Republic of Uzbekistan
Ministry of Transport
The Committee for Road
Uzbekistan Railways

Data Collection Survey for Transportation Sector in the Republic of Uzbekistan

Final Report

October 2025

Japan International Cooperation Agency

CTI Engineering International Co., Ltd.
ALMEC Corporation
Oriental Consultants Global Co., Ltd.

UZ
JR
25-002

Exchange Rate

JICA Rate (July 2025)

USD 1 = JPY 144.6430（≒145）

SUMMARY

1 OVERVIEW AND OBJECTIVE OF THE SURVEY

The Overview and Objective of the Survey are summarized in Table 1-1.

Table 1-1 Overview and Objective of the Survey

Items	Contents
Objective	Data collection and analysis to formulate candidate projects (Primarily Japanese ODA loan Project(s)) for future cooperation by JICA in the road and bridge, railway, and road disaster prevention sectors (hereinafter referred to as the three sectors)
Target Area	All over Uzbekistan
Related Agency	Ministry of Transport (MOT) The Committee for Road (CR) Uzbekistan Railways (UTY) Ministry of Emergency Situation (MOE) Ministry of Economy and Finance (MEF) Ministry of Investment, Industry and Trade (MIIT) Local or regional Government for survey target area
Period	December 19th, 2024 - October 31st, 2025
Deliverables	3rd February 2025：Inception Report※1 9th May 2025：Interim Report※1 1st August 2025：Draft Final Report※1 31st October 2025：Final Report (Including Pictures) ※2 ※1：Electronic Data Language：Japanese, English, Uzbek (Only Summary) ※2：Electronic Data (CD-R) Language：Japanese, English, Uzbek (Only Summary)

2 OVERVIEW IN UZBEKISTAN

2.1 Social and Economic Situation

2.1.1 Population

As of 2024, Uzbekistan's population is approximately 36.8 million. It has steadily increased over the 15-year period from 2010 to 2024, with an average annual growth rate of approximately 2.0% over the past five years. Notably, Tashkent City has experienced a particularly high growth rate of approximately 4.8%, while Tashkent Province (excluding Tashkent City), the Republic of Karakalpakstan, Bukhara Province, and others show a growth rate of less than 1.5%.

2.1.2 Economy

Uzbekistan's economy has experienced robust growth in the past decade. Real GDP has consistently grown at rates exceeding 5% annually since 2018, except for 2020, when real GDP has been growing at more than 5% y/y since 2018, except for the COVID-19 pandemic in 2020. Major industries include cotton cultivation and the extraction of natural, including natural gas and gold. In the labor market, the unemployment rate has generally remained around 10% in recent years. In addition, under the current President Mirziyoyev, economic liberalization is being promoted, and in particular, the Coronavirus

Disaster has implemented socioeconomic measures by borrowing from international institutions to achieve an early economic recovery.

2.1.3 Industry Trends

Uzbekistan's industries, measured in terms of gross value added (GVA), have been growing steadily, registering annual growth rates of nearly 20%. The highest share of gross value added in 2024 is accounted for by the service sector, which represents 51% of the total. The service sector has shown a gradual increase over time, making it a key industry. It is followed by Industry with 29%, and Trade, Construction, Transportation and Storage with a share of less than 10% each.

The share of agriculture, industry, construction, and services by area in 2024 and gross value added vary widely by area. The areas with the largest gross value added are Tashkent City, Tashkent Outside, Navoi, Samarkand, and Andijan, in that order. By industry, Samarkand has the largest gross value added in agriculture and fisheries, while the other areas do not differ much in size, with Fergana, Tashkent City Outside, Surkhandarya, Namangan, Kashkadarya, Bukhara, and Andijan all showing the same value added, Andijan shows the same level. In the industrial sector, Navoi, Tashkent city, and Tashkent are overwhelmingly larger; in construction, outside Tashkent and Tashkent city are larger; in services, Tashkent city is overwhelmingly larger, followed by Samarkand, Tashkent city, and Andijan. Samarkand, Tashkent city outskirts, and Fergana.

