Proposed
CAREC Transport Sector Strategy

Executive Summary

For information at the

6th Ministerial Conference on
Central Asia Regional Economic Cooperation
2-3 November 2007
Dushanbe, Tajikistan

ABBREVIATIONS

ADB	Asian Development Bank
ADDY	Azerbaijan Devlot Demir Yollari (Azerbaijan National Railways)
AFG	Afghanistan
AP	Action Plan
ATC	Air Traffic Controller
AusAID	Australian Agency for International Development
AZB	Azerbaijan
BOMCA	Border Management Central Asia (EU and UNDP)
CA	Central Asia
CAREC	Central Asia Regional Economic Cooperation
CR	China Railway
DFID	Department for International Development (United Kingdom)
EBRD	European Bank for Reconstruction and Development
EU	European Union
EURASEC	Eurasian Economic Community
FSU	Former Soviet Union
GDP	gross domestic product
GMS	Greater Mekong Subregion
GVC	global value chain
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
ICAO	International Civil Aviation Organization
IsDB	Islamic Development Bank
IMF	International Monetary Fund
INR	Iranian National Railway
IOM	International Organization for Migration
ITS	intelligent transport system
JICA	Japan International Cooperation Agency
KAZ	Kazakhstan
KTZ	Kazakhstan Temir Zholy
KGZ	Kyrgyz Republic
MC	Ministerial Conference (CAREC)
MI	multilateral institution
MON	Mongolia
MOTC	Ministry of Transport and Communications
MTZ	Mongolian Railway
NAFTA	North American Free Trade Agreement
OSCE	Organization for Security and Cooperation in Europe
PCs	participating countries
PRC	People's Republic of China
RF	Russian Federation
RFID	radio frequency identification
SCO	the Shanghai Cooperation Organization
SIDA	Swedish International Development Agency
SOM	Senior Officials Meeting (CAREC)
SPECA	Special Programme for the Economies of Central Asia TAJ Tajikistan
TRASECA	Transport Corridor Europe-Caucasus-Central Asia
TSCC	Transport Sector Coordinating Committee (CAREC)
TSS	transport sector strategy
TSSS	transport sector strategy study
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDP	United Nations Development Program
UN ESCAP	United Nations Economic and Social Commission for Asia and the Pacific

UNICEF	United Nations Children's Fund
UNODC	United Nations Office on Drugs and Crime
USAID	United States Agency for International Development
USCDC	United States Centers for Disease Control
USD	United States Dollars
UZB	Uzbekistan
WB	World Bank
WCO	World Customs Organization (United Nations)
WHO	World Health Organization
WTO	World Trade Organization
XUAR	Xinjiang Uygur Autonomous Region

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SECTION 1: INTRODUCTION

1. This Executive Summary provides a decennial transport sector strategy (TSS) for discussion purposes at the Central Asia Regional Economic Cooperation (CAREC) Ministers' Conference (MC) in Dushanbe, Tajikistan on 2-3 November 2007. It follows the Draft Final Report on CAREC TSS, which was reviewed at the Transport Sector Coordinating Committee (TSCC) Consultation Meeting and the Senior Officials' Meeting (SOM) held in Manila on 6 September 2007 and 8-9 September 2007, respectively. The Draft Final Report (i) describes the challenges facing the transport sector in the CAREC region; (ii) proposes principal transport corridors crossing the region; and (iii) provides some indication on the approach and measures to respond to the sector's challenges. All comments, suggestions and other inputs provided by Participating Countries (PCs) have been taken into account in preparing the TSS.

2. The Executive Summary and the more detailed Main Report formulate a TSS for CAREC. An essential part of the strategy addresses problems at border crossings. In this sense, the Strategy aims at facilitating transport and trade. It leads towards much closer integration of CAREC's trade and the transport sector initiatives. Specific measures to strengthen this union are included in the strategy.

1.1 GENESIS OF CAREC

3. It has now been a decade since the launch in 1997, of the CAREC Program –a striking example of institutional innovation. CAREC is a vibrant development partnership of a number of Central Asian (CA) Countries: Afghanistan, Azerbaijan, People's Republic of China (PRC with focus on the Xinjiang Uygur Autonomous Region-XUAR), Kazakhstan, Kyrgyz Republic, Mongolia, Tajikistan, and Uzbekistan and seven multilateral institutions (MIs) including Asian Development Bank (ADB), World Bank (WB), International Monetary Fund (IMF), European Bank for Reconstruction and Development (EBRD), Islamic Development Bank (IsDB), and United Nations Development Program (UNDP). Therefore, CAREC represents a dual partnership on the donor side and also on the recipient side.

4. The main purpose of CAREC is to promote economic development through cooperation, and thus accelerate economic growth and reduce poverty. By fostering regional cooperation in transport, trade, energy and other areas, CAREC helps the PCs pursue their economic potential and improve the quality of life for their citizens.

1.2 OVERALL VISION

5. The TSS is consistent with CAREC's long term vision of "Good Neighbors, Good Partners, and Good Prospects." Therefore, the strategy suggests that it will take good neighbors and good partners to respond to the common challenges and opportunities. The policies and projects in the transport sector, as proposed in the strategy, require partnership and cooperation for their successful implementation. The strategy indicates that there are good prospects for higher economic growth, the reduction of poverty, and the diversification of trade in the CAREC region based on the creation of reliable, safe, secure and low cost transport corridors and their transformation into economic corridors.

6. While CAREC countries taken individually are "land-locked", as a region they are contiguous and can serve as competitive transit gateways to other regions, i.e. become "land-linked". For all except the XUAR the orientation of transport corridors, especially rail, was toward markets and sources of supply in the major population and industrial centers of the former Soviet Union (FSU). This infrastructure is now aging. Also, links between the eastern XUAR and western FSU ends of CAREC were little developed. The first SOM held in 2001 in Manila affirmed that transport was the highest priority area for regional cooperation. Hence, considerable emphasis

has been placed on improving infrastructure even though the costs of both new construction and maintenance are high.

7. For most of CAREC's existence, other aspects of transport policy with a potential regional dimension such as ownership and management (restructuring, commercialization, and privatization) have received less attention. The same can be said about competition (intermodal transport, attractiveness of extra-regional corridors, anti-competitive behavior, etc.). In other words, the emphasis has been on the hardware and not software of transport sector development.

8. Delays at border crossings have been acknowledged and addressed in numerous transport sector studies, discussions, and plans. However, relatively little national and MI investment has been allocated to the problem. In fact, it has always been a challenge to achieve the right balance in terms of national, bilateral, regional, and multilateral initiatives addressing trade policy, trade facilitation, transport and energy. The present TSS proposes decisive steps towards combining transport infrastructure, management, and technology improvements with facilitation of seamless physical trade flows across borders.

1.3 THE ECONOMIC AND SOCIAL POLICY CONTEXT

9. The strategy was developed in the context of the CAREC mission to increase economic growth, reduce poverty and foster trade through regional cooperation on transport, trade, and energy. In this connection, three important factors are currently at play. First, the growth rate of GDP in the CA region in recent years has been quite respectable at around 7% per year. Second, the acceleration of policy reform including trade, transport, and energy areas is needed to continue in order to realize the full potential of the Central Asian economies. Third, the higher growth rate of recent years has not noticeably improved the living standards of the poor. In this regard, policies, programs or projects in transport or any other area should be tailored to confront the problem. At the same time, better governance is essential in CA to fully seize economic opportunities, meet the challenges of any particular sector (including trade and transport), and to ameliorate social problems.

10. The TSS takes account of current economic conditions, projections of the future and demands that will be put on the CAREC region's transport and logistics system. In fact an efficient and reliable system will make a major contribution to the realization of the region's economic potential. Hence, a two-way interaction is involved between the economy and the transport system. Indeed, previous analyses including some carried out by ADB have suggested that regional cooperation on trade policy, trade facilitation and transport is a key ingredient for accelerated growth in the CAREC region.

Afghan Truck

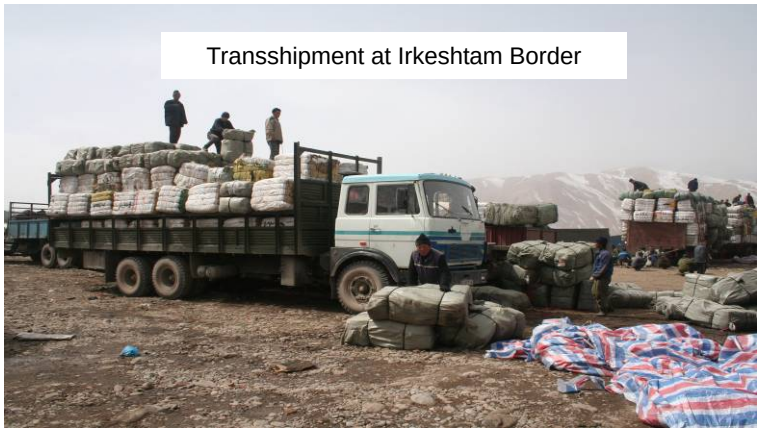
11. Other components of a policy package that would accelerate economic growth include improvements in industrial competitiveness, which can partly be linked to transport improvements. Two scenarios can be envisaged. The first may be thought of as the base case or the "business as usual" scenario while the second "closing the gap" scenario assumes a more aggressive implementation of policy reforms in several areas. Based on some acceleration of economic growth in the CAREC region since 1997 and further acceleration after 2002 fueled by the commodity boom, the prospects for the future do indeed appear good. In a "business as usual" scenario 7.5% annual growth rate could well be achieved for the next ten years. However, a well designed and effectively implemented TSS will make a significant contribution to the achievement of over 8.0% growth in the

"closing the gap" scenario. At the same time, more inclusive economic growth will also improve. This result is achieved because greater diversification occurs with the improvements in industrial competitiveness and therefore, there is less volatility in the economy.

12. The Strategy projects that trade flows for the CAREC member countries would triple by 2018 over the 2005 base, and that gross domestic product (GDP) could grow by two and one half times in that period. These are indeed impressive figures, but they do depend on effective response to meet the challenges of accelerated policy reform: increased regional cooperation, financial and environmental sustainability, and creating an efficient and reliable transport and logistics system. The last challenge involves well functioning corridors and their transformation into successful economic corridors. In fact there is little chance of achieving robust growth in trade flows if current conditions at and before the border points continue to exist. Also, there is almost no chance of export-led growth except in the oil and other natural resource exporting countries without a well designed transport and trade strategy, a requirement which the TSS addresses.

13. What are the prospects for successful economic corridors in the CAREC area? Two concepts could facilitate the transformation. The first is the industry cluster concept which would involve the exploitation of the existing CAREC resource base and the attraction of linked industries. The CAREC area's resource base provides good opportunities and good prospects for at least six industry clusters: petroleum and natural gas, minerals and metals, agrifood, agrifibre, construction, and tourism. The TSS considers the backward (inputs) linkages as well as forward (processing and distribution) linkages of these "resources" and the role of the transport sector in their emergence as full fledged clusters of industries. For example, the petroleum cluster might contain refineries and petrochemical plants and even plastics manufacturing facilities, which are all related to further processing of hydrocarbons. An important input or backward linkage in the evolution of the petroleum cluster would be oil and gas field services including exploratory drilling and geological information services.

14. The second concept relevant for the transformation of a transport corridor into an economic corridor is that of global production networks or global value chains (GVCs). A GVC integrates the full range of activities in bringing a product from its conception to its end use and ultimate consumption. This includes activities such as design, production, marketing, distribution, customer service, and recycling. The activities that comprise a value chain can be contained within a single firm or divided among different firms.


Transshipment at Irkeshtam Border

15. Integrating people, processes, and information to design and develop the right goods, manufacture them in the most suitable locations and deliver the goods to where they're supposed to go, just in time and at the right price is a powerful business concept. When value chain activities are spread over wide swaths of geographic space, they become a GVC.

16. Realization of an effective GVC requires that transport infrastructure, management, and technology must be at world class standards and operate on a best-practice basis since competition among GVCs is quite intense. Intermodal transport is always a key component in a GVC, and is emphasized in the strategy. The idea of CA participating in a GVC involving electronic products may appear premature at this moment and with the current transport and logistics system it probably is, but the region does have some of the resources needed for component production including "rare earths." Thus, the good prospects and abundant opportunities are there to be realized.

SECTION 2: EXPLOITING THE OPPORTUNITIES

2.1 CONFRONTING THE TRADE AND TRANSPORT CHALLENGES

17. Transit traffic through CAREC is growing but the region has so far only captured a small portion of the potential trade flows between Europe and Asia. Less than 1% of the PRC – Eurasia trade presently transits through Central Asia. By improving the competitiveness of the corridors in terms of transport cost and time, CAREC countries can increase their share of this traffic, and reduce the cost of trade with their own trading partners.

18. For export, import and transit, rail is the dominant mode. There are definite reasons for this. The region's economies are largely resource based. Its exports comprise a high proportion of low unit value bulk goods such as coal and raw materials transported over long distances. These circumstances will always favor rail over road transport. Also, border crossing problems and unofficial payments are reported to characterize road more than rail transportation.

19. The region has a quite well developed map of linear infrastructure. In certain sections of the corridors the initial standard of construction was inadequate for today's needs. Furthermore, problems can often be attributed to lack of maintenance over many years. The present economic rebound that CAREC is enjoying is unfortunately accelerating the decline of its transport infrastructure. The road sector has already felt this acutely. In much of the region, road asset values are declining faster than rehabilitation works can compensate. Rail has been less affected but the same problems will plague it sooner or later unless preventive measures are taken now.

20. With increased vehicle ownership and declining road infrastructure quality, a road safety crisis is overcoming the region. Again rail operations have been much less, if at all, affected until now. This good record cannot be sustained without maintenance and modernization. Demand for air transport is growing rapidly. The sector's facilities and its human resources are straining to cope with the increasing load. Safety will be jeopardized if considerable efforts are not made.

21. Overall, the region's transport sector regulations and its procedures are highly disparate. They are only slowly being aligned with best world practice. This is particularly disabling to cross border trade and transportation.

22. During the period immediately preceding the demise of the FSU the region's eastern and western transport networks resembled two "dead ends" (or "blind alleys") opening in opposite directions. Transport links between them were weak and trade flows were low. There is ample evidence both current and past that this apparent insularity can and is being overcome. The region's governments are now actively participating in initiatives such as CAREC, Special Programme for the Economies of Central Asia (SPECA), Eurasian Economic Community (EURASEC), the Shanghai Cooperation Organization (SCO) and Transport Corridor Europe-Caucasus-Central Asia (TRACECA). Some have acceded to the World Trade Organization (WTO); all participate in the World Customs Organization (WCO), UN ESCAP and other international organizations that promote trade and transport facilitation and integration.

23. Historically the region was braided by multiple routes linking vibrant centers of artisanship, trade, and learning along the Silk Road. This provided not only interfaces between the region's populations but a conduit for the flow of goods and ideas between the two extremities of the Eurasian land mass. The region is not now closely integrated into the modern global value chains, but in a sense it invented them.

24. True, the region's transport technology and logistics capacity have fallen behind that of the most modernized areas of the world. However, CAREC's populations are generally young and well educated. Its trading traditions are fast emerging, and modern technology-based logistics practices

are developing in the region. Table 1 below juxtaposes some of the apparent difficulties that the region faces with the assets that it possesses to transform challenges into opportunities. The comparison augurs well for the region being able to overcome its difficulties.

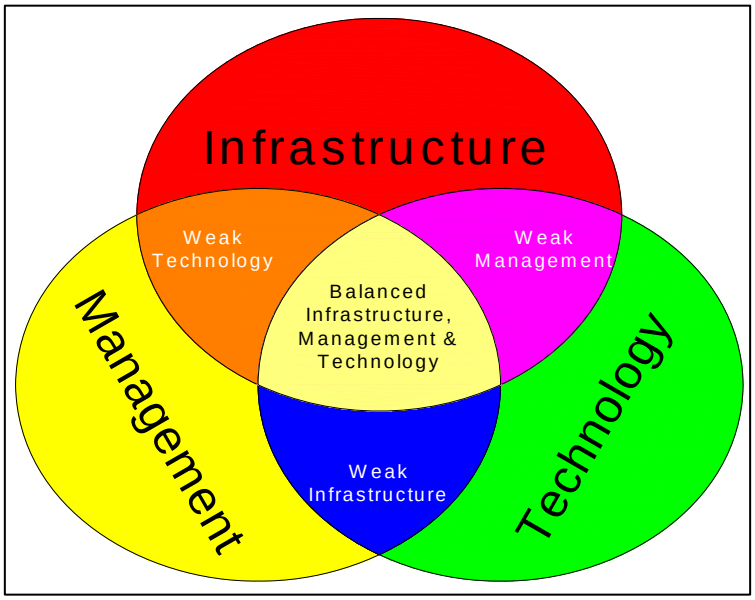
Table 1: Challenges and Opportunities

Challenges	Opportunities
Landlocked	Land-linked networks contiguous with emerging economies to the east and to the west
Globalization	A regional tradition which needs to be re-activated
Low penetration of leading edge technology	Young population with high levels of education, able and eager to adopt
Inadequate infrastructure	The basic route layout exists
Inadequate system management and legal structures	Well-proven global models are there to be emulated and improved
Economic decline	Has bottomed, and a resource based boom is developing

2.2 A BROAD WELL-FOUNDED APPROACH

25. The emphasis which the TSS places on the key transport corridors and their physical infrastructure is obviously well placed. However, there has been a growing recognition that a reliable and low cost transport and logistics system cannot be achieved through investments in infrastructure projects alone. A broad and well-balanced approach requires three pillars to operate and to maintain road and rail networks as well as air and shipping lines effectively: infrastructure, managerial excellence and modern technology (Figure 1). The same is perhaps even more true of the closely related issue of border crossing points and their effective operation. The three pillars provide equilibrium in formulating the various components of the strategy, and of the Action Plan for its fulfillment.

Figure 1: Three Pillars of Successful Corridor Performance



SECTION 3: CAREC TRANSPORT SECTOR STRATEGY 2008-2018

3.1 ORIGINS AND OVERARCHING GOALS

26. The Transport Sector Strategy has been engendered by meetings of the CAREC TSCC, and SOM and by discussions with and among the region's transport authorities and stakeholders. Past initiatives and technical assistance provided by ADB and other MIs active in the region have contributed largely to its essential elements.

27. The strategy underpins the overall CAREC vision described in Section 1.2 by reinforcing the three pillars (infrastructure-management-technology) that characterize the challenges and opportunities faced by the sector. The following policy statement provides an overall framework for the regional transport strategy:

> It is the policy of the Governments of CAREC countries to provide safe, dependable, effective, efficient, and fully integrated transport operations and infrastructure in order to support social and economic development in the CAREC region. This will be achieved by improving levels of service; minimizing costs; and improving infrastructure, management, and technology in a manner which is both economically and environmentally sustainable. In addition, the efficiency of the transport systems will be enhanced in a regional context to allow the CAREC region to exploit its unique geographical position.

28. The strategy has three overarching goals:

- To establish competitive transport corridors across the CAREC region;
- To facilitate efficient movement of people and goods across borders; and
- To develop safe, people-friendly transport systems, that are environmentally sustainable.

29. These goals are further described in the following three sections.

3.2 COMPETITIVE TRANSPORT CORRIDORS

3.2.1 Focused Development

30. CAREC populations are concentrated at nodes, separated from each other and world markets by deserts, mountain ranges and the longest land transport distances on earth. The CAREC corridors must be the arteries that nourish and allow them to develop. Their economies are growing strongly, but the region's population densities are low. The extent and lengths of their infrastructure linkages pose huge cost burdens on them.

31. Comprehensive Asian network plans of roads and railways have been drafted by the continent's nations. Ultimately they will be realized, but the 10-year time frame of the present strategy emphasizes a selective transit corridor approach. This will focus resources both for investment and for operational management. It avoids patchwork development and focuses on balanced improvement of infrastructure, management, and technology.

3.2.2 Corridor Performance Parameters

32. Within the selected corridors the transport infrastructure and its exploitation are to be developed to provide services that are:

- Reliable,

- Fast,
- Seamless between modes and across borders,
- Competitive,
- Safe, and
- Environmentally friendly.

33. Improving these parameters of performance is to be a continuous effort with progressive implementation and dynamic targets.

34. Intermodal opportunities must be exploited by removing any physical, commercial or technological disincentives to change modes where otherwise it would be most logical to do so.

