs, and through gradual reform of the entities responsible for all categories of roads. The Bank will finance a major upgrade of road infrastructure for the portion of the Corridor from Shymkent to Aktobe/Kyzylorda oblast border (1,025 km) (South West Highway) as a Specific Investment Loan. The other cooperating International Financial Institutions (IFIs), Asian Development Bank (ADB), European Bank for Reconstruction and Development (EBRD) and Islamic Development Bank (IDB), involved in supporting development of the corridor will finance other sections of the construction program.

The project will also assist the government to strengthen the capacity of agencies responsible for managing the national road network, and to prepare and implement a road safety and road service improvement action plan that will provide system-wide benefits. The project will serve local travel as well as international transportation of general cargo and other goods produced locally and in the region (Tajikistan, the Kyrgyz Republic and Uzbekistan). Institutional development measures include the introduction of an efficient road management system incorporating modern methods for planning and executing road maintenance, and strengthening the capacity of the Committee for Roads (the Committee) within the Ministry of Transport and Communication (MOTC) to efficiently implement all investments.

The preliminary road design prepared by the MOTC envisaged the widening of the road and the construction of bypasses around some of the towns along the WE-WC Corridor. The Feasibility Studies financed by the government, which included a preliminary environmental assessment report (pre-EA), based on the national laws of Kazakhstan were completed in December 2007. In 2008 the preparation of a Resettlement Policy Framework (RPF) that applies to the entire Corridor, as well as an Environmental Assessment Framework (EAF) for the entire Corridor were accomplished under a separate assignment coordinated by ADB and the World Bank.

Project Description:

The project has five components, of which the first two entail the most relevant environmental and social impacts. The complete description of the project can be found in section 3, as well as in Annex 1 of the Main Report.

Component 1: Upgrade and reconstruction of road sections within Kyzylorda Oblast (excluding the bypass to Kyzylorda). This component will finance the upgrade and reconstruction of road sections in Kyzylorda oblast totalling about 834 km with a design oriented towards increased road safety.

Component 2: Upgrade and reconstruction of road sections within South Kazakhstan Oblast, including bypasses at Kyzylorda and Shymkent cities. It is proposed that the entire alignment between Kyzylorda and Shymkent will be upgraded from 2 lanes to 4 lanes.

Component 3: Project Management Consultants (PMC). The consultant services will assist the Committee with the management of all activities associated with the projects as part of a joint

effort by all IFIs and the Government to ensure efficient and transparent implementation of the WE – WC Corridor program. The PMC will also impart transfer of knowledge to MOTC staff as part of the capacity building effort.

Component 4: Institutional Development. The component comprises consulting services, technical studies, the provision of equipment, and training to strengthen the internal management and operations of the Committee, particularly to improve road sector planning, programming, budgeting, implementation of safeguards mitigations, and to improve the efficiency of road maintenance practices. Technical assistance will be provided for the preparation of a road safety improvement plan and an action plan for the development of road services along the Corridor.

Component 5: This will finance consulting services for supervision of civil works under Components 1 and 2, and will also include review of detailed engineering designs and supervision of the implementation of Environment Management Plans prepared.

Environmental Conditions:

The environmental conditions for the project are described in detail in section 4 as well as Annexes 5-1 to 5-14 of the Main Report. The project area is characterized by arid climate, sparse vegetation, few year-round surface water courses and large areas with naturally hyper-saline soils. Saksaul forests, which are adapted to dry, saline conditions with extreme temperature differences, play an important role in soil stabilization and erosion control but are not found near the project corridor, nor the bypass alignments. The landscape in the northern project sector is very arid, barren, hardly vegetated and prone to wind erosion, dust generation and moving sand dunes. Surface drainage exists mainly seasonally, when flash floods can occur and draining waters can have a high erosion potential. The landscape has a very soft relief with wide valleys and basins, separated by slightly elevated plateaus. Land use is restricted to low density animal grazing in the natural environment (mainly camels, sheep, goats and some cattle). Permanent settlements are extremely sparse. South and east of Zhosaly the climate is less severe and the settlements are more common, usually clustered around former state farms and railroad facilities. The steppe vegetation, dominated by grassland with small patches of forest near rivers and in valleys, is interrupted by large tracts irrigated with water from the Syr Darya River. The area between Turkestan and Shymkent is used extensively for agriculture and horticulture.

In the section between the cities of Shymkent and Aral the surface water resources in the project area are dominated by the Syr Daria river, which flows in a NW direction draining into the Aral Sea. While this river is generally a long distance away from the alignment, the project foresees one new bridge near Kyzylorda as well as the rehabilitation of an existing one near Zhosaly. The drainage network is sparse in perennial natural streams and rivers, there are relatively few tributaries crossed by the alignments, which flow mostly in SW directions towards Syr Daria. In the southern part of Kyzylorda oblast artificial irrigation canals form the major features of the surface drainage network. North of Aral no more perennial natural streams and rivers are found and there are frequent basins and depressions without drainage, where water accumulates in the wet season (spring) and evaporates in summer.