2.2 Natural Environment

2.2.1 Climate

Uzbekistan's climate is continental, with large seasonal and daily amplitudes of air temperature, hot and long summers, relatively wet springs, and unstable winters. The length of the day in summer is about 15 hours, and in the winter, at least nine. The coldest month is January. The temperature drops in the north to - 8 °C and below, and in the extreme south, near the town of Termez, it is above zero. The absolute minimum winter temperatures can reach -35 to -38°C. The hottest months are July and August. The average temperature on the plains and foothills is 25-30 °C, while in the south (Termez - Sherabad), it reaches 41 to 42 °C.

Uzbekistan is characterized by its predominantly arid climate, receiving most of its annual rainfall, which generally does not exceed 200-300 mm. A significant portion, about 70%, of this precipitation occurs during the winter and spring months. While snowfall can occur in the lowland areas during winter, it typically results in only a few centimeters of snow cover. In contrast, mountainous regions experience an average of around 60 cm of snow, with exceptional cases where snow cover can reach up to 2 meters.

2.2.2 Topography and Geology

Uzbekistan's topography is remarkably diverse, encompassing vast deserts, fertile valleys, and rugged mountain ranges. An overview of its key geographical features is presented below:

Deserts and Lowlands

- Kyzylkum Desert ("Red Sand") covers a significant portion of the central part.
- Ustyurt Plateau: Located in the northwest, this plateau features arid landscapes and contributes to the country's extensive lowland areas.
- Aral Sea Basin: Once a vast inland sea, the Aral Sea has dramatically shrunk due to water diversion projects.

Mountains and Highlands

- Tian Shan and Pamir-Alay Ranges: These mountain systems dominate Eastern and southeastern Uzbekistan, with elevations reaching up to 4,500 meters. These ranges contribute to the country's seismic activity.
- Gissar Range: Situated in the south, this range includes some of Uzbekistan's highest peaks, such as Mount Adelunga (4,301 meters).
- Fergana Valley: This valley is located in eastern Uzbekistan and extends into southern Kyrgyzstan and northern Tajikistan. It was formed by ancient river deposits (alluvium) and consists of deep, fertile soils ideal for agriculture. The region lies near tectonic fault lines, making it prone to earthquakes.

Geological Structure

- The geology of Uzbekistan is a complex mixture of ancient continental collision, remnants of oceanic crust, volcanic activity, and sedimentary action. It is known as a region with abundant mineral resources. The geology of Uzbekistan consists of two main structures: the Tien Shan orogenic belt and the Turan plateau.
- The Tien Shan orogenic belt includes fold structures such as Chatkal, Kram, Turkestan, and Zarafshan.

2.2.3 Natural Disaster (Earthquakes, Flooding, etc.)

The diversity of landscapes and climatic conditions the occurrence of various natural hazards . The territory of Uzbekistan is under the influence of extreme temperatures. The mountainous regions are prone to mudflows, floods, and avalanches, while the plains are prone to droughts and dust storms. Uzbekistan ranks among the top 20 countries globally in terms of vulnerability to drought and dust storms.

Natural conditions of high seismic activity also characterize Uzbekistan, and in the past, earthquakes reaching magnitudes of 6-8 have been observed. The country is subject to geological faults, and earthquakes of up to magnitude 7.5 are possible. In 1966, Tashkent was hit by a 5.2 magnitude earthquake that devastated the city. This led to a national agenda to ensure seismic safety in Uzbekistan. On September 13, 2021, the “Law on Ensuring Seismic Safety of the People and Territory of the Republic of Uzbekistan” was promulgated.