35. Corridor development must be consistent, not only geographically but in terms of results. Improvements in speed, which also provoke a reduction in safety, would be a very mixed blessing.

36. Caspian Sea port and sea lane capacity must match the expected demand. Technical standards, regulatory controls, and emergency intervention capacity must be also sufficient to safely handle the dangerous cargoes carried across the Caspian and handled at port facilities. Aviation capacity must be expanded to safely match the high growth in demand.

37. To fulfill these strategies, investment must be found from national and multilateral sources. The strategy also considers equity and loan financing involving the private sector, both at the large and at the small- and medium-sized participant level. Fiscal impositions on operators should be examined for their overall economic impacts.

3.2.3 Competition and Efficient Use of Funds

38. Transport corridors are to compete against each other, as well as for traffic that can and does use alternative routes circumventing the region. Modal connections must be seamless to best exploit physical conditions, and to stimulate competition between modes. The ultimate corridor selection will be made by transport service users, not by its providers. It is, therefore, important to bear in mind that successful corridor performance depends on how well market needs are satisfied.

39. Sustained results require maintenance of the assets deployed, which again adds to the region’s financial burden. Corridor investments must be economically and financially sustainable, without relying on excessive national public debt. This will require innovative financing mechanisms based on fair and balanced user-pay principles. To maximize efficiency in usage of the available financial resources, maintenance services should also be organized on the basis of competition.

40. The CAREC rail operators offer the highest capacity to move freight, and demand is rising. The restructuring steps now being taken by some PCs are to be fostered, and their expansion encouraged to establish regionalized competitive rail services. Private sector participation must be encouraged to increase the funding and enhance the marketing expertise needed for such ventures.

41. Air transport capacity and all of its vital support infrastructure and services must be expanded to match rapidly growing demand. Only liberalization of the provision of services can attract the private investment and efficient management necessary. Air carriers which are not compliant with International Civil Aviation Organization (ICAO) guidelines must be provided support to improve safety.

3.2.4 Technology

42. Cross-cutting all components of the CAREC TSS is the complementary need to accelerate the introduction of modern intelligent transport systems (ITS). These have been successfully introduced in many operational and control applications. They will serve the needs of shippers and passengers with reduced cost and transit times, improved information, and safer, secure transport. Their adoption will foster not just an efficient but also an agile, flexible and resilient supply chain. This is essential in today's uncertain freight environment where all parties in the GVC must deal with lean inventory, demanding schedules, tight resources and the threat of natural disasters, strikes, and terrorist attacks.

43. While the public sector must be aware of and facilitate introduction of these technologies, the most effective catalysts to implement their adoption are the global carriers, third party logistics service providers, suppliers and shippers who use them already intensively.

3.3 TRANSPORT ACROSS BORDERS

3.3.1 Present CAREC Action Plan

44. The CAREC Regional Transport Sector Roadmap lays emphasis on harmonization and simplification of cross-border transport procedures, documentation and regulations among the countries to create a level playing field for transport operators, and promote efficiency and better services. Previous TSCC meetings have prepared specific recommendations on harmonizing and simplifying cross-border transport procedures and documentation in CAREC countries. These were approved at the SOM held in Manila in April 2005 and then expressed in an Action Plan encompassing six priorities:

(i) harmonizing regional road transport agreements;
(ii) harmonizing transport user tariff and fee frameworks;
(iii) harmonizing regulations on the weights and dimensions of vehicles;
(iv) harmonizing regulations on vehicle emissions;
(v) improving regional transport safety; and
(vi) reducing delays at border crossings.

45. Some progress has been made in implementation, but these priorities remain and are to be incorporated into the present comprehensive TSS. Expanded technical assistance is foreseen to accelerate movement forward in resolving the difficulties that they address.

Dual gauge track in Ala Shankou CR Container Terminal

3.3.2 Border Crossing Points and Procedures

46. At the global level, the UN international conventions for trade and transport furnish rich and ample substance to foster closer CAREC integration both within and reaching beyond its borders.

47. The CAREC strategy promotes improvement of the physical conditions and harmonization of procedures on the basis of adherence to and implementation of

international standards. Collaboration with organizations that develop and maintain these instruments (UN ESCAP, WCO, ICAO, etc) is to be encouraged.

3.3.3 Harmonized Technical Regulations

48. CAREC cross border traffic is enabled and regulated by a number of disparate bilateral and multilateral agreements. Some are active, while others are under negotiation. These likewise require harmonization and clarification, preferably on the basis of the UN international conventions, in so far as they are applicable.

49. Some guidelines have already been set and developed (see Section 3.3.1 above). Actions in the fields of technical regulations and in facilitating flows of goods and passengers across and between borders are interrelated. They are to be integrated into the now much broader CAREC TSS.

3.3.4 Institutional Coordination

50. Mature and successful regional groupings elsewhere in the world have developed strong supra-national institutions to coordinate and in some cases to direct their intra- and inter-regional trade and transport. Examples of these include the European Union (EU) and North American Free Trade Agreement (NAFTA). CAREC is not near the stage of emulating such structures, and the PCs have not expressed a wish to do so in the foreseeable future. The present strategy does not therefore point CAREC towards a level of institutional integration that participants have not evoked or endorsed. However, if CAREC's expressed strategic goals are to be achieved, some supranational institutional bridges must be built to match proposed new and improved infrastructure.

51. Experience from the GMS, which is several years more evolved than CAREC, suggests that interfaces between participating countries need coordination firstly at the national level. This, in turn, demands structured interagency cooperation and partnership with the private sector.

52. Using GMS lessons learnt, the present CAREC strategy proposes a step-by-step coalescence of effort focusing firstly at the national level, but commencing soon after and in parallel increasing regional cooperation in specific areas (such as harmonized border crossing procedures and truck axle weights) of mutual benefit to CAREC participants. In this respect the Action Plan devotes considerable attention to the establishment and work of national trade and transport facilitation committees. There are already equivalent bodies in some CAREC countries. The committees will coordinate legal and regulatory frameworks as well as procedures at the national level, but are also intended to become the interfaces for establishment of agencies with trans-corridor remits.

3.4 PEOPLE FRIENDLY TRANSPORT

53. The TSS is people-oriented and safeguards their interests, including vulnerable groups. Poverty reduction is a core strategy of the ADB and other MIs. The design of CAREC programs and projects will support this emphasis (Goal #3 in the CAREC TSS Results Framework in Annex 1) to develop safe, people-friendly transport systems that are environmentally sustainable and affordable.

Container Bazaar, Kara Suu, KGZ

54. Reflecting increasing trade and travel, the market has responded by providing both formal and

informal mechanisms to generate economic growth and development. These include shuttle trading, container bazaars, and the increased presence of imported goods from globally competitive producers. The CAREC strategy builds upon these successes and promotes further development of mechanisms that will stimulate sustainable economic growth and global opportunities.

55. The objectives under this goal are:

- To develop and maintain a safe transport system;
- To develop a people-friendly transport network;
- To mitigate potential health impacts of increased traffic and mobility;
- To develop and maintain an environmentally sustainable transport system; and
- To utilize transport sector investments as engines of economic growth, and thereby alleviate poverty.

56. Achieving these objectives will require commitment based on partnerships and utilizing best practices that have been demonstrated in the region. These include innovative Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) and human trafficking projects in Afghanistan (testing facilities in border provinces), XUAR (awareness programs and health posts at borders), and Mongolia (health educators at borders). Partners to address poverty, HIV/AIDS, communicable diseases, human trafficking, and movements of contraband include ADB, the World Bank, the Global Fund for the Fight against HIV/AIDS, Tuberculosis and Malaria, UNDP, Joint United Nations Programme on HIV/AIDS (UNAIDS), United Nations Office on Drug and Crime (UNODC), World Health Organization (WHO), UNICEF, the International Organization for Migration, the EU, the Organization for Security and Cooperation in Europe (OSCE), and bilateral agencies such as Australian Agency for International Development (AusAID), Department for International Development of United Kingdom (DFID), Japan International Cooperation Agency (JICA), Swedish International Development Agency (SIDA), the United States Agency for International Development (USAID), and the US Centers for Disease Control (US CDC), among others.

3.5 OUTCOMES

57. Successful implementation of the TSS will result in lower costs to consumers and producers in and around the region, more competitive exports, and a more attractive investment climate. The better environment for trade will stimulate economic growth, improve living standards, and reduce poverty.

58. The distribution of these benefits will be enhanced by promoting economic activities along the corridors including the less developed and often remote areas that are traversed by cross-border links, giving substance to the economic corridor concept.

59. Negative impacts will be avoided by inclusion of safeguards in the design, implementation and operation of projects.

SECTION 4: ACTION PLAN

4.1 RATIONALE

60. Implementation of the CAREC ten-year TSS will take an integrated approach combining transport infrastructure investment and management with trade and transport facilitation initiatives in a comprehensive package. The Action Plan (AP) is designed to bring about significant and measurable improvements to the CAREC corridor performance in handling intraregional, interregional and transit movements.

61. Proposed actions reinforce the three pillars of management, infrastructure, and technology required to support a competitive transport system. A balanced menu of projects builds capacity and seeks to deliver the infrastructure and tools required. Projects are regional and many address more than one pillar.

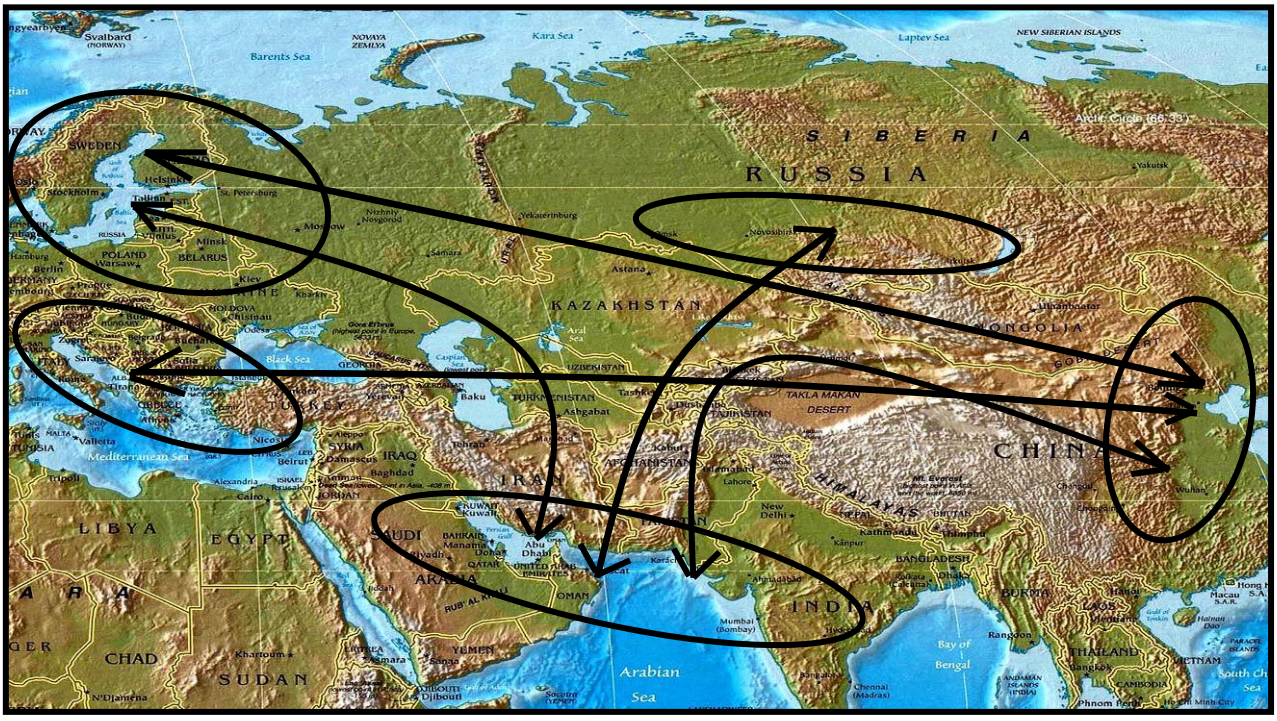
62. The themes, and in many cases, the specific projects proposed are derived from in-country discussions and requests by CAREC PCs and stakeholders.

4.2 LINKAGES TO REGIONAL AND GLOBAL TRADE

4.2.1 Major Transit Directions

63. The selection of corridors has firstly identified major transit trade directions around CAREC. Some trade already transits through CA. Much more could be attracted if corridor performance is improved. Five major trade directions have been considered (Figure 2).

Figure 2: Major Transit Trade Directions around CAREC



64. These trade directions represent the major trade origin and destination areas around the CAREG region. Almost all trade goes by sea with insignificant transit traffic passing through CAREC. For example, less than 1% of PRC exports to Europe go by rail through CAREC. The

trade directions depicted in Figure 2 constitute the basis for selection of the following six CAREC corridors (Figure 3):

- Corridor 1: Europe – East Asia;
- Corridor 2: Mediterranean – East Asia;
- Corridor 3: Russian Federation (RF) – Middle East and South Asia;
- Corridor 4: Russian Federation – XUAR;
- Corridor 5: East Asia – Middle East and South Asia; and
- Corridor 6: Europe – Middle East and South Asia.

4.2.2 Corridor Characteristics

65. A corridor is a route or a set of parallel routes linking two gateways into CAREC (mostly port to port or port to major economic activity center). The route can be a road, a railroad, a sea route or any combination of modes. To be selected, the corridor must pass through at least two CAREC countries.

66. All corridors are transit corridors since their origin and destination points are outside CAREC. This does not mean that TSS considers only transit trades. In fact, the current intra-regional movements of freight and people along the corridors are mainly within or between CAREC PCs with relatively little transit movements. Although some corridors are already active transit conduits, others have the potential to become so.

67. The corridors reflect current and potential trade flow patterns. The selection of the corridors is based on the following five criteria:

(i) Current traffic volume;

(ii) Prospect of economic and traffic growth;

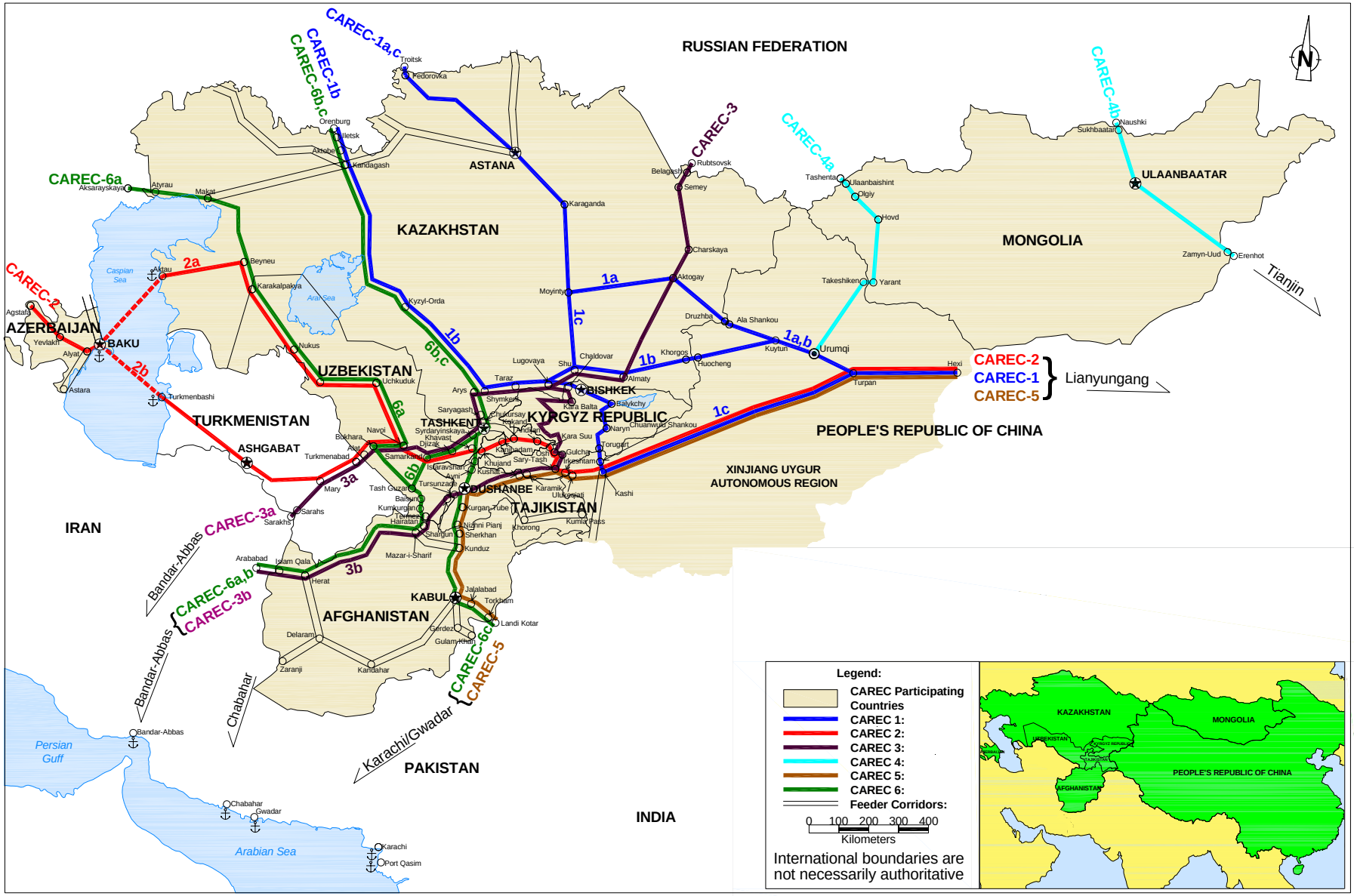
(iii) Ability to increase connectivity between regional economic and population centers;

(iv) Prospect of mitigating delays and other hindrances such as the number of cross border points, the number of gauge changes, etc.; and

(v) Economic and financial sustainability of infrastructure, management, and technology improvements.

68. To be selected a corridor must meet the following conditions: (1) either (i) or (ii) or both criterion above; and (2) at least one of the remaining three criteria.

FIGURE 3: PROPOSED SIX CAREC TRANSPORT CORRIDORS



69. The matrix shown in Table 2 summarizes the application of the five criteria listed above in the selection of the six CAREC corridors. The matrix uses qualitative analysis with limited quantitative data. This is deliberate because quantitative information alone tends to de-emphasize the importance of informed opinion. Quantitative data on each corridor's road and rail network characteristics, condition, and traffic by section is included in Annex 2. The corridors serve the principal regional trade and transit directions, and also each PC's internal and cross-border transport needs.

Corridor 2: Uzbek Road Sign to Kashi

70. The vast majority of external trade and transit is carried by rail (80%). Hence the rail network dominates long-distance movements. Most Asian highways run parallel to the rail routes and the corridors are broad enough to accommodate both. Inter-modal changes can bridge missing links in one or the other mode so these are also taken into account.

71. The region already has a well-developed network of road, rail, and sea links, as well as airports. These are not perfect, and in most cases their condition has deteriorated in recent years. However, they remain a valuable regional asset, and are the platform from which further infrastructure improvements can be implemented.

4.2.3 The Six Major CAREC Corridors

72. Figure 3 above depicts the six CAREC corridors that are needed to support the trade and transport strategy until 2018. A description of each corridor is provided below. The six corridors may not satisfy every single one of the region's cross border traders and travelers, but if fully functional to international standards, they will be able to:

- open CAREC's gateways to global trade;
- increase CAREC's share in Eurasian transit transport; and
- support the rapid growth of intra- and inter-regional trade of CAREC PCs.