Groundwater resources along the alignment are usually shallow, near surface aquifers in loose sediments such as sand and gravel. Some aquifers are used for irrigation, human and animal consumption, but many are naturally highly saline or already negatively impacted by

anthropogenic activities, such as irrigation and intense agriculture. Thus most near surface aquifers are highly mineralized and high in salinity, as well as being impacted by diffuse pollutants from agriculture.

Impacts:

Section 5 of the Main Report deals with environmental impacts and corresponding mitigation measures. The environment along the alignment between Turkestan and the Kyzylorda/Aktobe Oblast border is not sensitive or particularly valuable in terms of biodiversity and ecological significance. Most of the land is arid steppe to semi-desert landscapes with few river crossings, limited wetlands (partly natural, partly irrigated lands) and no forests, sensitive natural habitats nor protected areas directly impacted by road construction. An initial review commissioned by the Government and complemented by this study suggests there are no known sites or structures of cultural significance affected by the planned civil works, although this will be further reviewed during the implementation. Of course there is always a possibility of archaeological "chance finds" during construction works, thus clear procedures will be established jointly with the EMPs for each individual lot.

There are no protected areas directly impacted by the alignment, and only few sensitive natural habitats, rivers, wetlands, forests or protected areas might be indirectly affected. No protected or endangered species will be harmed. The bulk of required land (e.g. for widening the highway or for construction of bypasses, bridges and intersections) is Government owned and is currently unoccupied and not used for economic purposes. A detailed social analysis was conducted by a parallel study and abbreviated resettlement plans (ARPs) prepared for those people affected by the project.

The major part of construction works, except bypasses around settlements and Kyzylorda city, will remain confined within the existing right-of-way. Thus the Project's investments do not pose unprecedented or significant adverse impacts on the environment that cannot be mitigated. Several aspects of the project require enhanced attention: (i) segments of road widening from two to four lanes with potential sections of new alignments close to but outside the existing right-of-way, (ii) construction or rehabilitation of several large bridges, construction of bypasses and large intersections; (iii) potential for induced / indirect impacts such as the production and transport of road construction aggregates and asphalt. These identified environmental issues are concentrated around road sections between Shymkent and Kyzylorda, where most road widening and bridge (re)construction, as well as several bypass sections are planned. Another area of expected increased impacts is the bypass around Kyzylorda, where a new road corridor longer than 20 km will be constructed, as well as a new bridge over the Syr Darya River. At Kyzylorda the alignment will cross through wetland areas (however not formally protected) for several km, which will require enhanced organizational and constructive measures for minimizing local impacts.

Mitigation Measures:

Most impacts by the road rehabilitation and reconstruction project that cannot be completely avoided will be offset or mitigated with readily available environmental management measures which have been developed specifically for the road sector and implemented in many

international roads projects. In the case of the road section between Shymkent and Turkestan, the key impacts are anticipated to include the conversion of land, impacts on soil and vegetation, emissions in the form of noise, dust and exhaust gases, associated impacts of borrow pits, construction of haulage roads, storage areas, and camps, temporary impacts from civil construction works, aggregate and asphalt plants, transport and limitations for road use. Measures to address these impacts are addressed in an environmental management plan (EMP, see section 7 of the Main Report) and monitoring plans (section 7 of the Main Report).

The design stage specific EMPs prepared for each road section will be updated as the final designs are prepared by the supervision engineers for the construction bidding documents. The mitigation measures for the project are explained in sections 5.3, 5.4 and 7 of the Main Report, in particularly Table 7-2 (Category A EMP) and Table 7-4 (Category B EMP).

Land acquisition and Resettlement:

Most of the reconstructed road sections will follow the existing alignment, staying within long-established rights of way that have not been subject to encroachment. The exceptions are bypasses that will be constructed around populated areas. The planned by-passes will require land acquisition, although much of the land is government property. The feasibility study estimated that bypasses would require the demolition of 7 residences and 31 other structures in South Kazakhstan and Kyzylorda Oblasts, as well as requiring over 3,000 ha for permanent use, mostly for bypasses and future intersections. Preliminary data from the detailed designs indicate that displacement will be greater than anticipated in the feasibility study, with 152 structures in South Kazakhstan Oblast and 17 structures in Kyzylorda Oblast earmarked for demolition. Most of these are reported to be non-residential structures. The total land for which owners and other users are to be compensated is approximately 360 ha in South Kazakhstan Oblast and 736 ha in Kyzylorda Oblast. Local governments generally have reserved land and the Land Code in Kazakhstan gives preference to land swapping and replacement of buildings, rather than cash compensation.

Additional land will also be required for temporary use during construction. The feasibility study estimated that around 3,600 ha along the entire Corridor would be need for temporary use (staging areas, borrow pits, construction bypasses, and the like), for which private owners will be compensated and the land returned to its original condition after use. Illegal or temporary occupation or use of land along the roadway or within the right-of-way is uncommon and therefore the project will incur minimal removal of unauthorized structures from the right-of-way in carrying out the rehabilitation works, with compensation of temporary or illegal land users. Most of the land is reported to be on long term leases issued by the government.