2.3 Traffic Volume

2.3.1 Road Traffic Volume

Traffic growth across Uzbekistan is unevenly distributed geographically:

- Andijan region has traditionally recorded high traffic volumes exceeding 40,000 PCU/day at some locations, functioning as a major urban and industrial hub. Meanwhile, in the Fergana region, showing nearly 30,000 PCU/day at some locations, including those near the border, traffic volumes are presumed to have increased significantly in recent years due to industrialization, the development of industrial parks, and the revitalization of cross-border trade.
- In the central region (Tashkent–Samarkand, Bukhara corridor), the border traffic volume in the Samarkand region, particularly on the access road to RO-3 (border with Tajikistan), is nearly 30,000 PCU/day, marking one of the highest levels in the country. In addition, a notable increase in seasonal passenger flow, driven by the concentration of tourism resources, and freight flow has been observed.
- Southern regions, particularly along the Termez–Afghanistan route, show strategic importance for international freight movements.
- Samarkand and Surkhandarya regions also exhibit substantial traffic levels, reflecting ongoing efforts toward economic diversification and tourism development promoted under Uzbekistan's national development strategies.

2.3.2 Passenger and Freight Transport Volumes

Road transport continues to dominate both passenger and freight movements in Uzbekistan, accounting for over 90% of domestic transport activities. Recent trends show a strong post-pandemic recovery in passenger movement and consistent freight transport growth.

Passenger volumes suffered a significant decline in 2020 due to COVID-19 restrictions but rebounded by 2022, achieving near pre-pandemic levels. Urbanization and regional connectivity initiatives have supported continued growth in intercity and suburban passenger movements.

Freight transport has shown a steadier growth trajectory, underpinned by Uzbekistan’s expanding role in Central Asian logistics and international trade. Key commodities moved by road include agricultural products, construction materials, consumer goods, and mineral resources. Freight volumes have particularly increased along strategic CAREC corridors, as Uzbekistan positions itself as a transit hub linking China, Central Asia, and Europe.[1,2].

Uzbekistan is located at the intersection of CAREC Corridors 2, 3, and 6, and in recent years, the development of international highways and railways has strengthened its role as a key hub for international logistics in Central Asia. In fact, the volume of international freight transport ranks among

[1] Annual report of Ministry of Transport of Uzbekistan for 2022
[2] https://www.uzdaily.uz/en/uzbekistans-freight-transport-volume-reaches-record-15-billion-tons-in-2024/?utm_source=chatgpt.com

the highest in the region, and its function as a transit corridor has been reinforced—particularly along strategic east-west (China–Caspian Sea) and north-south (Russia–South Asia) routes.[3]

3 DEVELOPMENT PLAN ON TRANSPORTATION SECTOR IN UZBEKISTAN AND NEIGHBORING COUNTRIES

3.1 Development Planning and Superior Planning

3.1.1 Uzbekistan 2030 Strategy (Presidential Decree UP-158)

Uzbekistan's development and strategic plans are aligned with the "Uzbekistan 2030 Strategy", and projects are subdivided on this plan.

3.1.1.1 Basic Policy (Philosophy, Values, and Concept of Strategy)

The "Uzbekistan 2030 Strategy" is a long-term national strategy approved in September 2023, which envisions the creation of a “New Uzbekistan” as the country’s national vision[4]. The five basic policies (fundamental concepts) of the strategy are as follows. A structural shift away from the centralized power of the former Soviet Union toward a market-oriented economy and civil society-oriented economy.

Table 3-1 Uzbekistan 2030 Strategy Basic Policy

Item	Contents
(1) Sustainable economic development	Entering upper middle-income countries through economic growth (aiming to double GDP and achieve per capita income of $4,000)
(2) International standardization of education, medical care, and social protection	Develop a public service system that meets the needs of the public and international standards such as the SDGs
(3) Construction of a comfortable and safe living environment	Environmental, housing, urban planning and community improvements
(4) Establish a fair and modern governance structure	People-centered government with emphasis on digital, transparency, and decentralization
(5) Firm assurance of sovereignty and security	Strengthening homeland defense, security, and diplomacy and maintain independence