Table 2: Matrix of Selection Criteria for CAREC Corridors

Corridors/ Countries	Current traffic volume	Prospect of economic and traffic growth	Capacity to increase connectivity between economic and population centers	Potential to mitigate delays and other hindrances	Economic & financial sustainability when investing in corridor improvements
CAREC 1 Europe – East AsiaKAZ, KGZ, XUAR	This is the most active corridor for CA export/Import and transit traffic both by road and rail	Prospect for economic growth remains very good. Witness the high growth in trade between Europe and PRC and the construction of the Khorgos new rail connection	1b and 1c provide good population connectivity passing through Astana, Almaty (1b) and Bishkek and Kashi (1c)	Construction of Khorgos rail line will resolve capacity problems. Few border crossings and therefore high prospect to mitigate delays	Good prospect for investments; EDI is already being used on a limited basis and logistic centers exist or are going to be established.
CAREC 2: Mediterranean – East AsiaIAZE, KAZ, KGZ, TAJ, UZB, XUAR,	This is a TRACECA corridor, significant volumes for CA export/import	Trade prospect along the corridor is very good. Transport pattern currently dominated by oil products will change overtime with construction of additional pipelines	This corridor brings strong connectivity throughout Central Asia	This corridor because of intermodal (by sea via Black Sea and Caspian Sea; and by road in KGZ) potential. Relatively high number of border crossings scores average on this criterion	Prospect to implement logistic centers are good. The fact that it involves many countries may act as a limitation
CAREC 3 RF - South Asia, Middle EastIAFG, KAZ, KGZ, TAJ UZB	Currently insignificant transit volume to and from RF and in between CA and Iran to Bandar Abbas	Prospect is good for exports of RF timber and minerals and metals from RF and Kazakhstan with general goods coming from Persian Gulf	Good connectivity (population-economic centers) and also connects forest products and mining regions in north and gulf oil production.	Because of change of railway gauge and numerous border crossings, this corridor scores low on this criterion	This is a railway corridor which should make use of block trains. The fact that it involves many countries may act as a limitation
CAREC 4 RF – MON - PRC	Western corridor traffic is currently low. Eastern corridor traffic (4b) both rail and road is high.	With completion of the western road trade expansion expected between PRC and RF. Traffic on Western corridor (4a) will grow. Corridor 4b traffic will grow with completion of Choir-Zamyn-Uud road project.	Little population connectivity, some interesting economic centers connectivity along 4a	Prospects for mitigation of delays are very good on this corridor	Good possibility for technology improvements (EDI)
CAREC 5 Middle East, South Asia- – East AsiaIAFG, KGZ, TAJ, XUAR	Traffic varies along stretches but remains low in Kyrgyz Republic and Tajikistan except between Kabul and Peshawar	Substantial prospect for Pakistan – PRC trade. The corridor is a better alternative than through the Karakoram Highway	Potential for economic resource connectivity between PRC and Pakistan	This is atypical inter modal corridor. Because of numerous border crossings, scores low on this criterion	Situation in Afghanistan and efficiency of the Pakistan Railway may limit prospect for improvement
CAREC 6 Europe – Middle East, South AsiaIAFG, KAZ, TAJ, UZB	Relatively high rail traffic on the Uzbek and Kazakh part and at the Afghan – Pakistan border	Faster and cheaper route from Europe to Arabian Sea implies potential for the corridor to compete with the all-sea route	Potential for economic resource connectivity between North of Europe and Gulf region	Because of railway gauge and numerous border crossings, this corridor scores low on this criterion	Situation in Afghanistan and efficiency of the Pakistan Railway may limit prospect for improvement

Source: Consultant

73. **CAREC 1 (1a, 1b, 1c): Europe – East Asia.** CAREC-1, linking Europe to PRC through Kazakhstan, is currently the most active corridor. Corridor 1a begins in Troitsk on the border with RF, and is a rail and road network, that passes through Fedorovka/Astana/ Karaganda/Moyinty/Aktogay/Druzhba, and then connects to the China Railway (CR) in Ala Shankou, with the routing then passing through Kuytun/Urumqi/Turpan/Hexi ending in the Ports of Lianyungang or Tianjin in PRC's East Coast. Corridor 1b which coincides with the Mega R-50

project of Kazakhstan begins in Orenburg, RF and passes through Iletsk/Aktobe/ Kandagash/Kyzyl-Orda/Shymkent/Taraz/Almaty/Khorgos, and then enters PRC at Huocheng, and proceeds on to Kuytun/Urumqi/Turpan/Hexi and eastward. The rail line from Khorgos to Kuytun will soon be completed. The third alternative (1c) begins in Troitsk and passes through Fedorovka/Astana/Karaganda/Moyinty/Shu, and then passes through Lugovaya/Chaldovar/ Bishkek/Balykchy/Naryn/Torugart in the Krygyz Republic before entering PRC at Chuanwulu Shankou and continuing to Kashi/Turpan/Hexi and points eastward. This routing uses the Kyrgyz Railway to Balykchy and then continues by road to Kashi (or Kashgar), where it connects to the CR network. Another alternative would be a road that is being considered to link Almaty with Corridor 1c between Balykchy and Bishkek near Lake Issyk-Kul. The Governments of Kazakhstan and Kyrgyz Republic with assistance from EBRD are currently evaluating the feasibility of the Almaty – Issyk-Kul Road Project.

74. **CAREC 2 (2a, 2b): The Mediterranean – East Asia.** In recent years, trade has been growing between South Europe, Turkey, and Iran with Central Asia. More recently, with the "go west" policy of PRC, trade has been expanding between South Europe, Turkey, Iran, and PRC. Corridor 2 connects Istanbul to Georgian ports of Poti and Batumi by vessel across the Black Sea. The route passes by rail or road through Azerbaijan via Agstafa/Yevlakh/Alyat/Baku. Corridor 2a includes rail/road car ferry service across the Caspian Sea to Aktau in Kazakhstan and continues through Beyneu, crossing into Uzbekistan at Krakalpakya and then on to Nukus/Uchkuduk/ Navoi/Samarkand/Djizak/Khavast, passing through Khujand/Kanibadam in Tajikistan, then back into Uzbekistan through Kokand/Andijan, and then on to Kara Suu/Osh/Gulcha/Sary Tash/ Irkeshtam in the Kyrgyz Republic, and then into PRC at Ulukeqiati and to Kashi/Turpan/Hexi and the eastern ports of PRC. This corridor is rail and road except for the section in the Kyrgyz Republic to Kashi, which is road only. Corridor 2b uses the rail/road car ferry to Turkmenbashi, Turkmenistan. The route continues from Turkmenbashi to Ashgabat/Turkmenabad before entering Uzbekistan at Alat, passing through Bukhara/Navoi where it follows the same routing as 2a. In the future it is likely that a large part of the traffic coming from South Europe and Turkey will choose the new rail connection being built between Turkey and Georgia (125 km) originating at Kars in Turkey.

75. **CAREC 3 (3a, 3b): Russian Federation (RF) – South Asia and Middle East.** CAREC-3 connects Rubtsovsk, RF to the Persian Gulf through Central Asia. Corridors 3a and 3b pass through Kazakhstan from Belagash/Semey/Charskaya/Altogay/Almaty/Shu, where 3a and 3b separate. Corridor 3a continues through Kazakhstan via Lugovaya/Taraz/Shymkent/Arys/ Saryagash. It then enters Uzbekistan and passes through Chukursay/Tashkent/Syrdaryinskaya/ Djizak/Samarkand/Navoi/Bukhara/Alat. It enters Turkmenistan and passes through Turkmenabad/ Mary/Sarahs. It enters Iran at Sarakhs and passes through Mashad and on to Bandar-Abbas on the Persian Gulf. This is a road/rail corridor that requires a gauge change at Sarakhs. From Shu, Corridor 3b enters the Kyrgyz Republic at Chaldovar and continues through Kara Balta/Osh/Gulcha/Sary Tash/Karamik before entering Tajikistan at Kushat. The corridor then passes through Dushanbe/Tursunzade, and enters Uzbekistan at Shargun, then on to Termez, where it crosses into Afghanistan at Hairatan before passing through Mazar-i-Sharif/ Herat/Islam Qala, where it enters Iran at Arababad, and then on to Bandar-Abbas. Corridor 3b is also a road/rail corridor except for the portion in Afghanistan, where only road is available. An alternative feeder route would be from Herat to Delaram to Zaranj in Afghanistan, and then on to Chabahar, an Iranian port on the Arabian Sea.

76. **CAREC 4: Russian Federation – Mongolia – PRC.** CAREC-4a is a road corridor connecting XUAR to RF via the Yarant/Ulaanbaishint road. The route starts from Tashenta in RF and then passes through Mongolia via Ulaanbaishint/Olgiy/Hovd/Yarant, and enters PRC at Takeshiken, where it continues to Urumqi. The present traffic is low but it offers a good potential for the future when the road is improved with ADB and other lender assistance currently under preparation. Corridor 4b is a rail corridor that will soon be accompanied by a paved all-weather road when the southern section to the border with PRC between Choir and Zamyn-Uud is completed in 2008. Beginning in Naushki, RF, the corridor passes through

Sukhbaatar/Ulaanbaatar/Zamyn-Uud and into PRC at Erenhot. This is Mongolia's key north-south railway and soon to be completed road corridor running through the capital, Ulaanbaatar, that connects through northeast PRC to the port of Tianjin, which is landlocked Mongolia's primary seaport. The rail line also carries considerable transit traffic between RF and PRC.

77. **CAREC 5: Middle East and South Asia – East Asia.** CAREC-5 connects the Arabian Sea region (including Pakistan and India) to PRC through Central Asia. Starting from Karachi (or Port Qasim), it is a rail or road corridor until it reaches Afghanistan and continues northbound by road. The newly opened Port Gwadar is another terminus which is currently connected by road. In Pakistan, there are three alternatives: Karachi/Hyderabad/Lahore/Rawalpinidi/Islamabad/ Peshawar/Landi Kotar; and on the west bank of the Indus River, Karachi/Hyderabad/ Larkana/Dara Ghazi Khan/Kohat/Thal or Parchinar. In Afghanistan, the route from Parchinar, Pakistan passes through Nazyan to Jalalabad. The routing from Thal goes into Afghanistan at Gulam Khan and continues through Gerdez/Kabul. The route that carries most of the traffic goes from Peshawar, Pakistan to Landi Kotar, crossing into Afghanistan at Torkham and continuing through Jalalabad to Kabul/Kunduz and Sherkhan. From the Tajikistan border crossing of Nizhni Pianj, the route passes through Kurgan Tube/Dushanbe/Kushat. In Kyrgyzstan the road goes to the Chinese border via Karamik/Sary Tash/Irkeshtam, and then into PRC via Ulukeqiati/Kashi/Turpan/Hexi and the eastern ports. An alternative route, or feeder corridor, passes from PRC into Tajikistan via Kulum Pass/Murgab/Khorog/Dushanbe/Nizhni Pianj.

78. **CAREC 6 (6a, 6b, 6c): Europe – Middle East and South Asia.** CAREC-6 includes three routes linking Europe and Western RF to the Arabian Sea port outlets of Karachi, Port Qasim, and Gwadar in Pakistan, or Bandar Abbas on the Persian Gulf. The first route (6a) enters into CAREC as a rail/road corridor from Aksarayskaya in RF, and passes through Atyrau/Makat/Beyneu in Kazakhstan and continues to Uzbekistan through Karakalpakya/Nukus/Uchkuduk/Navoi/ Bukhara/Tash Guzar/Baisun/Kumkurgan/Termez. After crossing the border, in Afghanistan it is a road corridor proceeding from Hairatan/Mazar-i-Shariff/Herat on the Regional Ring Road, reaching the Iranian border at Islam Qala and continuing to Arababad and Bandar Abbas by road/rail. The second corridor (6b) originates from Orenburg, RF passing the Kazakhstan border at Iletsk/Kandagash/Arys/Shymkent and Sarayagash at the Uzbek border. In Uzbekistan it follows by rail from Chukursay/Tashkent/Syrdaryinskaya/Djizak/Samarkand/Tash Guzar/Baisun/Kumkurgan before reaching Termez. In Afghanistan it follows the route of 6a to Islam Qala at the border with Iran and Port of Bandar Abbas. The third corridor (6c) begins in Orenburg and then passes through Iletsk/Kandagash/Kyzyl-Orda/Arys/Shymkent/Saryagash in Kazakhstan, crossing the Uzbek border at Chukursay and going through Tashkent to the Tajik border at Khavast. In Tajikistan it proceeds by road to Istaravshan/Ayni/Dushanbe/Kurgan Tube/Nizhni Pianj. In Afghanistan, it goes through Sherkhan/Khunduz/Kabul/Torkham, crossing into Pakistan border at Landi Kotar and continuing by rail/road to Peshawar and Karachi. Alternatively, it could also connect via road to the new port of Gwadar from Sukkur. In addition, 6c could utilize the alternative routes from Jalalabad/Nazyan/Pachinar and Kabul/Gerdez/Gulam Khan described for Corridor 5, as well as the alternative routings within Pakistan via Islamabad or the west bank of the Indus River.

4.2.4 Project Development Rationale

79. The traffic flows on the six CAREC corridors are shown in Figures 4 and 5 for road and rail, respectively. Road traffic is largely concentrated around population nodes, and cross border traffic is relatively light. Even so, congestion and delays at border crossings are severe. The figures highlight the importance of an integrated CAREC program for regional transport and for trade facilitation aimed at reducing border crossing delays and increasing intra-regional and transit traffic.

Figure 4: Road Traffic Density

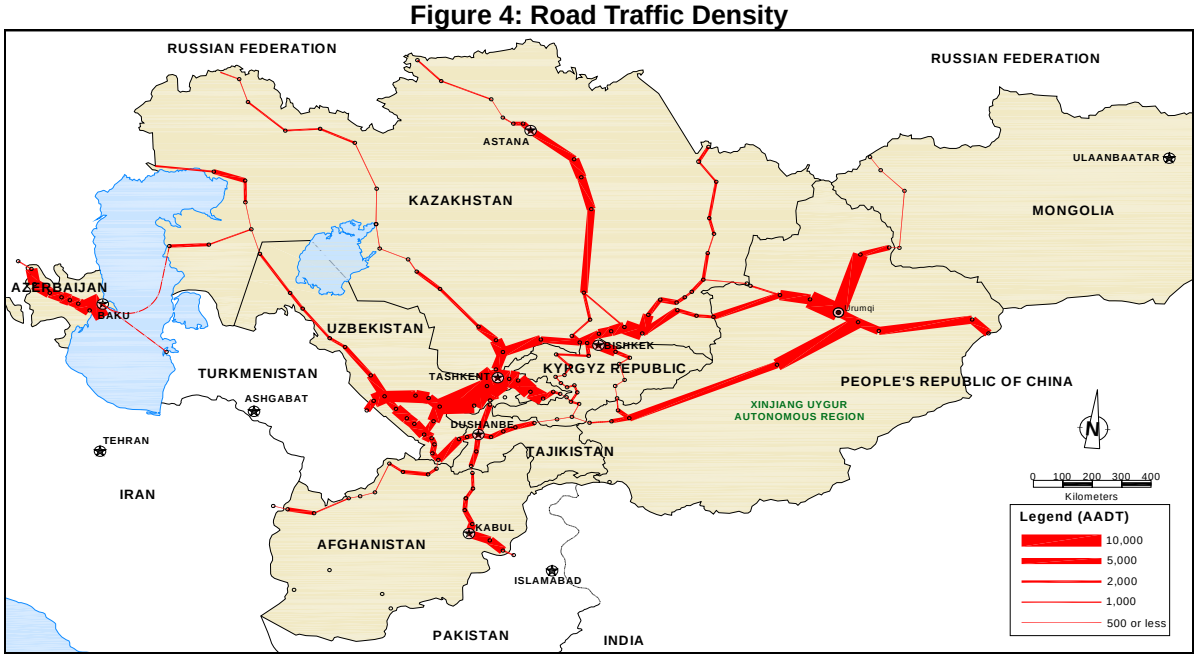
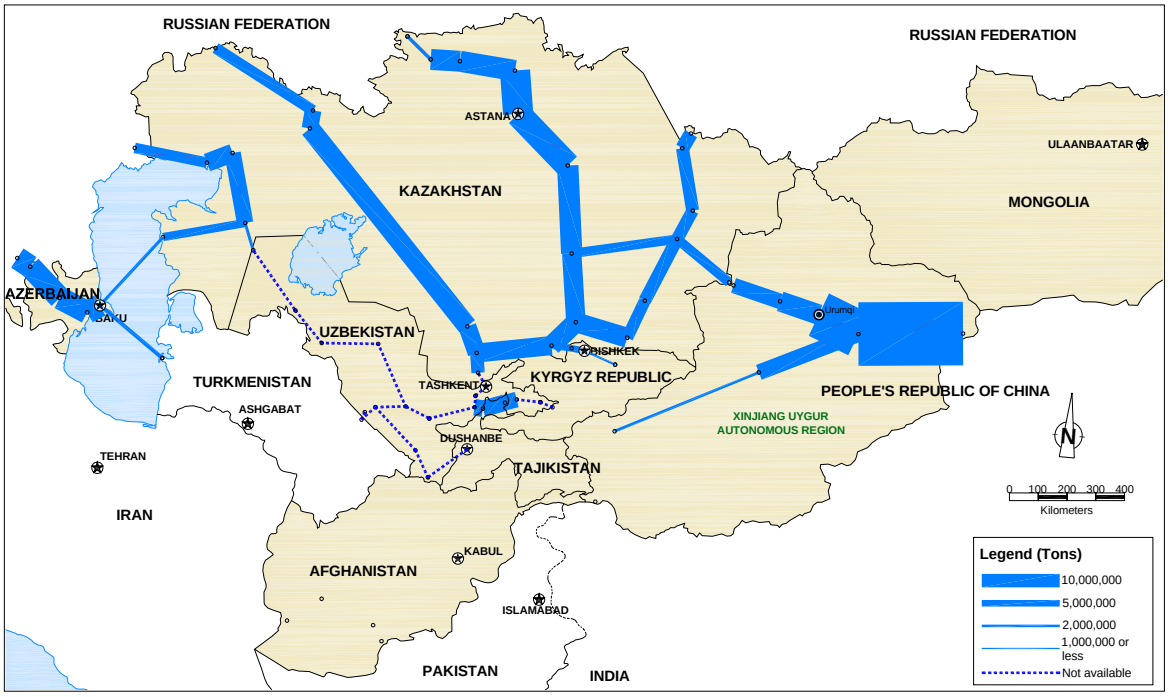


Figure 5: Rail Traffic Density



80. The traffic flows are shown in greater detail in linear schematics in Annex 2 with key technical indicators describing the corridors including for roads design class, length, terrain, pavement type, and surface condition and for railways traction power, terrain, length, gauge, and number tracks. Proposed interventions along the corridors will include those presented by the CAREC countries as well as the projects decided in the Urumqi SOM on 28-29 August 2006. Measures to improve border crossing delays will also be included.

4.3 SEAMLESS CROSS BORDER OPERATIONS

4.3.1 Continuity with the CAREC Road Map

81. As noted in Section 3.3.1 above, some priorities have already been identified and agreed by CAREC. They are now addressed more comprehensively by projects foreseen in the TSS.

4.3.2 Institutional Interfaces

82. The reinforcement of institutional interfaces is the most important action for overall long term results as well as for sustainability of the benefits derived from technology and investment in this focus area. However, interest in maintaining the status quo can be strong and may delay change. Thus, the different parties involved must be given time and be assisted in discovering that a win-win prospect is unfolding with change.

83. The present Transport Sector and Customs Cooperation Committees cannot separately bring to bear all of the institutional interface and expertise necessary to achieve results in all Action Plan components. Using lessons learnt from the GMS program, the intra-governmental management of regional issues needs to be integrated. The CAREC strategy will foster the creation of National Trade and Transport Facilitation Bodies (or equivalent entities) under a mandate from the government that incorporates all relevant private and public sector representatives. Each government should choose its own structure for this, and some already have such structures in place. Coordinated functionality rather than form is the key issue. Ministry of Transport and Communications and Customs authorities are both expected to play prominent roles in these bodies, but other interests (agricultural control and quarantine, immigration, health, security, traffic police, and other functions) should also be represented including most certainly private sector users and service providers.

84. Ideally, these bodies should be established and working, and then become the interfaces:

- within an integrated CAREC trade facilitation and transport program; and
- to establish and run CAREC corridor management agencies whose remit would extend along the whole of each corridor.

85. In reality the national and the regional extension phases will have to overlap or progress will be too slow. Bilateral, trilateral and multilateral entities may best fit the complexity of the corridors.

86. The national committees will be assisted to harmonize national procedures and standards in accordance with international conventions and practice. This will in itself develop a high degree of standardization across the region as well as with global trading partners. The CAREC strategy promotes close liaisons and active collaboration with related bodies such as WCO, UN ESCAP, the EU (their Border Management Central Asia and TRACECA programs in particular), IMs, and bilateral assistance organizations.