The Borrower prepared a Resettlement Policy Framework prior to Appraisal providing detailed information about procedures and standards set in Kazakhstan for the acquisition of private land and rights-of-way and identifies any additional provisions that will be undertaken to assure compliance with OP 4.12. In parallel to this environmental impact assessment, a Resettlement Action Plan (RAP) has been prepared by consultants hired by the Borrower. The RAP will also be developed and detailed as the design is finalized ahead of the bidding for construction contracts.

Consultations:

Up to this point two stages of public consultations were carried out in communities along the alignment. In October 2008 consultations on the general project concept as well as the TOR for the environmental and social assessments were carried out in Turkestan and Kyzylorda (detailed account in Annex 11). In January 2009 the draft EA report as well as the draft Abbreviated Resettlement Plans were presented in a series of consultations in about 10 communities along the alignment.

Two of the consultations were observed by the Bank team and found to be open, transparent and effective in fostering free and unencumbered expression of opinion by the affected stakeholders. There were significant concerns raised about some of the design features (e.g. Temirlanovka Overpass) and many constructive proposals received from the local population on the presented design and its environmental and social performance. Such proposals included solutions for traffic safety (especially pedestrian safety), animal crossings, noise protection and community cohesion. The proceedings and results were summarized in a Consultation outcome report (see Annex 12), which is the basis for communicating required design changes from the Committee for Roads to the design engineers responsible for individual lots. Regarding the overpass in Temirlanovka village the Committee for Roads has been requested by the World Bank, that in view of the clear outcome of the consultations, alternative designs must be prepared that allow the alignment to bypass the city and avoid the construction of the overpass.

Implementation Arrangements:

This EA report has been developed in parallel to the stage of detailed engineering designs for the road corridor. However, the engineering design lagged behind the progress of the EA report and has not yet been finalized for all project components and sections. This EA report provides general coverage of the entire corridor and more detailed coverage of those segments for which detailed design has been completed or progressed to an advanced stage. Parts of the EA report thus are still generic and do not describe all environmental mitigation, management and monitoring measures with implementation ready detail. However, the EA report does comprehensively address all required actions for environmental due diligence in the project and provides clear technical and procedural guidance on how to achieve good environmental practice and performance.

This EA report provides a platform, on which subsequent detailed EMPs for the implementation phase (civil works) will be built. These will be contractually required to be produced by the Contractors for each individual lot and will be based on the detailed design which is currently in the process of finalization. TORs for these lot-specific EMPs will be produced by the Borrower for all lots and will be approved by the World Bank. They will become part of the bidding package and every bidder will be required to include the elaboration and implementation of environmental management and monitoring activities into the implementation design and price quotation. The Loan Agreement will require the production of an EMP compliant with international good practice and acceptable to and approved by the World Bank will be a prerequisite to the commencement of job site installations, as well as all temporary and the main works.

Summary Table on Key Impacts and Mitigation Measures

Road Section *	Ecosystem Type / Land Use	Selected Key Impacts	Key Mitigation Measures**
Shymkent to Turkestan	arid to temperate climate; agriculture and horticulture, most densely populated	bypasses of Shymkent City and several villages (incl. Temirianovka), major bridge rehabilitation and new bridge over Arys River, road widening from 2 to 4 lanes	surface water protection and pollution control for Arys River during bridge rehabilitation and / or construction
Turkestan to Kyzylorda	arid climate; steppe vegetation, mixed animal husbandry and agriculture, population density decreasing	short bypasses of several villages, bypass of Turkestan City, bypass of Kyzylorda City including a new bridge over Syrdaria River	protection and restoration of irrigation infrastructure esp. at new bypasses, traffic safety management system for Turkestan bypass, surface water protection measures for Syrdaria river crossings at Kyzylorda, protection of wetland habitats in area of Kyzylorda City bypass
Kyzylorda to Aral	arid climate; in South intensive irrigation agriculture mixed with sparse grazing ranges, very saline soils, sparsely populated	short bypasses of several villages, rehabilitation of one bridge crossing of Syrdaria River	surface water protection and pollution control for Syrdaria River during bridge rehabilitation near Jozhaly, control of land conversion and material sourcing for bypasses
Aral to Oblast Border	very arid climate, semi-desert, virtually unpopulated, low intensity animal husbandry decreasing N-wards	road rehabilitation on existing alignment only (no widening or bypasses)	standard mitigation measures only

* See map next page

** Standard mitigation measures not explicitly mentioned are: (a) during *construction*: minimization of land take, environmental due diligence during construction (dust and emission control, soil conservation, surface and groundwater protection), decommissioning, restoration / re-vegetation of construction sites, permitting and inspection of borrow areas, traffic safety; (b) during *operation*: drainage and runoff management (settlement and evaporation ponds), safe crossings for pedestrians and livestock, noise control through physical (barriers) and managerial means (speed control), road servicing including litter collection and removal. Details are in the ESIA report in sections 5.4 and 5.4.