Source: Uzbekistan 2030 Strategy

3.1.1.2 National Objectives for the Transportation and Transit Sector

The "Uzbekistan 2030 Strategy" sets national goals across multiple broad categories to strengthen the transportation sector in various areas of the country as a foundation for economic growth and regional

[3] ADB (2022) “Proposed Loan and Technical Assistance Grant Republic of Uzbekistan: National Road Development Project”; World Bank (2023) “Uzbekistan - Building Blocks for Integrated Transport and Logistics Development”

[4] Strategy was put for public discussion on 31.07.2023 till 09.08.2023 “Uzbekistan – 2030” strategy publicized for public discussion
Strategy was Approved by President Decree on 11th September 2023 DP-158-сон 11.09.2023. On the Strategy "Uzbekistan — 2030"

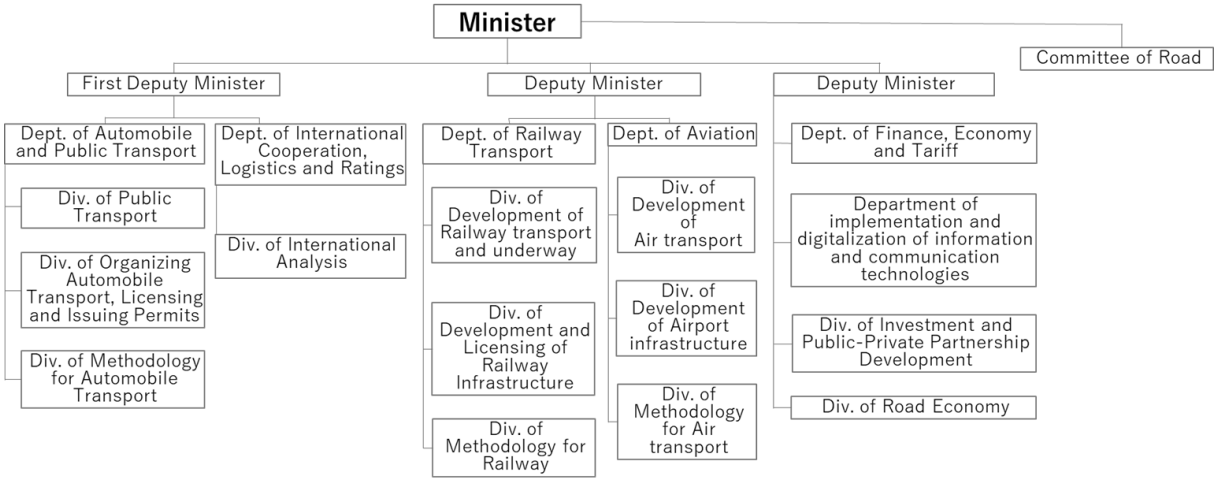
integration. In terms of extracting the parts related to the transportation and transport sector, the goals for transportation and transport include strengthening cross-border corridors, enhancing logistics, public transport functions, improving road safety, and developing human resources related to transportation and transport.

3.2 Relevant Organizations in Uzbekistan

3.2.1 Ministry of Transport (MOT)

An organizational chart of the MOT is shown in Figure 3-1.

The departments concerned with infrastructure development are divided into three lines, each line having a deputy minister in charge. In addition, CR is an agency directly subordinate to the Minister of Transport, and operates independently from the regular departments within the MOT. The MOT is responsible for transport policy planning, and establishing systems, and coordination of international cooperation and financing projects. On the other hand, CR is responsible for practical aspect of road development, including planning, design, construction, and maintenance.