4.3.3 International Conventions, Regional Agreements and Regulations

87. CAREC countries will be provided with further assistance to adhere to international conventions and to implement them. These cover a broad range of border crossing and more technical harmonization issues. In certain cases, the conventions are crucial management pillar components of the CAREC strategy. Important conventions include:

- border crossing procedures complying with the new Annex 8 of the Convention on the Harmonization of Frontier Controls of Goods, and engagements under the Revised Kyoto Convention;
- the UN ESCAP resolution 48/11 list of priority conventions; and

- the UN Convention Against Corruption, December 2005.

88. Although the conventions are broad, their implementation is sometimes difficult. Specific actions are planned in the TSS to assist CAREC countries in:

- road safety (a very urgent priority),
- vehicle emissions,
- equitable transit and cross border entry charges, and
- vehicle insurance.

89. Nearly all of the region's cross-border and transit road transport is conducted under bilateral agreements. Their implementation mechanisms are absent or weak, allowing unilateral interpretation. Multilateral agreements are relatively ineffectual, and others are under negotiation. Diverse technical standards are enforced. This opens ambiguity in regulatory application, and creates a confusing mosaic of rules. The TSS and its Action Plan will assist CAREC countries in adopting international standards as the reference benchmarks to harmoniously regulate their cross border transport relations. This will be of great value whichever agreements prevail as the region's favored working instruments.

4.3.4 Border Crossing Point Improvements

90. While certain CAREC border crossing points have been improved, at many of them woefully inadequate conditions of infrastructure and equipment are to be found. It would not be possible to implement world best practice at border crossings under the present conditions. All border crossings along the six CAREC corridors must be surveyed, improvement measures designed and their cost/benefits assessed. This will allow the formulation of investment plans to implement physical, management and technology improvements. Customs officers and other control officers will receive training in application of the new procedures and utilization of new equipment.

4.3.5 Rail Operations

91. CAREC railways are predominantly state-owned and operated. All are at present undergoing some degree of reform and restructuring. Much ADB and other MI support have been provided to assist in this process. However, the regional facets of this difficult process are relatively under-exposed. These include the division of ownership of assets, the technical regulation and licensing (market access) of cross border operators, and the equitable distribution of revenues that should accompany these changes. CAREC TSS actions will focus on:

Container Train on CAREC Corridor 1 in Kazakhstan

- The enablement of cross-border operations of block trains including locomotives by operating entities which would be at least partly private; and
- The cost accounting and tariff models that are needed to implement national and cross border operations when infrastructure owners, operators, and regulators are separate entities.

92. Furthermore, inter-modal operations extending beyond CAREC borders should be foreseen. These actions will assist CAREC's integration both internally and with global logistic chains.

4.3.6 Micro-financing of Transport Equipment

93. Large multilateral loans will assist CAREC countries to develop, for example, infrastructure that is typically state-owned. These investments will provide many opportunities for micro-financing of small and medium sized business enterprises to grow and to expand across borders. In fact, there are many of them already. Sustained success of the strategy will depend much on their economic and technical development. Present micro-credit loan facilities, welcome though they are, are too expensive for CAREC operators in the transport sector.

94. CAREC actions under this strategy will explore the possibilities of easier access to credit, for example for trucking and logistics service suppliers.

4.4 AIR AND MARITIME TRANSPORT

95. The CAREC program is relatively new to the air and maritime transport sectors. It is clear that demand for both is growing rapidly and that investment is urgently required in infrastructure, management and technology.

96. Investment in ports, vessels and support facilities on the Caspian Sea has been insufficient to match demand. A comprehensive project to study the needs and opportunities is planned. Oil is a hazardous cargo engendering safety and environmental concerns. All due attention will be paid to investment possibilities, institutional structures, private sector capacity, environmental and safety standards.

97. CAREC's civil aviation is confronted by high growth in demand at a time when a few regional airlines have been found to be non-compliant under ICAO guidelines. Certain urgent needs are already apparent and will be acted upon including:

- compliance with ICAO standards and recommended practices including language competence for Air Traffic Controllers (ATC) and pilots;
- creation of a regional aviation safety oversight authority; and
- modernization of certain airports and air traffic control systems.

98. An assessment study is needed to develop a more comprehensive approach to the sub-sector's development and identification of actions needed for ICAO compliance.

4.5 TECHNOLOGY AND GLOBAL LOGISTIC CHAINS

99. Global logistics chains depend on reliable transit times, which in turn require rapid transmission of information. Excepting aviation control systems, the most glaring need to be addressed by the Action Plan are those that will reduce border crossing delays. These include tools to assist full implementation of Annex 8 of the International Convention on the Harmonization of Frontier Controls of Goods such as:

- ASYCUDA and other software for rapid border crossing processing;
- Smart cards, smart seals, bar codes, and radio frequency identification (RFID), GPS and other devices supporting fast processing systems;
- Communications and data transmission hardware; and
- Inspection instruments such as scanners, probes and detectors of radioactive materials and contraband.

100. Other equipment such as digital devices for recording and controlling commercial vehicle driver's working hours, speed and idling times will also be introduced.

4.6 SAFEGUARDS

101. The TSS acknowledges that social and environmental impacts will be occasioned by corridor development and increased traffic flows. These impacts will not all be positive unless safeguards are put in place. A suite of actions are proposed to erect barriers against unwanted consequences. They are all technical assistance based and include specific projects aimed at:

- Improving knowledge to safely dispose of or recycle used components of vehicles;
- Promoting and developing inter-country bus services and the small scale trading in which bus travelers are often engaged for their livelihoods;
- Encouraging the provision of safe rest stops and other amenities for long distance drivers, while countering chaotic development on land too close to heavy and increasing traffic;
- Mitigating HIV/AIDS/STI propagation and preventing human and drug trafficking; and
- Addressing the problems faced by migrant workers.

102. Also, actions described in other sections will incorporate safeguards project design, implementation, and operation for the protection of poorer communities, and the environment as well as to facilitate access to credit for small and medium businesses. For example, reduction of vehicle emissions must be addressed very carefully. The old vehicles that are guilty of creating a significant part of present pollution are frequently vital means of subsistence for rural communities. Likewise, imposition of modern international logistics standards for trade and transport of perishable goods, desirable though it may be in many respects, may negatively impact agricultural communities and poor urban dwellers that rely on low-priced foodstuffs. Modernization and globalization must be accompanied by measures to assist those who otherwise will loose out.

4.7 IDENTIFICATION OF PROJECTS

103. Based on the detailed assessments summarized above, a CAREC transport sector Action Plan will be developed covering continuation of necessary reform and restructuring initiatives, investment projects, and institutional/managerial strengthening assistance. More than eighty investment projects and forty-five technical assistance projects have been initially identified on a preliminary basis within the ten-year CAREC TSS from 2008 to 2018. These include practically all projects that have been proposed to the technical assistance team that prepared the strategy. Quite often, especially where technical assistance has been called for, it has been packaged as a regional project. A summary of the preliminary projects by corridor and mode of transport is tabulated in Table 3.

104. Investment projects are those that governments have already decided to implement and included in investment plans. Technical assistance projects may take the form of feasibility studies or advisory services, including preliminary planning, technical knowledge transfer, and support for institutional capacity improvement or restructuring.

105. The preliminary estimated cost of the listed investment projects is approximately USD 20 billion and of technical assistance projects USD 50 million. These are very preliminary estimates and will be further refined during the finalization of the transport sector strategy in 2008. The improvements in policy, regulations, and procedures together with investment projects and institutional/management strengthening will achieve a well-balanced transport sector development in the CAREC region.

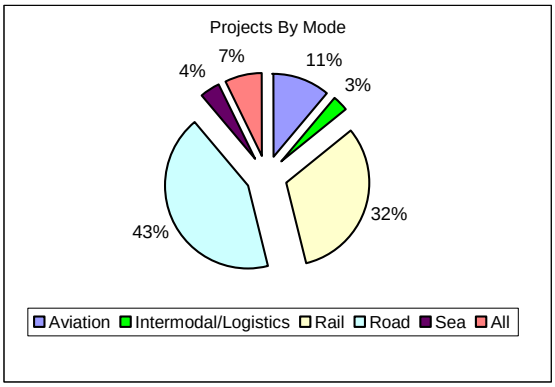
106. Projects and actions agreed at the 5th Ministerial Conference (MC) on CAREC (Urumqi, October 2006) and the 6th Meeting of the TSCC (Urumqi, August 2006) will be carried over and embedded into the ten-year TSS.

Table 3: Summary of Projects

Corridor/Mode	Project Type (number)		
	Investment	TA	Total
Corridor			
1	23	2	25
2	24	5	29
3	25	3	28
4	1	2	3
5	16	4	20
6	31	6	37
Multiple Corridors	38	7	45
All Corridors	1	21	22
Other/Not Applicable	4	9	13
Subtotal by Corridor (*)	163	59	222
Mode			0
Aviation	8	6	14
Intermodal/Logistics	1	3	4
Rail	32	8	40
Road	36	18	54
Sea	3	2	5
All	1	8	9
Total Projects	**81**	**45**	**126**

Source: TA Consultant.

(*) The subtotal for corridor projects is larger than the actual number of projects because of double-counting of projects that target more than one corridor.



SECTION 5: NEXT STEPS

5.1 DISCUSSION, DETAILED REFINEMENT AND DEVELOPMENT, APPROVAL

107. Implementation of the Action Plan is expected to commence following MC endorsement of the TSS. In 2008 the proposed investment and TA projects together with prioritization and time-bound scheduling of interventions will be finalized in cooperation with PCs.

5.2 REALIZATION: THE ROLE OF GOVERNMENTS, MULTILATERAL INSTITUTIONS, AND THE PRIVATE SECTOR

108. In addition to the actions proposed under this strategy, the CAREC countries themselves will be carrying out their independent development programs that contribute to the same goals as the CAREC strategy.

109. It must however be accepted that this strategy foresees deployment of resources beyond those presently committed by the CAREC PCs themselves or by the ADB. The contribution of other development partners to the fulfillment of the strategy is needed.

110. The strategy emphasizes sustainable financing including cost recovery mechanisms, but these will contribute relatively little during the projected ten-year strategy term. The private sector is so far a relatively untapped source of funding. It could potentially be a much more significant contributor than MIs, particularly to infrastructure, vehicles and equipment for all modes, and in introducing new technology at the operational level. Tapping into this vast potential funding source depends on creating a business and regulatory environment where the rules are clearly visible. In fact, during the term of this strategy, the momentum for development in the transport sector should shift inexorably from the public to the private sector.

ANNEX 1

TSS RESULTS FRAMEWORK

ANNEX 1: CAREC TRANSPORT SECTOR STRATEGY RESULTS FRAMEWORK

Transport Sector Objectives	Key Transport Constraints	Outcomes	Milestones and Indicators
Transport Sector Strategy Goal 1: To establish competitive transport corridors across the CAREC region			
To develop and improve selected CAREC corridors to link production centers and markets within CAREC countries, and to enhance CAREC countries' access to neighboring regions and markets.	• Transit and Intra-regional trade is limited; transport costs and travel times are high. • National transport network sometimes crosses neighboring countries; regional transport network is not integrated. • Length of the linear infrastructure and difficult terrain cause high construction costs. • Missing links contribute to high transport costs. • A large proportion of existing transport infrastructure is in poor quality. • It is also deteriorating due to insufficient funding for maintenance.	• Reduction of transport cost and time from major CAREC cities to/from Europe, to/from Arabian Sea and Persian Gulf, and to/from China. • Elimination of the weak or missing road links through construction of new roads and rehabilitation of existing roads with the financial assistance of MIs. • Corridors are properly maintained.	• Road and rail tariffs quoted between CAREC countries and Europe, Persian Gulf and China are significantly reduced to more competitive levels with alternate non-CAREC routes. • Average speed on road and rail has increased, and travel times reduced. • Reduction in average vehicle operating costs (VOC). • Roughness on road corridors varying between IRI 2 and 4.
To introduce technology improvements in corridor development favoring an integrated multi-modal approach.	• Limited introduction of new technologies in sector. • Absence of a common technology platform. • Lack of common technical standards. • Lack of adoption of an integrated and regionally oriented multimodal transport approach for transport infrastructure development. • Low container traffic throughout in CAREC.	• Higher container traffic in CAREC countries. • Development of a logistics industry. • Optimized modal choice for freight traffic along corridors.	• Number of ICD and logistics centers established in CAREC. • Volume of containers increases for import/export and transit traffic.
To manage and control the performance of corridors on a regional basis.	• No coordinated effort by CAREC countries to agree to share information and to agree on monitoring performance of corridors. • Lack of a corridor marketing authority to attract traffic and investments.	• Establishment of integrated National and Inter-regional Committees to manage and to market corridors to shippers and carriers.	• Each year (or at 3- or 6-month intervals) performance indicators on corridor are recorded in terms of travel time and transport costs. • Minutes of the meetings of the National Committees and the Supra National Committee.
To improve and maintain network based on the most efficient allocation of funds.	• Limited government funds for construction and improvement of transport infrastructure and its maintenance. • Limited interest from private sector to finance transport projects.	• Road maintenance outsourced to private sector. • Road maintenance adequately financed. • Infrastructure maintenance user fee equitably established.	• Once a road is rehabilitated, CAREC countries spend an average $1,000/km on routine maintenance.
Transport Sector Strategy Goal 2: To facilitate efficient movement of vehicles, craft, people and goods across borders			
To facilitate surface border crossing by improving infrastructure, equipment, procedures and working conditions.	• Complicated and long processes for exporters and importers to prepare required documentation. • Many facilities are poorly constructed and equipped. • Poor conditions for travelers and for staff. • Most border crossings operate on a “one inspection lane” multiple window system. • Lack of current management information, communications, and inspection systems. • Procedures do not conform to International standards. • Limited willingness of CAREC countries to share information. • Paper-based systems encourage unofficial payments.	• Adequate facilities, well equipped and operating a one stop/one window system on multiple lanes. • Simplified and standardized cross border procedures and documentation (compliant with Harmonized Border Crossing Convention Annex 8). • Use of electronic information in control and inspection, and sharing information along corridor. • Trained (risk management, total quality management-TQM) and motivated staff. • Elimination of unofficial payments.	• Processing times for travelers, vehicles (including trains) and maritime freight. • Number of new cross border facilities. • Procedures complying with Harmonized Border Crossing Convention Annex 8. • % of staff trained..

Transport Sector Objectives	Key Transport Constraints	Outcomes	Milestones and Indicators
To harmonize transport regulations among CAREC countries to create a level playing field for transport operators and promote efficiency and better services.	• Lack of unified transport regulations among CAREC countries. • Limited capacity in government agencies to enforce regulations.	• Adherence to and implementation of international conventions. • Harmonization of regulations.	• Unified technical standards for vehicles. • Use of international commercial/operational standards (CMR, CVR, APT, AETR, ADR, common operator licensing standards).
To support the on-going restructuring of the railway sector in order to establish competitive regionalized services with prominent private sector participation.	• Lack of competition in railways due to the monolithic and monopolistic nature of the organizations. • Lack of track-sharing agreements, frequent changes in locomotives and time-consuming train re-marshaling at borders. • Delays in inter-railway payment. • No competitive railway tariffs to attract container traffic. • Overstaffed organizations. • Limited involvement of the private sector and limited interest from the private sector to finance transport projects due to large funding requirements and low rate of return on investment.	• Restructuring of railways with move towards full privatization. • CAREC railways become a regional network with track sharing agreements. • Agreed economic cost accounting procedures and simple inter-railway payments based on international accounting procedures and full transparency. • Attractive railway tariff for containers.	• Number of privatized railways and private operators on railway network. • Volume of inter-railway payments. • Volume of containers transported by railways. • Number of railway staff.
To assist the incremental liberalization of the civil aviation sector focusing on the adoption of bilateral agreements, restructuring of national carriers to promote competition, and greater private sector participation.	• Lack of a regional approach in civil aviation, and lack of commonality in aviation policy and liberalization prospects across the region. • Fear that in a liberalized environment strong foreign airlines would undermine local industry participants. • Many national carriers facing extremely difficult financial situation.	• Gradual privatization of state owned airlines. • Increase number of air rights with foreign countries. • Modern air traffic control operation in all CAREC countries. • Increase volume of air passengers.	• Prevailing air fares in CAREC countries. • Volume of air passengers. • Number of airport rehabilitated. • Characteristics of air fleet in CAREC (number and type of planes and age of fleet).
To modernize the trucking fleet in order to increase transit traffic and participation by CAREC countries.	• Trucking fleet is old in most CAREC countries. • Transit volume is limited. • Meeting EU standards implies replacement of fleet with expensive trucks.	• Modern trucking fleet. • Increased transit volume.	• Average age of truck fleet in CAREC countries. • Number of TIR carnets used per country. • Volume of transit freight carried by CAREC trucks.
Transport Sector Strategy Goal 3: To develop safe, people-friendly transport systems that are environmentally sustainable and affordable			
To Develop and Maintain a Safe Transport System.	• Limited regional integration on safety. • Relatively high road accident rates. • Limited resources to educate public on and enforce safe driving practices. • Limited resources for ICAO compliance.	• Reduced number and severity of accidents. • Reduced travel times resulting from reduced number of accidents. • Reduced costs for accidents on a per capita basis. • ICAO compliance.	• Road accidents (total number and fatalities). • Aviation accidents (total number and fatalities). • Railroad accidents (total number and fatalities). • Sea accidents (total number and fatalities).
To Develop a "People-friendly" Transport Network.	• Outdated border facilities. • Outdated aviation, sea and rail terminals. • Lack of harmonized border crossing procedures. • Lack of inter-country bus service. • Limited role of private sector means limited response to market demands.	• Upgrade facilities including terminals. • Harmonize procedures. • Enable increased role for private sector including in the establishment of inter-country bus service.	• Increased trade, travel and transit. • Agreement on border crossing procedures. • Private sector investment in sector including in terminals and border crossing facilities. • Inter-country bus services established.

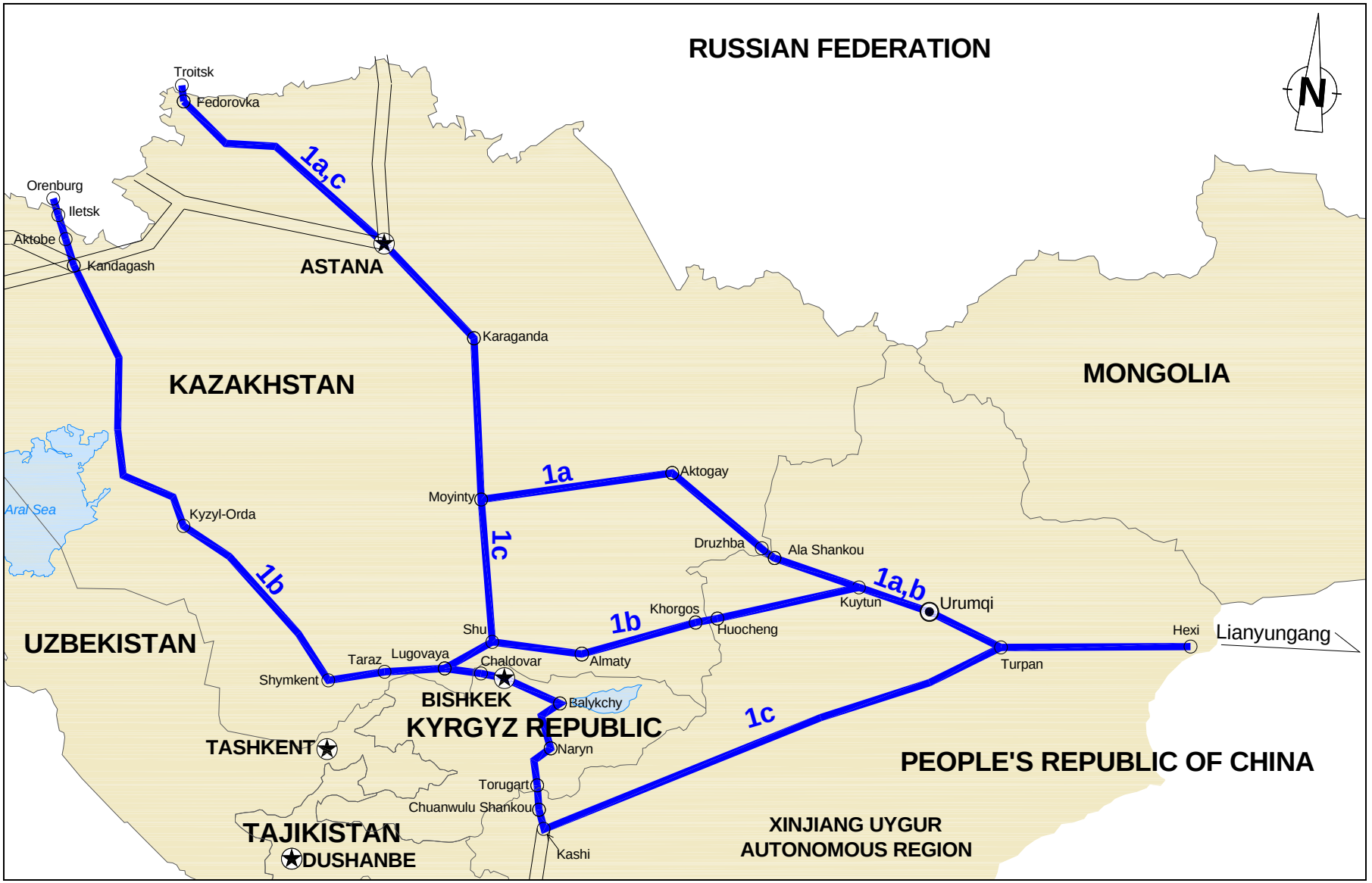
Transport Sector Objectives	Key Transport Constraints	Outcomes	Milestones and Indicators
To Mitigate Potential Negative Health Impacts of Increased Traffic and Mobility.	• Increasing incidence of HIV/AIDS/STI, injecting drug use. • Increased mobility. • Continuing reliance on remittances in a number of countries. • Increased traffic.	• Provide information and services to vulnerable populations including transport operators and migrant workers on health issues. • Upgrade health information and services at border crossing points.	• Reduce rate of increase for HIV/AIDS/STI, communicable diseases and drug use. • Decrease flow/increase intercepts of drugs/ other contraband (e.g., arms, radioactive materials, endangered species), and human trafficking.
To Develop and Maintain an Environmentally Sustainable Transport System.	• Aging transport fleet. • Limited resources for education/enforcement for sustainable environmental measures.	• Reduced pollution by sector. • Improved land use/ reduced land degradation.	• Reduced emissions per vehicle or craft. • Reduced waste from sector. • Reduced loss of and use per project
To Utilize Transport Sector Investments as Engines of Economic Growth, and thereby Alleviate Poverty.	• Small segmented markets. • Long distances to major markets including outside CAREC. • Limited transit traffic means higher per unit transport costs.	• Increased jobs and incomes. • Increased trade. • Increased transit traffic. • Reduced incidence of poverty.	• Job creation. • GDP per capita. • Trade volumes. • Transit volume. • Poverty rates.

Source: Consultant.

ANNEX 2

CORRIDOR MAPS & PROFILES

CAREC CORRIDOR 1: EUROPE - EAST ASIA



Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 1a: EUROPE - EAST ASIA VIA DOSTYK BY ROAD

KAZAKHSTAN

	Fedorovka (Border of Russia)		Kostanai		Ruzaevka		Zhaksy		Atbasar		Astrakhanka		Astana		Osakarovka		Karaganda		Aksu-Ayuly		Burybaital		Kaskelen		Almaty		Ucharal		Dostyk (Border of China)
AADT		1,297		1,102		502		1,045		3,284		4,747		6,105		7,781		6,684		5,625		1,338		11,762		3,672		738	
Surface Condition-Length (km)		G-170		G-172; F-75		G-80; F-39		G-85		G-42, F-72		G-10; F-123		G-87		G-93		G-118		G-542		G-93; F-223		G-12; F-1		G-497; F-20		G-184	
AH Reference		AH 7		AH 7		AH 7		AH 7		AH 7		AH 7		AH 7		AH 7		AH 7		AH 7		AH 60		AH 5		AH 60		AH 68	
Design Standard		II, III		I, II, III		II, III		I, II, III		II, III		I, II, III		I, II		I, II		II		II, III		II, III		I		I, II, III		II, III	
Section Length (km)		170		247		119		85		114		133		87		93		118		542		316		13		517		184	
Terrain		F		F		F		F		F		F		F		F		F		F		F		H		F, H, M		H	
No. of Lanes-Length (km)		2-170		2-244; 4-3		2-119		2-85		2-114		2-133		2-82; 4-5		2-58; 4-35		2-118		2-542		2-316		4-13		4-159; 2-358		2-184	
Surface Type-Length (km)		AC-147; PM-23		AC-100; PM-147		AC-62; PM-57		AC-58; PM-27		AC-111; PM-3		AC-90; PM-43		AC-87		AC-93		AC-118		AC-529; PM-13		AC-93; PM-223		AC-13		AC-253; PM-264		AC-176; PM-8	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)																													

XINJIANG UYGUR AUTONOMOUS REGION

	Ala Shankou (Border of Kazakhstan)		Jct. AH5/AH68 (Jinhe)		Kuitun		Urumqi		Xiaocaohu		Turpan		Hami		Anxi (Gansu border)
AADT		1,506		8,482		14,611		6,810		6,810		6,810		6,810	
Surface Condition-Length (km)		G-74; F-36		G-227		G-233		G-113		G-54		G-375		G-346	
AH Reference		AH 68		AH 5		AH 5		AH 5		AH 5		AH 5		AH 5	
Design Standard		II, III		Primary, I		Primary		Primary		Primary		II, III		II, III	
Section Length (km)		110		227		233		113		54		375		346	
Terrain		F		F		F		F		F		F		F	
No. of Lanes-Length (km)		2-110		2-227		4-233		4-113		4-54		2-375		2-346	
Surface Type-Length (km)		AC-74; PM-36		AC-227		AC-233		AC-113		AC-54		AC-247; PM-128		AC-117; PM-229	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)															

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

Summary

Road Characteristic	Kazakhstan	XUAR	Total
Total Length (km)	2,738	1,458	4,196
Surface Condition (km-%):			
Good	2,185-79.8%	1,422-97.5%	3,607-86.0%
Fair	553-20.2%	36-2.5%	589-14.0%
No of Lanes (km-%):			
2	2,523-92.1%	948-65.0%	3,471-82.7%
4	215-7.9%	510-35.0%	725-17.3%
Surface Type (km-%):			
AC	1,930-70.5%	1,065-73.0%	2,995-71.4%
PM	808-29.5%	393-27.0%	1.201-28.6%

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 1b: EUROPE - EAST ASIA VIA KHORGOS BY ROAD

KAZAKHSTAN

	Fedorovka (Border of Russia)	Kostanai	Ruzaevka	Zhaksy	Atbasar	Astrakhanka	Astana	Osakarovka	Karaganda	Aksu-Ayuly	Burybaital	Kaskelen	Almaty	Shonzhy	Koktal	Khorgos (border of China)
AADT	1,297	1,102	502	1,045	3,284	4,747	6,105	7,781	6,684	5,625	1,338	11,762	5,345	3,110	2,588	
Surface Condition-Length (km)	G-170	G-172; F-75	G-80; F-39	G-85	G-42, F-72	G-10; F-123	G-87	G-93	G-118	G-542	G-93; F-223	G-12; F-1	G-33; F-188	G-4; F-74	F-52	
AH Reference	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 60	AH 5	AH 5	AH 5	AH 5	
Design Standard	II, III	I, II, III	II, III	I, II, III	II, III	I, II, III	I, II	I, II	II	II, III	II, III	I	I, II, III	II, III	I, III	
Section Length (km)	170	247	119	85	114	133	87	93	118	542	316	13	221	78	52	
Terrain	F	F	F	F	F	F	F	F	F	F	F	H	H	H	M	
No. of Lanes-Length (km)	2-170	2-244; 4-3	2-119	2-85	2-114	2-133	2-82; 4-5	2-58; 4-35	2-118	2-542	2-316	4-13	2-187; 4-34	2-78	2-49; 4-3	
Surface Type-Length (km)	AC-147; PM-23	AC-100; PM-147	AC-62; PM-57	AC-58; PM-27	AC-111; PM-3	AC-90; PM-43	AC-87	AC-93	AC-118	AC-529; PM-13	AC-93; PM-223	AC-13	AC-91; PM-130	AC-53; PM-25	AC-3; PM-49	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)																

XINJIANG UYGUR AUTONOMOUS REGION

	Khorgos (Border of Kazakhstan)	Jct. AH5/AH68 (Jinhe)	Kultun	Urumqi	Xiaocaohu	Turpan	Hami	Anxi (Gansu border)
AADT	6,611	8,482	14,611	6,810	6,810	6,810	6,810	
Surface Condition-Length (km)	G-186	G-227	G-233	G-113	G-54	G-375	G-346	
AH Reference	AH 5	AH 5	AH 5	AH 5	AH 5	AH 5	AH 5	
Design Standard	I, II	Primary, I	Primary	Primary	Primary	II, III	II, III	
Section Length (km)	186	227	233	113	54	375	346	
Terrain	M-40; H-146	F	F	F	F	F	F	
No. of Lanes-Length (km)	2-89; 4-97	2-227	4-233	4-113	4-54	2-375	2-346	
Surface Type-Length (km)	AC-158; PM-28	AC-227	AC-233	AC-113	AC-54	AC-247; PM-128	AC-117; PM-229	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)								

Summary

Road Characteristic	Kazakhstan	XUAR	Total
Total Length (km)	2,388	1,534	3,922
Surface Condition (km-%):			
Good	1,541-64.5%	1,534-100.0%	3,075-78.4%
Fair	847-35.5%	0-0.0%	847-21.6%
No of Lanes (km-%):			
2	2,295-96.1%	1,037-67.6%	3,332-85.0%
4	93-3.9%	497-32.4%	590-15.0%
Surface Type (km-%):			
AC	1,648-69.0%	1,149-74.9%	2,797-71.3%
PM	740-31.0%	385-25.1%	1,125-28.7%

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 1c: EUROPE - EAST ASIA VIA TORUGART BY ROAD

KAZAKHSTAN

	Fedorovka (Border of Russia)	Kostanai	Ruzaevka	Zhaksy	Atbasar	Astrakhanka	Astana	Osakarovka	Karaganda	Aksu-Ayuly	Burybaital	Birlik	Lugovaya	Chaldovar (border of KGZ)
AADT	1,297	1,102	502	1,045	3,284	4,747	6,105	7,781	6,684	5,625	2,373	1,439	4,148	
Surface Condition-Length (km)	G-170	G-172; F-75	G-80; F-39	G-85	G-42, F-72	G-10; F-123	G-87	G-93	G-118	G-542	F-113	F-160	G-16; F-16	
AH Reference	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 5	
Design Standard	II, III	I, II, III	II, III	I, II, III	II, III	I, II, III	I, II	I, II	II	II, III	III	II, III	II, III	
Section Length (km)	170	247	119	85	114	133	87	93	118	542	113	160	32	
Terrain	F	F	F	F	F	F	F	F	F	F	F	F	F	
No. of Lanes-Length (km)	2-170	2-244; 4-3	2-119	2-85	2-114	2-133	2-82; 4-5	2-58; 4-35	2-118	2-542	2-113	2-160	2-32	
Surface Type-Length (km)	AC-147; PM-23	AC-100; PM-147	AC-62; PM-57	AC-58; PM-27	AC-111; PM-3	AC-90; PM-43	AC-87	AC-93	AC-118	AC-529; PM-13	PM-113	AC-35; PM-125	AC-10; PM-22	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)														

KRYGYZ REPUBLIC

	Chaldovar (Border of Kazakhstan)	Kara Balta	Bishkek	Tokmok	Balykchy	Kocxhkor	Naryn	At Bashi	Torugart	Torugart Pass (border of China)-AADT 304
AADT	2,650	7,198	8,239	3,076	910	584	643	438	304	
Surface Condition-Length (km)	G-32	G-60	G-60	G-110	F-60	F-120	B-45	B-136	B-8	
AH Reference	AH 5	AH 5	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	
Design Standard	II	I, II	II	II, III	II	II, III, Below III	II, III, Below III	II, III, Below III	Below III	
Section Length (km)	32	60	60	110	60	120	45	136	8	
Terrain	F	F	F	M	M	M	M	M	M	
No. of Lanes-Length (km)	2-32	4-53; 6-7	2-60	2-95; 4-15	2-60	2-120	2-45	2-136	2-8	
Surface Type-Length (km)	AC-26; PM-6	AC-60	AC-60	AC-80; PM-30	AC-60	AC-70; PM-43; CG-7	AC-18; PM-23; CG-4	AC-25; PM-12; CG-99	CG-8	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)										

XINJIANG UYGUR AUTONOMOUS REGION

	Torugart pass (border of KGZ)- AADT 304	Jct. AH4/AH61	Kashi	Kuqa	Xiaocaohu	Turpan	Hami	Anxi (Gansu border)
AADT	889	3,399	5,664	10,141	6,810	6,810	6,810	
Surface Condition-Length (km)	G-150	G-17	G-677	G-612	G-54	G-375	G-346	
AH Reference	AH 61	AH 4	AH 4	AH 4	AH 5	AH 5	AH 5	
Design Standard	III	II	II	Primary, I, II	Primary	II, III	II, III	
Section Length (km)	150	17	677	612	54	375	346	
Terrain	M	H	H	F	F	F	F	
No. of Lanes-Length (km)	2-150	2-17	2-677	2-282; 4-330	4-54	2-375	2-346	
Surface Type-Length (km)	PM-150	AC-17	AC-677	AC-612	AC-54	AC-247; PM-128	AC-117; PM-229	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)								

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

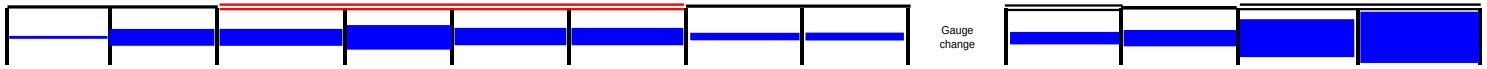
Summary

Road Characteristic	Kazakhstan	Kyrgyz Republic	XUAR	Total
Total Length (km)	2,013	631	2,231	4,875
Surface Condition (km-%):				
Good	1,415-70.3%	262-41.5%	2,231-100.0%	3,908-80.2%
Fair	598-29.7%	180-28.5%	0-0.0%	778-16.0%
Bad	0-0.0%	189-30.0%	0-0.0%	189-3.8%
No of Lanes (km-%):				
2	1,970-97.9%	556-88.1%	1,847-82.8%	4,373-89.7%
4	43-2.1%	68-10.8%	384-17.2%	495-10.2%
6	0-0.0%	7-1.1%	0-0.0%	7-0.1%
Surface Type (km-%):				
AC	1,440-71.5%	399-63.2%	1,724-77.3%	3,563-73.1%
PM	573-28.5%	114-18.1%	507-22.7%	1,194-24.5%
CG	0-0.0%	118-18.7%	0-0.0%	118-2.4%

Rail Corridor Characteristics and Traffic Density

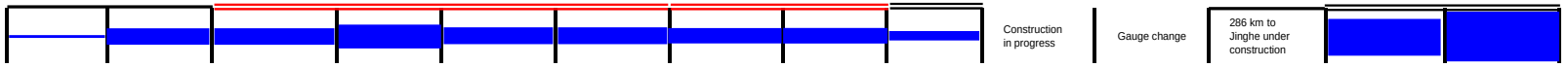
CAREC-1a Europe to China via Dostyk (Druzhba) by Rail

Section Length (km)		378		223		188		296		218		359		524		318				216		240		180		580		
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520				1 435		1 435		1 435		1 435		
Terrain F-Flat, H-Hilly, M-Mount.		F		F		F		F		F		F, H		F		F				F		F		F		F		
Single / Double Track		S		S		D		D		D		D		S		S				D		S		D		D		
Electrified Y/N		N		N		Y		Y		Y		Y		N		N				N		N		N		N		
Traffic, tons	Troitsk	2,723,304	Kostanai	15,696,168	Novoishimskaya	15,835,300	Kokshetau	22,847,555	Astana	19,492,916	Karaganda	16,138,276	Moyinty	7,052,786	Aktogay	7,320,752	Dostyk (Druzhba)	BCP	Ala Shankou	11,611,000	Kuytun	15,221,000	Urumqi	35,203,000	Turpan	47,621,775	Hexi (Anxi)	



CAREC-1b Europe to China via Khorgos by Rail

Section Length (km)		378		223		188		296		218		359		446		311		192						632		164		580		
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		1520								1 435		1 435		
Terrain F-Flat, H-Hilly, M-Mount.		F		F		F		F		F		F, H		F, H		F, H		F, H						F		F		F		
Single / Double Track		S		S		D		D		D		D		D		D		D						S		D		D		
Electrified Y/N		N		N		Y		Y		Y		Y		Y		Y		N						N		N		N		
Traffic, tons	Troitsk	2,723,304	Kostanai	15,696,168	Novoishimskaya	15,835,300	Kokshetau	22,847,555	Astana	19,492,916	Karaganda	16,138,276	Moyinty	14,721,146	Shu	14,887,275	Almaty	9,050,944	Sary-Ozek	Construction in progress	Khorgos	BCP	Huocheng		Urumqi	35,203,000	Turpan	47,621,775	Hexi (Anxi)	



CAREC-1c Europe to China via Kyrgyzstan by Rail

Section Length (km)		378		223		188		296		218		359		446		115		62		90		172				705		740		580		
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520				1 434		1 435		1 435		
Terrain F-Flat, H-Hilly, M-Mount.		F		F		F		F		F		F, H		F, H		F		F		F		F, H, M				F		F		F		
Single / Double Track		S		S		D		D		D		D		D		D		S		S		S				S		S		D		
Electrified Y/N		N		N		Y		Y		Y		Y		Y		Y		N		N		N				N		N		N		
Traffic, tons	Troitsk	2,723,304	Kostanai	15,696,168	Novoishimskaya	15,835,300	Kokshetau	22,847,555	Astana	19,492,916	Karaganda	16,138,276	Moyinty	14,887,275	Shu	14,887,275	Lugovaya	4,993,000	Chaldovar	4,993,000	Bishkek	1,664,333	Balykchy	Road Section of the Corridor	Kashi	2,165,000	Kuqa	11,810,000	Turpan	47,621,775	Hexi (Anxi)	

Lines in RED are electrified

Single line

Double line

Three lines

Four or more

CAREC CORRIDOR 2: MEDITERRANEAN-EAST ASIA

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 2a: MEDITERRANEAN-EAST ASIA BY ROAD VIA AKTAU

AZERBAIJAN

	Red Bridge (border of Georgia)	Gazakh	Ganja	Yevlakh	Ujar	Kyurdamir	Gazi Mammed	Alyat	Lokbatan	Baku (Ferry terminal)
AADT	8,733	9,100	7,992	9,620	8,660	8,422	9,860	19,126	19,732	
Surface Condition-Length (km)	G-20; F-19	G-79; F-50	G-40; F-30	G-37; F-16	G-22; F-24	G-38; F-43	G-46	G-54	G-16	
AH Reference	AH 5	AH 5	AH 5	AH 5	AH 5	AH 5	AH 5	AH 5	AH 5	
Design Standard	II	II	II	II	II	II	II	I	II	
Section Length (km)	39	129	70	53	46	81	46	54	16	
Terrain	F	F	F	F	F	F	F	F	F	
No. of Lanes-Length (km)	2-39	2-129	2-70	2-53	2-46	2-81	2-46	4-54	2-16	
Surface Type-Length (km)	AC-39	AC-129	AC-70	AC-53	AC-46	AC-81	AC-46	AC-54	AC-16	

BY SEA ACROSS THE CASPIAN (400 KM)-AADT 160

KAZAKHSTAN

	Aktau Port	Zhetybai	Beineu	Karakalpakya (border of Uzbekistan)
AADT	2,678	1,098	424	
Surface Condition-Length (km)	F-78	G-60; F-325	F-84	
AH Reference	AH 70	AH 70	AH 63	
Design Standard	II	II, III, Below III	II, III, Below III	
Section Length (km)	78	385	84	
Terrain	F	F	F	
No. of Lanes-Length (km)	2-78	2-385	2-84	
Surface Type-Length (km)	AC-78	AC-125; PM-52; CG-208	AC-2; PM-9; CG-69	