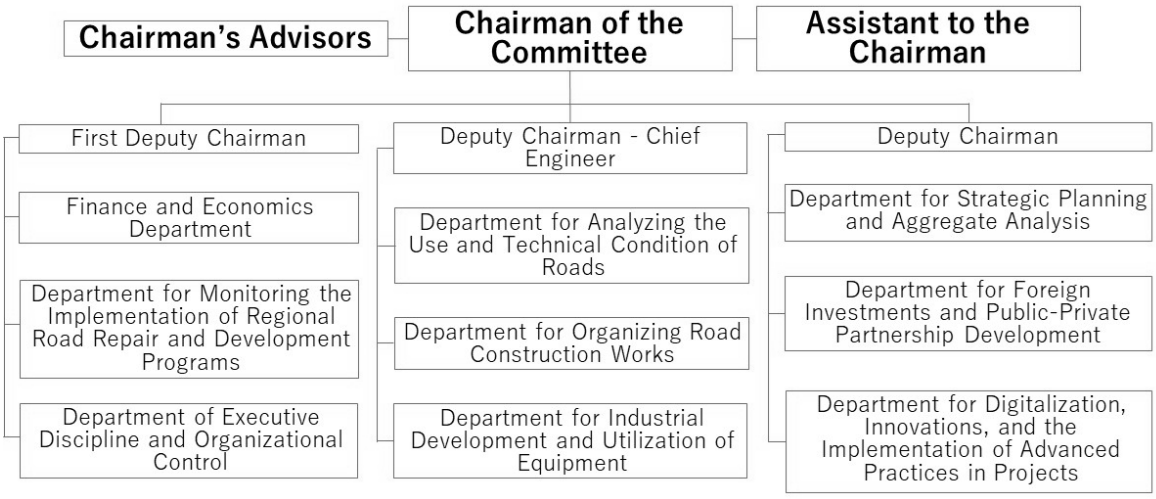


Source: Prepared by JICA Survey Team based on the MOT website

Figure 3-1 MOT Organization Chart

3.2.2 Road Committee (CR)

An organizational chart of the CR is shown in Figure 3-2. The departments concerned with infrastructure development are divided into three lines, each line having a deputy chairman in charge. The CR is an organization directly under the Minister of Transport and operates independently from the regular departments of the MOT. It is responsible for practical aspects of road development, including planning, design, construction, and maintenance. Accordingly, when the survey team requested the Uzbekistan side to provide a list of candidate projects related to roads, bridges, and disaster prevention, the Deputy Minister of Transportation instructed the CR to select candidate projects, and the CR, which is responsible for road improvement operations, provided the list of candidate projects.