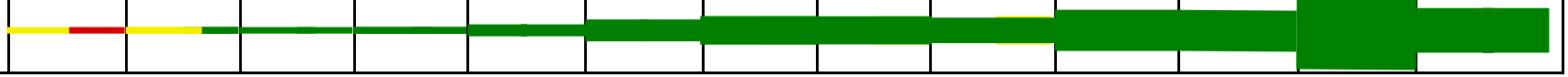
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)

UZBEKISTAN

	Karakalpakya (border of Kazakhstan)	Kungrad	Nukus	Beruni	Turtkul	Gazli	Bukhara	Jct Navoi	Karta-Kurgan	Samarkand
AADT	2,018	2,215	1,972	2,379	3,671	6,735	8,796	8,657	7,844	12,689
Surface Condition-Length (km)	F-164; B-164	G-33; F-63	G-95; F-45	G-30	G-295	G-95	G-105	G-89	G-81	G-100
AH Reference	AH 63	AH 63	AH 63	AH 63	AH 63	AH 63	AH 5	AH 5	AH 5	AH 5
Design Standard	II, III	II, III	II, III	II, III	II, III	I, III, III	I	I	I	I
Section Length (km)	328	96	140	30	295	95	105	89	81	100
Terrain	F	F	F	F	F	F	F	F	F	F
No. of Lanes-Length (km)	2-328	2-96	2-140	2-30	2-295	2-78; 4-17	4-105	4-89	4-81	4-100
Surface Type-Length (km)	AC-40; PM-288	AC-56; PM-40	AC-70; PM-70	AC-22; PM-8	AC-170; PM-125	AC-75; PM-20	AC-100; CC-5	AC-89	AC-79; CC-2	AC-100

	Dijzak	Syrdaria	Tashkent	Achangaran
AADT	12,635	23,901	13,736	
Surface Condition-Length (km)	G-102	G-75	G-90	
AH Reference	AH 5	AH 5	AH 7	
Design Standard	I	I	I, II	
Section Length (km)	102	75	90	
Terrain	F	F	H	
No. of Lanes-Length (km)	4-102	4-75	2-65; 4-25	
Surface Type-Length (km)	CC-102	AC-33; CC-42	AC-90	

Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)



UZBEKISTAN

	Achangaran	Angren	Kokand	Margilan	Andijan	Kara Suu (border of Kyrgyz Republic)
AADT	14,173	13,244	11,538	3,718	2,119	1,035
Surface Condition-Length (km)	G-45	G-135	G-104	G-45	G-45	G
AH Reference	AH 7	AH 7	AH 7	AH 7	AH 7	-
Design Standard	II, III	II, III	I	I	I	-
Section Length (km)	45	135	104	45	45	23
Terrain	M, H	M	F	F	F	F
No. of Lanes-Length (km)	2-45	2-135	4-104	4-45	4-45	2-23
Surface Type-Length (km)	AC-13; PM-32	AC-119; CC-16	AC-104	AC-45	AC-45	AC-23

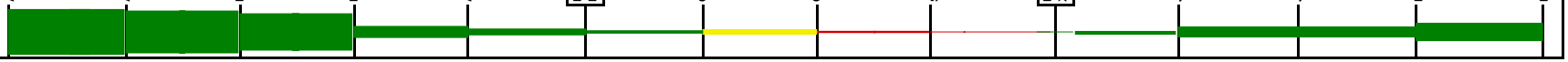
KYRGYZ REPUBLIC

	Osh	Ghulcha	Sary Tash	Irkeshtam (Border of XUAR)- AADT 126
AADT	1,745	675	255	1,143
Surface Condition-Length (km)	F	B	B	G
AH Reference	AH 65	AH 65	AH 65	AH 65
Design Standard	II	II	Below III	III
Section Length (km)	80	104	78	177
Terrain	M	M	M	M
No. of Lanes-Length (km)	2-80	2-104	2-78	2-177
Surface Type-Length (km)	AC-80	AC-104	CG-78	PM-177

XINJIANG UYGUR AUTONOMOUS REGION

	Jct. AH 61/AH 65	Jct. AH 4/AH 61	Kashi	Kuqa
AADT	3,399	3,399	5,664	
Surface Condition-Length (km)	G	G	G	
AH Reference	AH 61	AH 4	AH 4	
Design Standard	III	II	II	
Section Length (km)	40	17	677	
Terrain	H	H	F	
No. of Lanes-Length (km)	2-40	2-17	2-677	
Surface Type-Length (km)	PM-40	AC-17	AC-677	

Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)



XINJIANG UYGUR AUTONOMOUS REGION

	Kuqa	Xiaocaohu	Turpan	Hami	Amxi (Gansu border)
AADT	10,141	6,810	6,810	6,810	
Surface Condition-Length (km)	G-612	G-54	G-375	G-346	
AH Reference	AH 4	AH 5	AH 5	AH 5	
Design Standard	Primary, I, II	Primary	II, III	II, III	
Section Length (km)	612	54	375	346	
Terrain	F	F	F	F	
No. of Lanes-Length (km)	2-282; 4-330	4-54	2-375	2-346	
Surface Type-Length (km)	AC-612	AC-54	AC-247; PM-128	AC-117; PM-229	

Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)

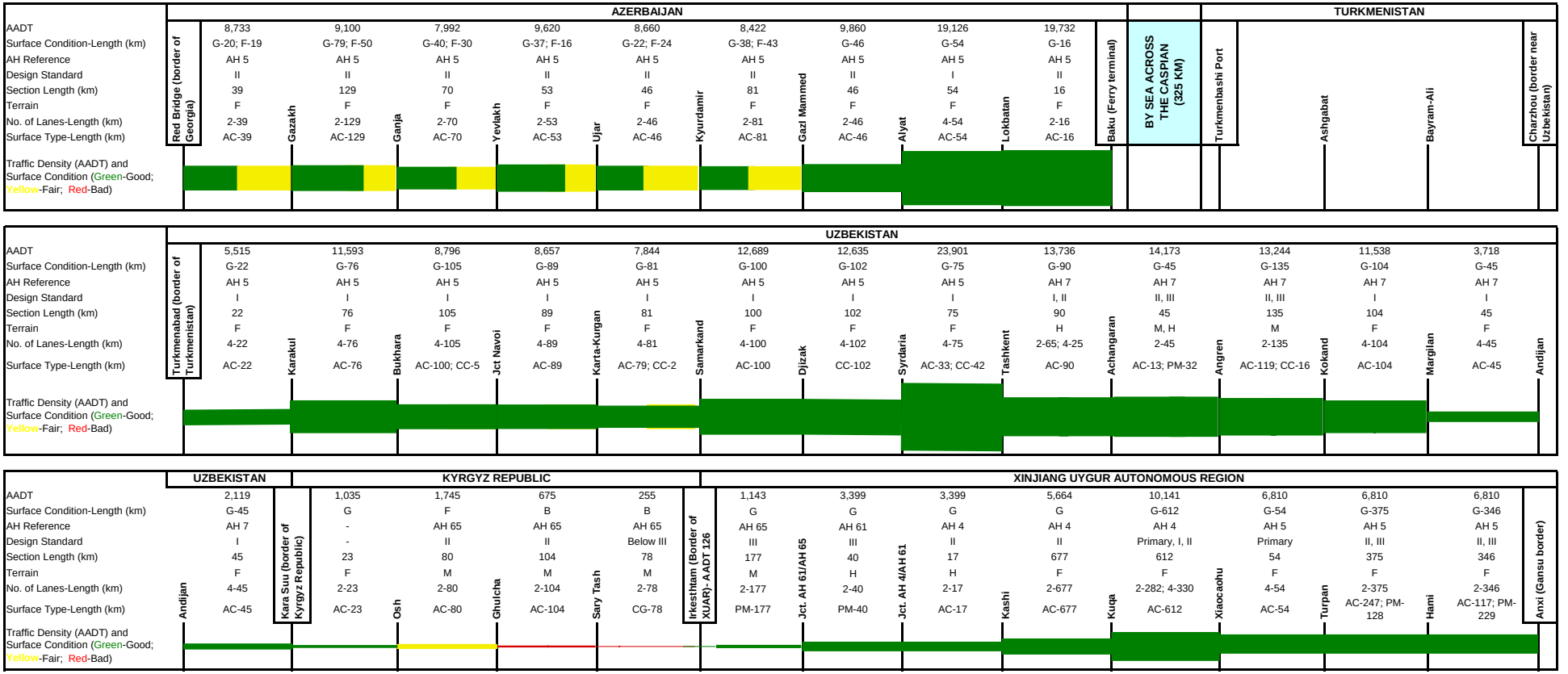
Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

Summary

Road Characteristic	Azerbaijan	Kazakhstan	Uzbekistan	Kyrgyz Republic	XUAR	Total
Total Length (km)	534	547	2,000	262	2,298	5,641
Surface Condition (km-%):						
Good	352-65.9%	60-11.0%	1,564-78.2%	0-0.0%	2,298-100.0%	3,914-69.4%
Fair	182-34.1%	487-89.0%	272-13.6%	80-30.5%	0-0.0%	1,381-24.5%
Bad	0-0.0%	0-0.0%	164-8.2%	182-69.5%	0-0.0%	346-6.1%
No of Lanes (km-%):						
2	242-45.3%	547-100.0%	1,212-60.6%	262-100.0%	1,914-83.3%	4,177-74.0%
4	292-54.7%	0-0.0%	788-39.4%	0-0.0%	384-16.7%	1,464-26.0%
6	0-0.0%	0-0.0%	0-0.0%	0-0.0%	0-0.0%	0-0.0%
Surface Type (km-%):						
AC	534-100.0%	205-37.5%	1,510-75.5%	184-70.2%	1,724-75.%	4,157-73.6%
PM	0-0.0%	61-11.2%	323-16.2%	0-0.0%	574-25.0%	958-17.0%
CG	0-0.0%	281-51.4%	0-0.0%	78-29.8%	0-0.0%	359-6.4%
CC	0-0.0%	0-0.0%	167-8.4%	0-0.0%	0-0.0%	167-3.0%

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 2b: MEDITERRANEAN-EAST ASIA BY ROAD VIA TURKMENBASHI



Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

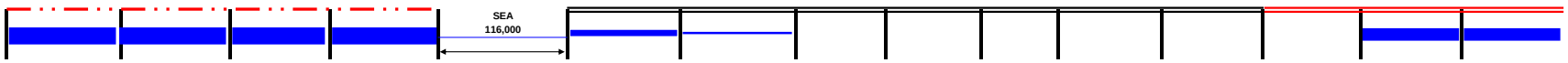
Summary

Road Characteristic	Azerbaijan	Uzbekistan	Kyrgyz Republic	XUAR	Total
Total Length (km-%)	534	1,114	262	2,298	4,208
Surface Condition (km-%):					
Good	352-65.9%	1,114-100.0%	0-0.0%	2,298-100.0%	3,764-89.5%
Fair	182-34.1%	0-0.0%	80-30.5%	0-0.0%	262-6.2%
Bad	0-0.0%	0-0.0%	182-69.5%	0-0.0%	182-4.3%
No of Lanes (km-%):					
2	242-45.3%	245-22.0%	262-100.0%	1,914-83.3%	2,663-63.3%
4	292-54.7%	869-78.0%	0-0.0%	384-16.7%	1,545-36.7%
6	0-0.0%	0-0.0%	0-0.0%	0-0.0%	0-0.0%
Surface Type (km-%):					
AC	534-100.0%	915-82.1%	184-70.2%	1,724-75.%	3,357-79.7%
PM	0-0.0%	32-2.9%	0-0.0%	574-25.0%	606-14.4%
CG	0-0.0%	0-0.0%	78-29.8%	0-0.0%	78-1.9%
CC	0-0.0%	167-15.0%	0-0.0%	0-0.0%	167-4.0%

Rail Corridor Characteristics and Traffic Density

CAREC-2a: MEDITERRANEAN-CHINA VIA AKTAU BY RAIL IN AZE AND CENTRAL ASIA

Section Length (km)		55		162		372		81			408		99		428		408		267		290		156		113		89		138
Gauge Width		1520		1520		1520		1520			1520		1520		1520		1520		1520		1520		1520		1520		1520		1520
Terrain F-Flat, H-Hilly, M-Mount.		H		H, F		F		F			F		F		F		F		F		F		F		F		H		H
Single / Double Track		4 lines		4 lines		4 lines		4 lines			D		D		D		D		D		D		D		D		D		D
Electrified Y/N		Y		Y		Y		Y			N		N		N		N		N		N		N		Y		Y		Y
Traffic, tons		17,024,600		17,024,600		17,024,600		17,024,600			6,206,001		2,267,218														12,500,000		12,500,000
	Gard-Beyuk (Border of Georgia)		Agstafa		Yevlakh		Alyat		**Baku**	Sea Ferry to Aktau	**Aktau**	Beineu		Karakalpakiya		Nukus		Turtkul		Uchkuduk		Navoi		Samarkand		Djizak		**Khavast**	

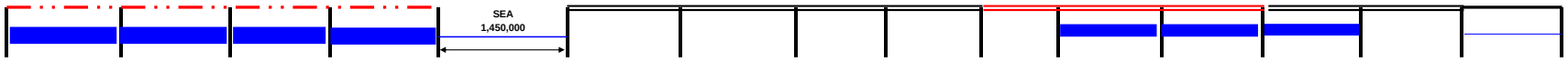


CAREC-2a: MEDITERRANEAN-CHINA VIA AKTAU BY RAIL IN AZE AND CENTRAL ASIA (cont'd)

Section Length (km)		428		136		50			705		740		580	
Gauge Width		1520		1520		1520			1 434		1 435		1 435	
Terrain F-Flat, H-Hilly, M-Mount.		F		F		F			F		F		F	
Single / Double Track		D		D		D			S		S		D	
Electrified Y/N		N		N		N			N		N		N	
Traffic, tons		11,700,000				221,000			2,165,000		11,810,000		47,621,775	
	Kanibadam		Kokand		**Andijan**		**Kara Suu/Osh**	**Road Section of the Corridor**		**Kashi**		Kuqa		Turpan	**Hexi (Anxi)**

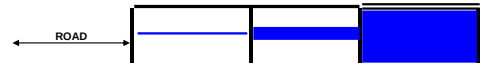
CAREC-2b: MEDITERRANEAN-CHINA VIA AKTAU BY RAIL IN AZE AND CENTRAL ASIA

Section Length (km)		55		162		372		81			1166		120		93		156		113		89		138		428		136		50	
Gauge Width		1520		1520		1520		1520			1520		1520		1520		1520		1520		1520		1520		1520		1520		1520	
Terrain F-Flat, H-Hilly, M-Mount.		H		H, F		F		F			F		F		F		F		F		H		H		F		F		F	
Single / Double Track		4 lines		4 lines		4 lines		4 lines			D		D		D		D		D		D		D		D		D		S	
Electrified Y/N		Y		Y		Y		Y							N		N		Y		Y		Y		N		N		N	
Traffic, tons		17,024,600		17,024,600		17,024,600		17,024,600													12,500,000		12,500,000		11,700,000				221,000	
	Gard-Beyuk (Border of Georgia)		Agstafa		Yevlakh		Alyat		**Baku**	**Sea Ferry to Turkmenbashi**	**Turkmenbashi**		**Turkmenabad**		Bukhara		Navoi		Samarkand		Djizak		Khavast		Kanibadam		Kokand		**Andijan**	**Kara Suu/Osh**



CAREC-2b: MEDITERRANEAN-CHINA VIA AKTAU BY RAIL IN AZE AND CENTRAL ASIA (cont'd)

Section Length (km)			705		740		580	
Gauge Width			1 434		1 435		1 435	
Terrain F-Flat, H-Hilly, M-Mount.			F		F		F	
Single / Double Track			S		S		D	
Electrified Y/N			N		N		N	
Traffic, tons			2,165,000		11,810,000		47,621,775	
	Kara Suu/Osh	Road Section of the Corridor	**Kashi**	Kuqa		Turpan		**Hexi (Anxi)**



Lines in RED are electrified
Single line
Double line
Three lines
Four or more

CAREC CORRIDOR 3: RUSSIAN FEDERATION - MIDDLE EAST AND SOUTH ASIA

Road Corridor Characteristics and Traffic Density

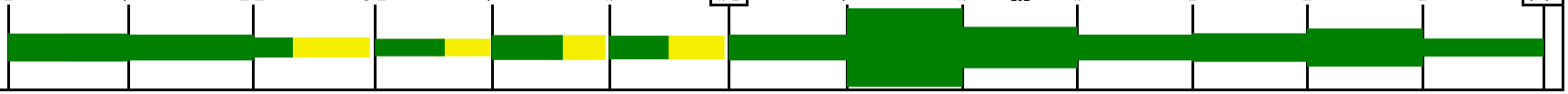
CAREC CORRIDOR 3a: RUSSIAN FEDERATION-MIDDLE EAST AND SOUTH ASIA BY ROAD VIA TASHKENT

KAZAKHSTAN

	Rubtsovsk (Border of Russia)		Semey		Georgievka		Ayaguz		Taskesen		Ucharal		Kabanbai		Sarkand		Kyzlagach		Taldy Korgan		Saryozek		Kapshagai		Almaty		Kaskelen
AADT		2,448		1,529		2,134		2,137		815		2,480		2,670		1,679		2,971		4,274		3,521		8,111		11,762	
Surface Condition-Length (km)		G-63; F-48		G-32; F-116		G-44; F-151		G-21; F-74		G-30; F-96		G		G		G		G		G		G-79; F-15		G-58; F-5		G-12; F-1	
AH Reference		AH 64		AH 60		AH 60		AH 60		AH 60		AH 60		AH 60		AH 60		AH 60		AH 60		AH 60		AH 60		AH 5	
Design Standard		II, III		I, II, III		II, III		III		II, III		III		II, III		I, II, III		I, II, III		I, II, III		I, III		I		I	
Section Length (km)		111		148		195		95		126		50		97		85		39		89		94		63		13	
Terrain		H		H		H		H		H-42; F-84		H		H		H		H		H		H		F		F	
No. of Lanes-Length (km)		2-111		2-142; 4-6		2-195		2-95		2-126		2-50		2-97		2-76; 4-9		2-32; 4-7		2-74; 4-15		2-29; 4-65		4-63		4-13	
Surface Type-Length (km)		AC-17; PM-94		AC-57; PM-91		AC-10; PM-185		PM-95		AC-45; PM-81		PM-50		AC-16; PM-81		AC-33; PM-52		AC-9; PM-30		AC-60; PM-29		AC-72; PM-22		AC-63		AC-13	

KAZAKHSTAN | **UZBEKISTAN**

	Kaskelen		Torgap		Kordai (Border of Kyrgyz Republic)		Chaldovar (Border of Kyrgyz		Taraz		Shymkent		Saryagash (Border of Uzbekistan)		Tashkent		Syrdaria		Samarkand		Katta Kurgan		Bukhara		Karakul		Turkmenabad (Border of Turkmenistan)
AADT		8,522		7,894		6,118		5,310		7,611		7,219		7,891		23,901		12,650		7,844		8,726		11,593		5,515	
Surface Condition-Length (km)		G		G		G-22; F-128		G-78; F-63		G-68; F-123		G-58; F-52		G		G		G		G		G		G		G	
AH Reference		AH 5		AH 5		AH 51		AH 5		AH 5		AH 5		AH 5		AH 5		AH 5		AH 5		AH 5		AH 5		AH 5	
Design Standard		I, II, III		II, III		II, III		II, III		I, II, II		I, II		I		I		I		I		I		I		I	
Section Length (km)		75		118		150		141		191		110		27		75		202		81		194		76		22	
Terrain		H-25; M-50		H		F		F		M-110; H-81		F		F		F		F		F		F		F		F	
No. of Lanes-Length (km)		2-40; 4-35		2-118		2-150		2-141		2-185; 4-6		2-13; 4-97		4-27		4-75		4-202		4-81		4-194		4-76		4-22	
Surface Type-Length (km)		AC-36; PM-39		AC-104; PM-14		AC-33; PM-117		AC-33; PM-108		AC-68; PM-123		AC-110		AC-11; CC-16		AC-33; CC-42		AC-100; CC-102		AC-79; CC-2		AC-189; CC-5		AC-76		AC-22	