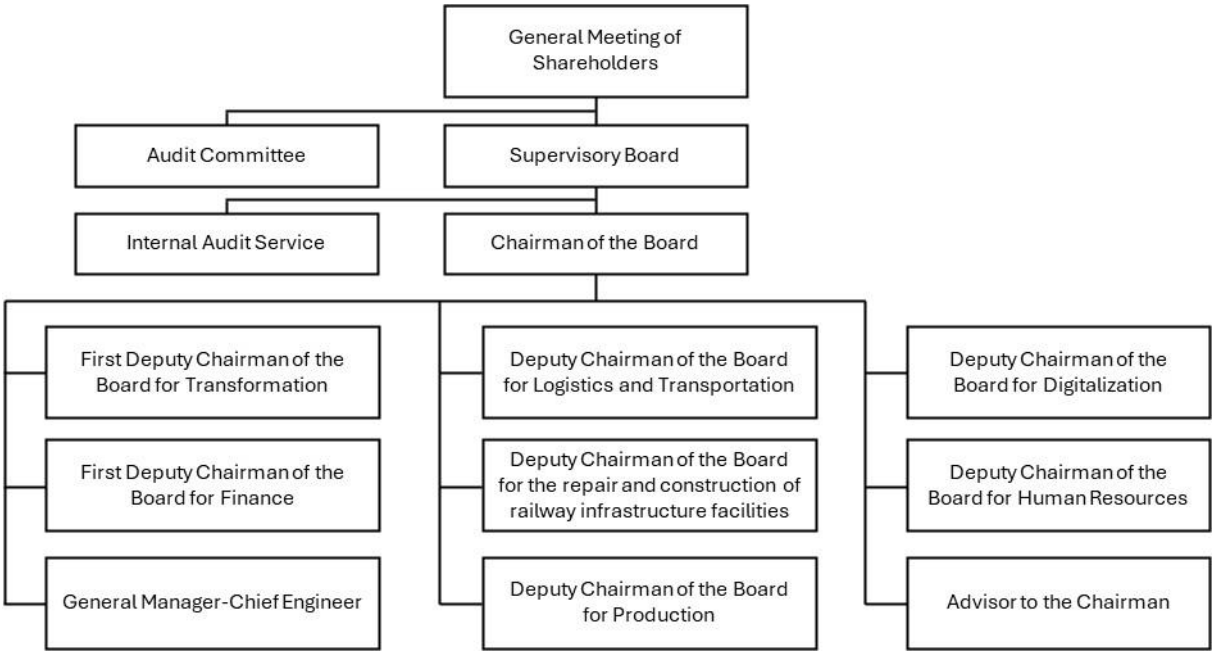


Source: Prepared by JICA Survey Team based on the CR website

Figure 3-2 CR Organization Chart

3.2.3 Uzbekistan Railways (UTY)

The organizational chart of UTY is shown in Figure 3-3. The Chairman of the board is under the General Meeting of shareholders and under Chairman of the board, there are Deputy Chairman of the board in each area. Some of those are in charge of subsidiaries, which are ranging from 100% to 43.4% owned by UTY. For the core businesses, such as passenger train operations, freight train operations, maintenance, and construction, the companies are divided by function. For the non-core business part, UTY owns a large number of assets, including a concert hall, a botanical garden, a hospital, and a railway school. UTY itself owns almost all of the non-core business assets.



Source: UTY Business Plan 2023

Figure 3-3 UTY Organization Chart

3.3 Overview of Target Subsector in Uzbekistan

3.3.1 Current Situation and Issues the Road/Bridge Sector

Uzbekistan's road network extends approximately 142,000 km and is summarized in Table 3-2. The pavement road ratio is less than 50%, including local roads, and the maintenance capacity of road facilities is still inadequate, including severely damaged pavement sections, even on international roads. The volume of transport by road has reached 90% of the total, and trade volume with Kazakhstan, Tajikistan, Kyrgyzstan, and Turkmenistan has increased since 2018.

In addition, the number of fatalities due to traffic accidents is high, and JICA is currently providing technical cooperation in traffic safety. On the other hand, a PPP project to construct two toll roads starting from Tashkent is progressing, and efforts are being made to significantly improve the logistics network centered on the capital city, Tashkent.

Except for the Amu Darya River and the Syr Darya River, Uzbekistan has few major rivers. Most of the bridges are small to medium-sized, and many urban roads have grade-separated crossings with railways. In addition, bridges constructed during the Soviet era are deteriorating rapidly, and nearly 30% of all bridges need to be repaired or replaced.

Table 3-2 Current Situation of Roads and Bridges

Sector	Category	Length/Number	Remarks
Roads /Bridge	International Road	3,992km	International Road (Good): M34, M41, A373, A376, A381 International Road (Needs improvement): M37, M39, A377, A378, A379, A380 Pavement Type: Asphalt 41%, Concrete 2%, Simple Pavement 3%, Gravel 55%
	National Road	39,370km	
	Local Road	102,614km	
	Bridge	7,112 bridges	Condition of Bridge: Good 72%, Needs repair 24%, Needs replacement 4%

Source: JICA Survey Team

3.3.2 Current Situation and Issues in the Road Disaster Sector

3.3.2.1 Rockfalls and Slope Failure

On the trunk roads that pass through mountainous areas such as the Kamchik Pass and the Takhtaqoracha Pass, rockfalls and landslides have occurred due to earthquakes and rainfall. These roads include sections close to steep slopes and fragile bedrock slopes, and road closures due to collapsed slopes and casualties due to falling rocks have occurred every year. The CR has carried out countermeasures such as removing soil and rocks after rockfalls and slope failures, cutting work to remove unstable soil and rock masses, and reinforcing slopes with gabions. Although simple measures against rockfalls and slope failures, as mentioned above, have been carried out by the CR, advanced measures against rockfalls have not been carried out.