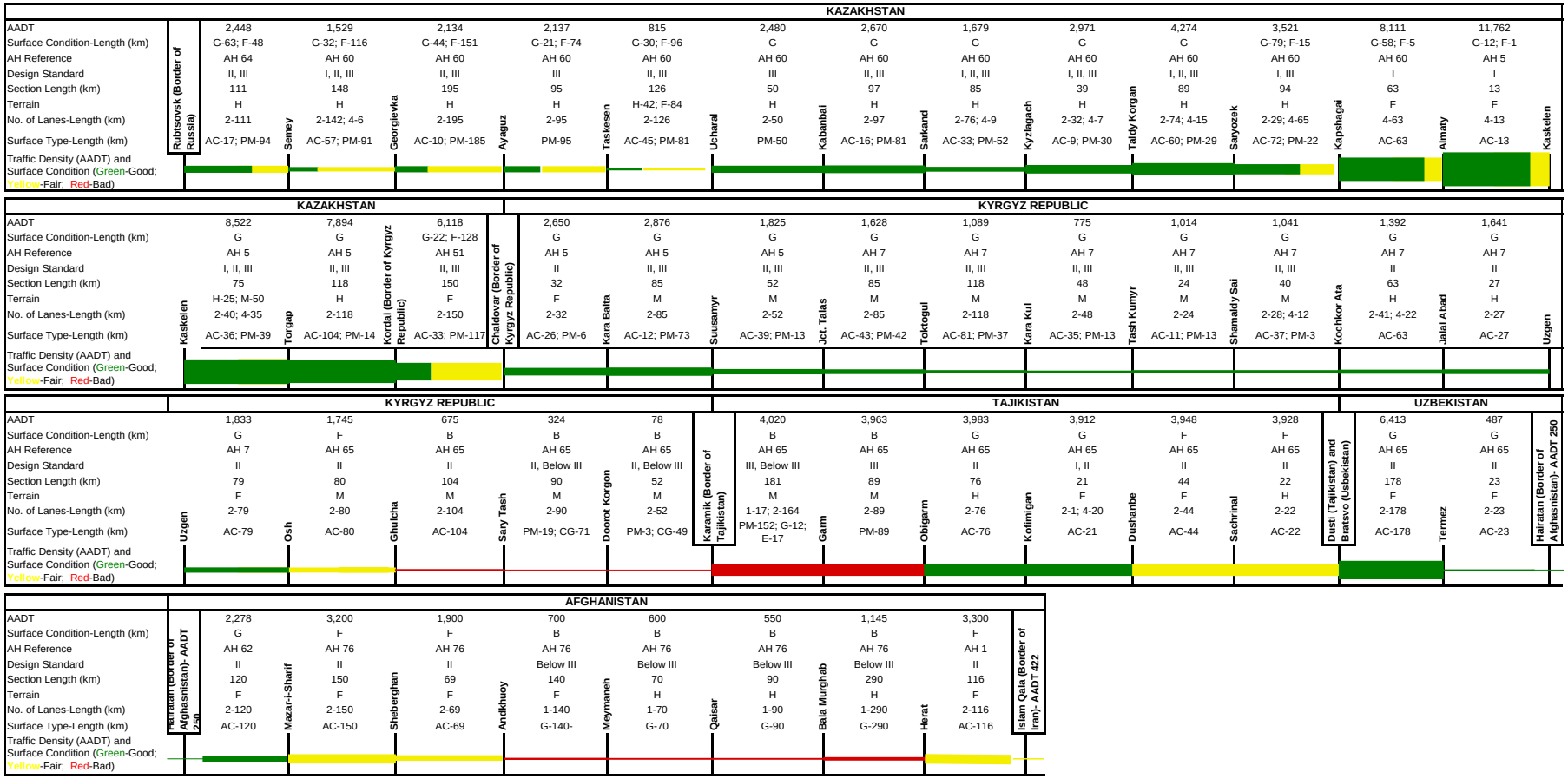
Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

Summary

Road Characteristic	Kazakhstan	Uzbekistan	Total
Total Length (km)	1,990	677	2,667
Surface Condition (km-%):			
Good	1,118-56.2%	677-100.0%	1,795-67.3%
Fair	872-43.8%	0-0.0%	872-32.7%
No of Lanes (km-%):			
2	1,674-84.1%	0-0.0%	1,674-62.8%
4	316-15.9%	677-100.0%	993-37.2%
Surface Type (km-%):			
AC	779-39.1%	510-75.3%	1,289-48.3%
PM	1,211-60.9%	0-0.0%	1,211-45.4%
CC	0-0.0%	167-24.7%	167-6.3%

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 3b: RUSSIAN FEDERATION-MIDDLE EAST AND SOUTH ASIA BY ROAD VIA DUSHANBE AND HERAT



Summary

Road Characteristic	Kazakhstan	Kyrgyz Republic	Tajikistan	Uzbekistan	Afghanistan	Total
Total Length (km)	1,548	979	433	201	1,045	4,206
Surface Condition (km-%):						
Good	699-45.2%	653-66.7%	97-22.4%	201-100.0%	120-11.5%	1,570-37.3%
Fair	849-54.8%	80-8.2%	66-15.2%	0-0.0%	335-32.1%	1,330-31.6%
Bad	0-0.0%	246-25.1%	270-62.4%	0-0.0%	790-75.6%	1,306-31.1%
No of Lanes (km-%):						
2	1,476-95.3%	979-100.0%	413-95.4%[a]	0-0.0%	1,045-100.0%[b]	3,913-93.0%
4	72-4.7%	0-0.0%	20-4.6%	201-100.0%	0-0.0%	293-7.0%
Surface Type (km-%):						
AC	568-36.7%	637-65.1%	163-37.6%	201-100.0%	455-43.5%	2,024-48.1%
PM	860-55.5%	222-22.7%	241-55.7%	0-0.0%	0-0.0%	1,323-31.5%
CG or G	120-7.8%	120-12.2%	12-2.8%	0-0.0%	590-56.5%	842-20.0%
E	0-0.0%	0-0.0%	17-3.9%	0-0.0%	0-0.0%	17-0.4%

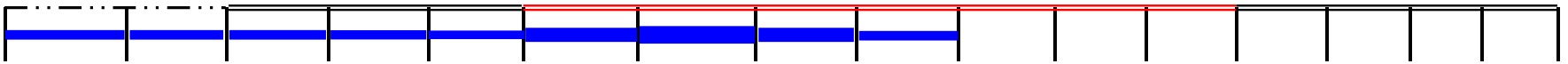
[a] 17 km one-lane road; [b] 590 km one-lane road.

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary

Rail Corridor Characteristics and Traffic Density

CAREC 3a: SIBERIA-PERSIAN GULF BY RAIL

Section Length (km)		145		335		133		365		192		311		115		399		127		30		89		161		113		156		172		41	
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520	
Terrain F-Flat, H-Hilly, M-Mount.		H		F		F, H		F		H		H		F		F		F		F		F		F		F		F		F		F	
Single / Double Track		4 lines		4 lines		D		D		D		D		D		D		D		D		D		D		D		D		D		D	
Electrified Y/N		N		N		N		N		N		Y		Y		Y		Y		Y		Y		Y		N		N		N		N	
Traffic, tons	**Rubtsovsk**	10,605,856	Semey	9,848,333	Ayaguz	9,390,423	Aktogay	9,736,297	Saryozek	9,050,944	Almaty	14,832,346	Shu	18,429,121	**Lugovaya**	14,249,295	Arys	10,069,470	**Saryagash**		**Tashkent**		Syrdaryinskaya		Djizak		Samarkand		Navoi		Alat		**Turkmenabad**

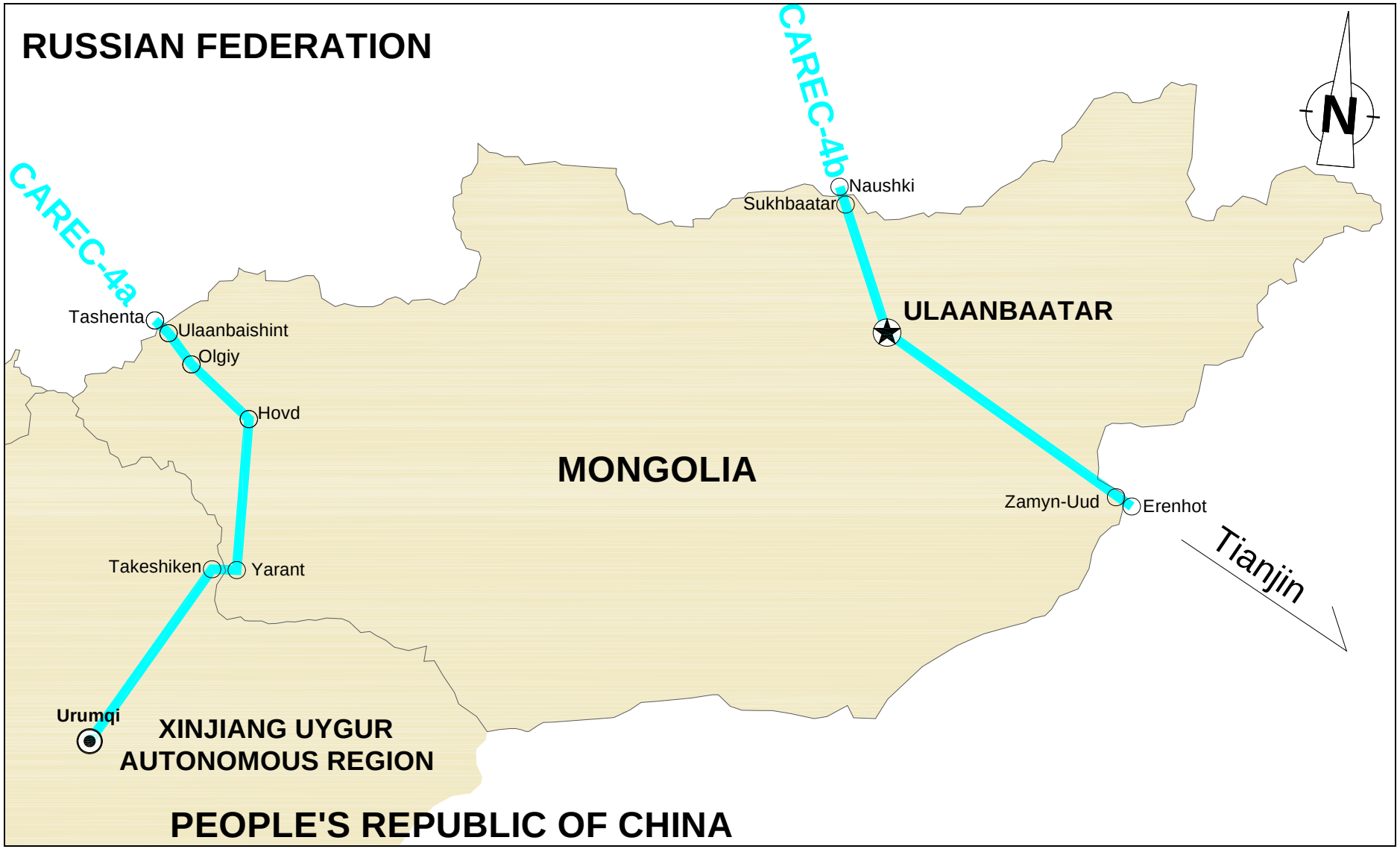


CAREC 3b: SIBERIA-PERSIAN GULF BY RAIL

Section Length (km)		145		335		133		365		192		311		115		62		64				225	
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		1520				1520	
Terrain F-Flat, H-Hilly, M-Mount.		H		F		F, H		F		H		H		F		F		F				F	
Single / Double Track		4 lines		4 lines		D		D		D		D		D		S		S				D	
Electrified Y/N		N		N		N		N		N		Y		N		N		N				N	
Traffic, tons	**Rubtsovsk**	10,605,856	Semey	9,848,333	Ayaguz	9,390,423	Aktogay	9,736,297	Saryozek	9,050,944	Almaty	14,832,346	Shu	18,429,121	**Lugovaya**	4,993,000	Chaldovar	4,993,000	Kara-Balta	Road Section	**Dushanbe**		**Termez**

Lines in RED are electrified
Single line
Double line
Three lines
Four or more

CAREC CORRIDOR 4: RUSSIAN FEDERATION – MONGOLIA - PRC



Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 4a: RF-MONGOLIA-PRC VIA WESTERN MONGOLIA

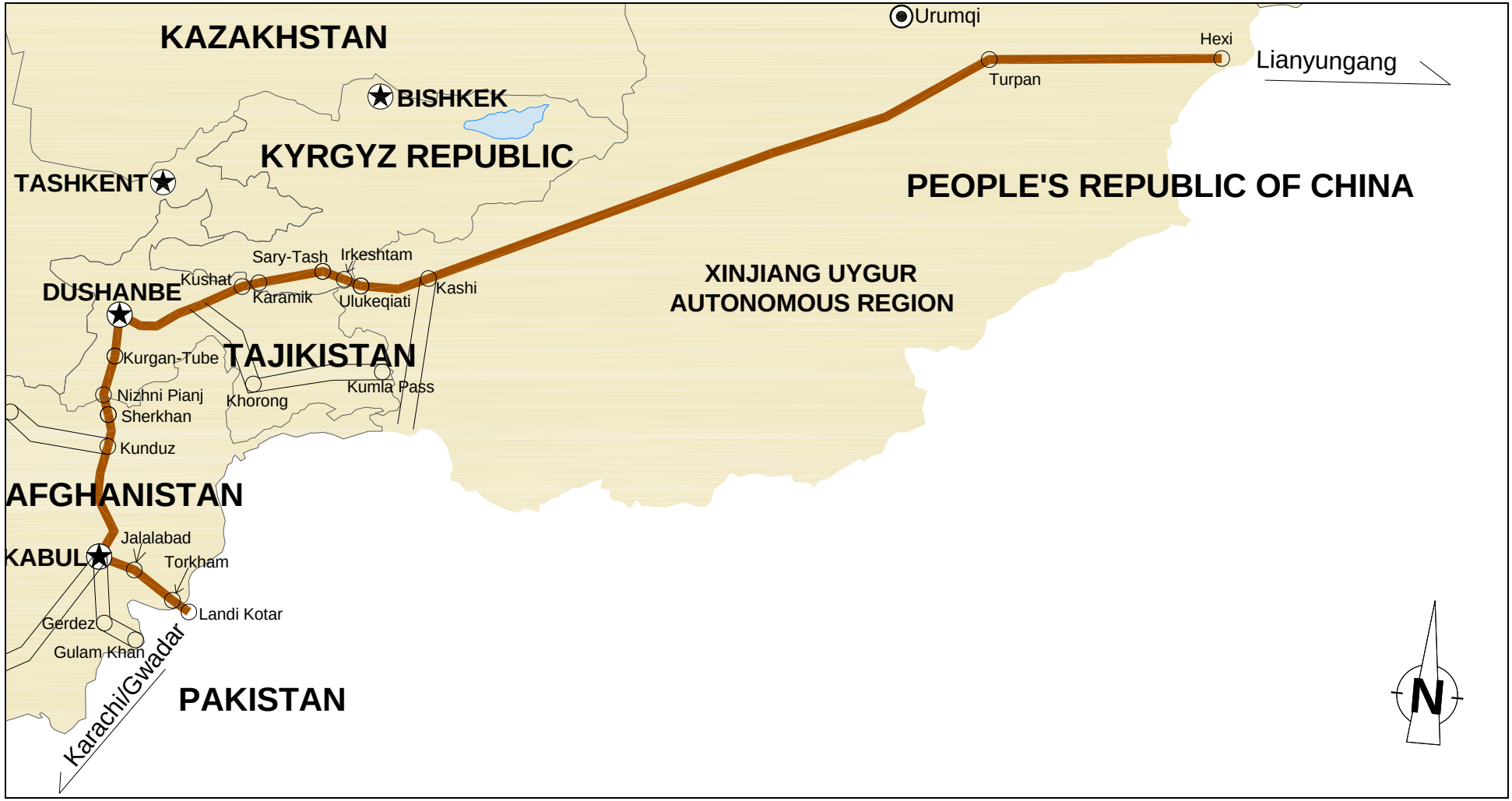
	MONGOLIA										XUAR		
AADT	Tashenta (Border of Russia)	211	Ulaanbaishint	211	Olgiy	224	Hovd	175	Manhan	220	Bulgan	280	Yarant (Border of XUAR)-AADT 210	1,056	Dahuangshan	11,300	Urumqi
Surface Condition-Length (km)		G-6; B-29		B-70		G-5; B-213		B-82		B-273		G-47		G		G	
AH Reference		AH 4		AH 4		AH 4		AH 4		AH 4		AH 4		-		-	
Design Standard		Below III		Below III		Below III		Below III		Below III		III		II, III		II	
Section Length (km)		35		70		218		82		273		47		430		156	
Terrain		H		F		H		F		H		F		H		F	
No. of Lanes-Length (km)		2-35		2-70		2-218		2-82		1-273		2-47		2-430		4-156	
Surface Type-Length (km)		AC-6; G-29		G-4; E-66		AC-5; G-24; E-189		G-82		E-273		AC-47		AC-10; PM-420		AC-156	
Traffic Density (AADT) and Surface Condition (Green-Good; **Yellow**-Fair; Red-Bad)																	

Design Standard Codes and Surface Types:
Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary

Summary

Road Characteristic	Mongolia	XUAR	Total
Total Length (km)	725	586	1,311
Surface Condition (km-%):			
Good	58-8.0%	586-100.0%	644-49,1%
Fair	0-0.0%	0-0.0%	0-0.0%
Bad	667-92.0%	0-0.0%	667-50.9
No of Lanes (km-%):			
1	273-37.7%	0-0.0%	273-20.8%
2	452-62.3%	430-73.4%	882-67.3%
4	0-0.0%	156-26.6%	156-11.9%
Surface Type (km-%):			
AC	58-8.0%	166-28.3%	224-17.1%
PM	0-0.0%	420-71.7%	420-32.0%
CG, G	139-19.2%	0-0.0%	139-10.6%
E	528-72.8%	0-0.0%	528-40.3%

CAREC CORRIDOR 5: EAST ASIA - MIDDLE EAST AND SOUTH ASIA



Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 5: EAST ASIA-MIDDLE EAST AND SOUTH ASIA VIA KABUL AND DUSHANBE

	AFGHANISTAN								TAJIKISTAN				
	Torkham (border of Pakistan)-AADT 1,100	Jalalabad	Kabul	Djbulsarcj	Doshi	Polekumri	Kunduz	Shirkhan	Nijni Pianj (Border of Tajikistan)	Kurgan - Tube	Dushanbe	Kofimigan	Obigarm	Garm
AADT	7,100	6,585	6,030	3,900	3,400	2,500	2,200	41	4,041	3,982	3,912	3,983	3,963	
Surface Condition-Length (km)	G	G-20; B-127	G	G	G	B	B	River	B	G	G	G	B	
AH Reference	AH 1	AH 1	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 7	AH 65	AH 65	AH 65	
Design Standard	III	I, II, Below III	II	II	II	II	II	Below III	II, Below III	II	I, II	II	III	
Section Length (km)	77	147	64	108	47	108	61	0.2 (river crossing)	102	83	21	76	89	
Terrain	F	M	M	M	H	H	H	River	F	F	F	H	M	
No. of Lanes-Length (km)	2-77	2-137; 4-10	2-64	2-108	2-47	2-108	2-61	-	2-102	2-73; 4-10	2-1; 4-20	2-76	2-89	
Surface Type-Length (km)	AC-77	AC-147	AC-64	AC-108	AC-47	AC-108	AC-61	-	AC-76; CG-26	AC-83	AC-21	AC-76	PM-89	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)														

	TAJIKISTAN	KYRGYZ REPUBLIC				XUAR								
	Garm	Karamik (Border of Kyrgyz Republic)	Doorot Korgon	Sary Tash	Irkeshtam (Border of XUAR)- AADT 126	Jct. AH 61/AH 65	Jct. AH 4/AH 61	Kashi	Kuqa	Xiaocaohu	Turpan	Hami	Anxi (Gansu border)	
AADT	4,020	78	324	255	1,143	3,399	3,399	5,664	10,141	6,810	6,810	6,810		
Surface Condition-Length (km)	B	B	B	B	G	G	G	G	G-612	G-54	G-375	G-346		
AH Reference	AH 65	AH 65	AH 65	AH 65	AH 65	AH 61	AH 4	AH 4	AH 4	AH 5	AH 5	AH 5		
Design Standard	III, Below III	III, Below III	II, Below III	Below III	III	III	II	II	Primary, I, II	Primary	II, III	II, III		
Section Length (km)	181	52	90	78	177	40	17	677	612	54	375	346		
Terrain	M	M	M	M	M	H	H	F	F	F	F	F		
No. of Lanes-Length (km)	1-17; 2-164	2-52	2-90	2-78	2-177	2-40	2-17	2-677	2-282; 4-330	4-54	2-375	2-346		
Surface Type-Length (km)	PM-152; G-12; E 17	PM-3; CG-49	PM-19; CG-71	CG-78	PM-177	PM-40	AC-17	AC-677	AC-612	AC-54	AC-247; PM-128	AC-117; PM-229		
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)														

Summary

Road Characteristic	Afghanistan	Tajikistan	Kyrgyz Republic	XUAR	Total
Total Length (km)	611	552	220	2,298	3,681
Surface Condition (km-%):					
Good	315-51.6%	180-32.6%	0-0.0%	2,298-100.0%	2,793-75.9%
Bad	296-48.4%	372-67.4%	220-100.0%	0-0.0%	888-24.1%
No of Lanes (km-%):					
2	601-98.4%	522-94.6%[a]	220-100.0%	1,914-83.3%	3,257-88.5%
4	10-1.6%	30-5.4%	0-0.0%	384-16.7%	424-11.5%
Surface Type (km-%):					
AC	611-100.0%	256-46.3%	0-0.0%	1,724-75.%	2,591-70.4%
PM	0-0.0%	241-43.7%	22-10.0%	574-25.0%	837-22.7%
CG or G	0-0.0%	38-6.9%	198-90.0%	0-0.0%	236-6.4%
E	0-0.0%	17-3.1%	0-0.0%	0-0.0%	17-0.5%

[a] 17 km 1-lane

Design Standard Codes and Surface Types:
Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary

CAREC CORRIDOR 6: EUROPE - MIDDLE EAST AND SOUTH ASIA

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 6a: EUROPE-MIDDLE EAST AND SOUTH ASIA VIA WESTERN KAZAKHSTAN

	KAZAKHSTAN						UZBEKISTAN							
AADT	1,654	3,959	2,228	497	424		2,018	2,215	1,972	2,379	3,671	6,735	5,313	9,217
Surface Condition-Length (km)	G	G-26; F-67	G-9; F-113	F	F		F-164; B-164	G-33; F-63	G-95; F-45	G	G	G	G	G
AH Reference	AH 70	AH 63	AH 63	AH 63	AH 63		AH 63	AH 63	AH 63	AH 63	AH 63	AH 63	AH 63	AH 63
Design Standard	II, III	III	II. III	III, Below III	III, Below III		II, III	II, III	II, III	II, III	II, III	I, III, III	I	I, II, III
Section Length (km)	277	93	122	210	84		328	96	140	30	295	95	8	70
Terrain	F	F	F	F	F		F	F	F	F	F	F	F	F
No. of Lanes-Length (km)	2-277	2-293	2-122	2-210	2-84		2-328	2-96	2-140	2-30	2-295	2-78; 4-17	4-8	2-40; 4-30
Surface Type-Length (km)	AC-15; PM-262	PM-93	AC-81; PM-41	AC-10; PM-68; CG-92; G-40	AC-2; PM-9; CG-69; G-4		AC-40; PM-288	AC-56; PM-40	AC-70; PM-70	AC-22; PM-8	AC-170; PM-125	AC-75; PM-20	AC-8	AC-32; PM-38
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)														

	Aksarayskaya (border of Russia)	Atyrau	Dossr	Kulsary	Beineu	Karakalpakya (Border of Uzbekistan)	Kungrad	Nukus	Beruni	Turkul	Gazli	Bukhara	Kagan	Mubarek

	UZBEKISTAN							AFGHANISTAN						
AADT	9,065	9,335	8,379	4,489	4,312	4,656	487	2,278	3,200	1,900	700	600	550	
Surface Condition-Length (km)	G	G	G	F	F	G	G	G	F	F	B	B	B	
AH Reference	AH 63	AH 63	AH 63	AH 63	AH 63	AH 63	AH 63	AH 62	AH 76	AH 76	AH 76	AH 76	AH 76	
Design Standard	I, II	I, II	I, II	II, III	II, III	I, II	II	II	II	II	Below III	Below III	Below III	
Section Length (km)	40	30	62	38	127	53	23	120	150	69	140	70	90	
Terrain	F	F	F	H	H	F	F	F	F	F	F	H	H	
No. of Lanes-Length (km)	2-22; 4-18	2-20; 4-10	2-41; 4-21	2-38	2-127	2-38; 4-15	2-23	2-120	2-150	2-69	1-140	1-70	1-90	
Surface Type-Length (km)	AC-40	AC-30	AC-62	AC-30; PM-8	AC-103; PM-24	AC-53	AC-23	AC-120	AC-150	AC-69	G-140-	G-70	G-90	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)														

	Mubarek	Kasan	Karshi	Guzar	Dekhanabad	Sherabad	Termez	Hairatan (Border of Afghanistan)- AADT 250	Mazar-i-Sharif	Sheberghan	Andkhuoy	Meymaneh	Qaisar	Bala Murghab

	AFGHANISTAN		
AADT	1,145	3,300	
Surface Condition-Length (km)	B	F	
AH Reference	AH 76	AH 1	
Design Standard	Below III	II	
Section Length (km)	290	116	
Terrain	H	F	
No. of Lanes-Length (km)	1-290	2-116	
Surface Type-Length (km)	G-290	AC-116	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)			

	Bala Murghab	Herat	Islam Qala (Border of Iran)-AADT 422

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

Summary

Road Characteristic	Kazakhstan	Uzbekistan	Afghanistan	Total
Total Length (km)	786	1,435	1,045	3,266
Surface Condition (km-%):				
Good	312-39.7%	835-58.1%	120-11.5%	1,066-32.6%
Fair	474-60.3%	437-30.5%	335-32.1%	1,246-38.2%
Bad	0-0.0%	164-11.4%	790-75.6%	954-29.2%
No of Lanes (km-%):				
2	786-100.0%	1,316-91.7%	1,045-100.0%[a]	3,147-96.4%
4	0-0.0%	119-8.3%	0-0.0%	119-3.6%
6	0-0.0%	0-0.0%	0-0.0%	0-0.0%
Surface Type (km-%):				
AC	108-13.7%	399-63.2%	455-43.5%	962-29.5%
PM	473-60.2%	114-18.1%	0-0.0%	587-18.0%
CG or G	205-26.1%	118-18.7%	590-56.5%	1,717-52.6%

[a] 590 km one-lane road.

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 6b: EUROPE-MIDDLE EAST AND SOUTH ASIA VIA NORTH WEST KAZAKHSTAN

KAZAKHSTAN

	Iletsk (border of Russia)	Uralsk	Zhambeity	Khodba	Aktobe	Karabutak	Irgiz	Aralsk	Novokazalinsk	Tyuratam	Zhusaly	Kyzylorda	Turkestan	Torktol
AADT	991	590	1,368	1,449	1,746	632	584	542	567	833	2,785	2,475	5,259	
Surface Condition-Length (km)	G-100; F-2	G-123; F-8	G	G-12; F-93	G	G-60; F-124	F	F	G-12; F-82	G-55; F-20	G-22; F-147	G-146; F-143	F	
AH Reference	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	AH 61	
Design Standard	III	II, III	II. III	II, III	I, II, III	II, III, Below III	II, III, Below III	III	III	III	II, III	II, III	III	
Section Length (km)	102	131	226	105	212	188	204	117	94	75	169	289	64	
Terrain	F	H	H	H	H	H	F	F	F	F	F	F	F	
No. of Lanes-Length (km)	2-102	2-131	2-226	2-105	2-192; 4-20	2-188	2-204	2-117	2-94	2-75	2-169	2-289	2-64	
Surface Type-Length (km)	PM-102	AC-61; PM-70	AC-16; PM-210	AC-76; PM-29	AC-17; PM-195	AC-60; PM-124; CG-4	PM-130; CG-74	PM-117	PM-94	PM-75	AC-6; PM-163	AC-17; PM-272	PM-64	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)														

KAZAKHSTAN | **UZBEKISTAN**

	Torktol	Shymkent	Saryagash (Border of Uzbekistan)	Tashkent	Syrdaryinskaya	Djizak	Samarkand	Shahrisabz	Guzar	Dekhanabad	Sherabad	Termez	Hairatan (Border of Afghanistan)- AADT 250
AADT	9,467	7,219	7,891	23,901	12,635	12,689	9,558	4,854	4,489	4,312	4,656	487	
Surface Condition-Length (km)	G-28; F-58	G-58; F-52	G	G	G	G	G	G	F	F	G	G	
AH Reference	AH 61	AH 5	AH 5	AH 5	AH 5	AH 5	AH 62	AH 62	AH 62	AH 62	AH 62	AH 62	
Design Standard	I, II, III	I, II	I	I	I	I	I	I	II, III	II, III	I, II	II	
Section Length (km)	86	110	27	75	102	100	75	70	38	127	53	23	
Terrain	F	H	F	F	F	F	F	F	F	F	F	F	
No. of Lanes-Length (km)	2-83; 4-3	2-13; 4-97	4-27	4-75	4-102	4-100	4-75	4-70	2-38	2-127	2-38; 4-15	2-23	
Surface Type-Length (km)	AC-10; PM-76	AC-110	AC-11; CC-16	AC-33; CC-42	CC-102	AC-100	AC-75	AC-70	AC-30; PM-8	AC-103; PM-24	AC-53	AC-23	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)													

AFGHANISTAN

	Hairatan (Border of Afghanistan)- AADT 250	Mazar-i-Sharif	Sheberghan	Andkhuoy	Meymaneh	Qaisar	Bala Murghab	Herat	Islam Qala (Border of Iran)- AADT 422
AADT	2,278	3,200	1,900	700	600	550	1,145	3,300	
Surface Condition-Length (km)	G	F	F	B	B	B	B	F	
AH Reference	AH 62	AH 76	AH 76	AH 76	AH 76	AH 76	AH 76	AH 1	
Design Standard	II	II	II	Below III	Below III	Below III	Below III	II	
Section Length (km)	120	150	69	140	70	90	290	116	
Terrain	F	F	F	F	H	H	H	F	
No. of Lanes-Length (km)	2-120	2-150	2-69	1-140	1-70	1-90	1-290	2-116	
Surface Type-Length (km)	AC-120	AC-150	AC-69	G-140-	G-70	G-90	G-290	AC-116	
Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)									

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary with narrower right-of-way and design speed of 100 kph; Class II=2 lanes, AC or CC pavement and design speed of 80 kph; Class III= 2 lanes, double bituminous surface treatment (PM) and design speed of 60 kph. CG=Compacted gravel; G=Gravel; E=Earth road.

Summary

Road Characteristic	Kazakhstan	Uzbekistan	Afghanistan	Total
Total Length (km)	2,172	690	1,045	3,907
Surface Condition (km-%):				
Good	1,058-48.7%	525-76.1%	120-11.5%	1,503-38.5%
Fair	1,114-51.3%	165-23.9%	335-32.1%	1,614-41.3%
Bad	0-0.0%	0-0.0%	790-75.6%	790-20.2%
No of Lanes (km-%):				
2	2,052-94.5%	226-32.8%	1,045-100.0%[a]	3,323-85.1%
4	120-5.5%	464-67.2%	0-0.0%	584-14.9%
6	0-0.0%	0-0.0%	0-0.0%	0-0.0%
Surface Type (km-%):				
AC	373-17.2%	498-72.2%	455-43.5%	1,486-38.0%
PM	78-3.6%	32-4.6%	0-0.0%	110-2.8%
CG or G	1,721-79.2%	0-0.0%	590-56.5%	2,311-59.2%
CC	0-0.0%	160-23.2%	0-0.0%	

[a] 590 km one-lane road.

Road Corridor Characteristics and Traffic Density

CAREC CORRIDOR 6c: EUROPE-MIDDLE EAST AND SOUTH ASIA BY ROAD VIA DUSHANBE

KAZAKHSTAN

	Iletsk (border of Russia)		Uralsk		Zhambeity		Khodba		Aktobe		Karabutak		Irgiz		Aralsk		Novokazalinsk		Tyuratam		Zhusaly		Kyzylorda		Turkestan		Torktol
AADT		991		590		1,368		1,449		1,746		632		584		542		567		833		2,785		2,475		5,259	
Surface Condition-Length (km)		G-100; F-2		G-123; F-8		G		G-12; F-93		G		G-60; F-124		F		F		G-12; F-82		G-55; F-20		G-22; F-147		G-146; F-143		F	
AH Reference		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61		AH 61	
Design Standard		III		II, III		II. III		II, III		I, II, III		II, III, Below III		II, III, Below III		III		III		III		II, III		II, III		III	
Section Length (km)		102		131		226		105		212		188		204		117		94		75		169		289		64	
Terrain		F		H		H		H		H		H		F		F		F		F		F		F		F	
No. of Lanes-Length (km)		2-102		2-131		2-226		2-105		2-192; 4-20		2-188		2-204		2-117		2-94		2-75		2-169		2-289		2-64	
Surface Type-Length (km)		PM-102		AC-61; PM-70		AC-16; PM-210		AC-76; PM-29		AC-17; PM-195		AC-60; PM-124; CG-4		PM-130; CG-74		PM-117		PM-94		PM-75		AC-6; PM-163		AC-17; PM-272		PM-64	

Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)

	KAZAKHSTAN				UZBEKISTAN					TAJIKISTAN					AFGHANISTAN			
	Torktol		Shymkent	Saryagash (Border of Uzbekistan)		Tashkent	Syrdaryinskaya (Guilstan)	Jangjier (Yangier)	Khavast (Uzbekistan) and Zafatobad (Tajikistan)		Dushanbe	Kurgan - Tube	Nijni Pianj (Border of Afghanistan)		Shirkhan	Kunduz	Polekumri	Doshi
AADT		9,467	7,219		7,891	23,901	13,443	4,532		4,030	3,982	4,041		41	2,200	2,500	3,400	
Surface Condition-Length (km)		G-28; F-58	G-58; F-52		G	G	G	G		B	G	B		River	B	B	G	
AH Reference		AH 61	AH 5		AH 5	AH 5	AH 7	AH 7		AH 7	AH 7	AH 7		AH 7	AH 7	AH 7	AH 7	
Design Standard		I, II, III	I, II		I	I	I, II	III		II, III, Below III	II	II, Below III		Below III	II	II	II	
Section Length (km)		86	110		27	75	20	17		311	83	102		0.2 (river crossing)	61	108	47	
Terrain		F	H		F	F	F	F		M	F	F		River	H	H	H	
No. of Lanes-Length (km)		2-83; 4-3	2-13; 4-97		4-27	4-75	2-15; 4-5	2-7; 4-10		2-311	2-73; 4-10	2-102		-	2-61	2-108	2-47	
Surface Type-Length (km)		AC-10; PM-76	AC-110		AC-11; CC-16	AC-33; CC-42	AC-20	PM-17		AC-131; PM-123; CG-57	AC-83	AC-76; CG-26		-	AC-61	AC-108	AC-47	

Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)

	AFGHANISTAN				
	Doshi	Djbulsarcj	Kabul	Jalalabad	Torkham (border of Pakistan)-AADT 1,100
AADT	3,900	6,030	6,585	7,100	
Surface Condition-Length (km)	G	G	G-20; B-127	G	
AH Reference	AH 7	AH 7	AH 1	AH 1	
Design Standard	II	II	I, II, Below III	III	
Section Length (km)	108	64	147	77	
Terrain	M	M	M	F	
No. of Lanes-Length (km)	2-108	2-64	2-137; 4-10	2-77	
Surface Type-Length (km)	AC-108	AC-64	AC-147	AC-77	

Traffic Density (AADT) and Surface Condition (Green-Good; Yellow-Fair; Red-Bad)

Design Standard Codes and Surface Types: Primary=Access-controlled highway with 4 or more lanes divided by a median strip, design speed of 120 kph on level terrain and asphalt concrete (AC) or cement concrete (CC) pavement surface. Class I=Same as primary

Summary

Road Characteristic	Kazakhstan	Uzbekistan	Tajikistan	Afghanistan	Total
Total Length (km)	2,172	139	496	612	3,419
Surface Condition (km-%):					
Good	1,058-48.7%	139-100.0%	83-16.7%	316-51.6%	1,596-46.7%
Fair	1,114-51.3%	0-0.0%	0-0.0%	0-0.0%	1,114-32.6%
Bad	0-0.0%	0-0.0%	413-83.3%	296-48.4%	709-20.7%
No of Lanes (km-%):					
2	2,052-94.5%	22-15.8%	486-98.0%	602-98.4%	3,162-92.5%
4	120-5.5%	117-84.2%	10-2.0%	10-1.6%	257-7.5%
6	0-0.0%	0-0.0%	0-0.0%	0-0.0%	0-0.0%
Surface Type (km-%):					
AC	373-17.2%	64-46.1%	290-58.5%	612-100.0%	1,339-39.2%
PM	78-3.6%	17-12.2%	123-24.8%	0-0.0%	218-6.4%
CG or G	1,721-79.2%	0-0.0%	83-16.7%	0-0.0%	1,804-52.7%
CC	0-0.0%	58-41.7%	0-0.0%	0-0.0%	58-1.7%

Rail Corridor Characteristics and Traffic Density

CAREC-6a: EUROPE-PERSIAN GULF

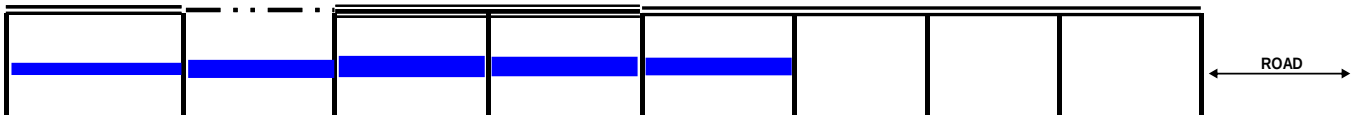
	Aksarayiskaya		Atyrau		Makat		Beineu		Karakalpakya		Nukus		Turtkul		Uchkuduk		Navoi		Bukhara		Karshi		Termez	Islam Qala
Section Length (km)		323		130		300		99		428		166		267		290		93		157		333		
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		
Terrain F-Flat, H-Hilly, M-Mount.		F		F		F		F		F		F		F		F		F		F		F		
Single / Double Track		D		D		D		D		D		D		D		D		D		D		D		
Electrified Y/N		N		N		N		N		N		N		N		N		N		N		N		
Traffic, tons		7,894,835		13,751,592		12,412,202		2,267,218																

CAREC-6b: EUROPE-PERSIAN GULF

	Iletsk		Aktobe		Kandagash		Turatam		Arys		Saryagash		Tashkent		Syrdaryinskaya		Djizak		Samarkand		Karshi		Termez	Islam Qala
Section Length (km)		195		94		713		668		128		30		89		161		113		156		333		
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		1520		
Terrain F-Flat, H-Hilly, M-Mount.		H		H		F		F		F		H		F		F		F		F		F		
Single / Double Track		D		4 lines		3 lines		3 lines		D		D		D		D		D		D		D		
Electrified Y/N		N		N		N		N		N		N		N		N		N		N		N		
Traffic, tons		8,478,593		12,584,617		14,892,760		13,623,664		12,354,567														

CAREC-6c: EUROPE-ARABIAN SEA

	Iletsk		Aktobe		Kandagash		Turatam		Arys		Saryagash		Tashkent		Syrdaryinskaya		Khavast	Torkham
Section Length (km)		195		94		713		668		128		30		89		161		
Gauge Width		1520		1520		1520		1520		1520		1520		1520		1520		
Terrain F-Flat, H-Hilly, M-Mount.		H		H		F		F		F		H		F		F		
Single / Double Track		D		4 lines		3 lines		3 lines		D		D		D		D		
Electrified Y/N		N		N		N		N		N		N		N		N		
Traffic, tons		8,478,593		12,584,617		14,892,760		13,623,664		12,354,567								



Lines in RED are electrified

Single line

Double line

Three lines

Four or more