3.3.2.2 Landslide

Landslides have been observed and confirmed in Uzbekistan in the mountainous areas located north

along the northern and northeastern border near Tashkent, and in the mountainous areas south of Samarkand (on the border with Tajikistan). The area around Kamchik Pass, located northeast of Tashkent, is particularly characterized by a complex geological structure consisting of Precambrian-Paleozoic fold belts and the development of multidirectional faults (volcanic conduits and thrust faults associated with volcanic conduits), making it prone to landslides. There are many hazardous areas of landslide along international road A-373 at the Kamchik Pass, and the National Landslide Monitoring Service regularly patrols the area and monitors landslides using the Global Positioning System (GPS). In 2014, a large landslide occurred along the A373 at 197.2km post, causing the collapse of the road and railway line. As a result of this disaster, the CR shifted the alignment of the suffered road section towards the mountainside and constructed deep foundation piles (reinforced concrete piles L = 20m) at the bottom part of the landslide. However, apart from this case, other countermeasures against landslides have not been carried out by the CR.

3.3.2.3 Debris Flow (Flash Flood)

Certain areas that are at high risk of debris flows, primarily in the mountainous regions along the border with Kyrgyz and Tajikistan. Observations of debris flow disasters from 1887 to 2022 have recorded 4,072 cases of debris flow and flood in Uzbekistan. In 1969, a landslide of approximately 1 million m^3 occurred on the international road A373, and a debris flow due to the landslide crossing the road caused the road closure for approximately 10 to 20 days.

3.3.3 Current Situation and Issues in the Railway Sector

According to the latest transport performance data from UTY, the volume of inbound and outbound cargo in 2024 amounted to approximately 74 million tons, and including transit cargo, the total reached 102 million tons. Freight rail transport volume of Japan in FY2023 was 26.52 million tons, while Freight rail transport volume of Russia in FY2023 was 123 million tons. UTY's transport scale is about three times that of Japan. Including transit cargo, UTY's transport scale is about the same as that of Russia. Passenger traffic is approximately 9.83 million, and it is 10.01 million when transit passengers are included.

Although UTY is promoting electrification, the electrification rate is still only 40%. For the train operation of UTY, diesel locomotives are still needed. However, the majority of diesel locomotives are over 30 years old. Furthermore, all of the shunting locomotives that switch coaches and wagons at stations are over 30 years old, and 73% of all locomotives are over 30 years old. In general, it is said that when locomotives exceed 30 years of age, parts supply from the manufacturer ends, and maintenance and repair become difficult. If locomotives are not renewed at this rate, train operations will be disrupted.

4 CANDIDATE PROJECTS

4.1 Road Sector

Table4-1 Candidate Projects in Road Sector

No.	Project Name	Road Category	Project Contents	Length	Traffic Volume (Veh/day)	State
RO-1	A373 "Tashkent-Osh" highway (309 - 354 km)	A: International (CAREC, TRACECA, Caspian Sea Route)	Rehabilitation	45km	25,000	Andijon
RO-2	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)	D: National	Rehabilitation + Road Expansion (Widening)	37km	19,551	Namangan
RO-3	A-377 "Samarkand Ayniy" highway (0 - 36 km)	A: International (CAREC, TRACECA)	Rehabilitation + Road Expansion (Widening)	36km	22,000-25,000	Samarkand
RO-4	M39 A "Khairaton entrance" highway (0 - 31 km)	M: International (CAREC, TRACECA)	Rehabilitation	31km	5,950	Surkhandarya
RO-5	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 40 km)	D: National	Rehabilitation	40km	5,155	Surkhandarya
RO-6	A-376 "Ko'kon-Jizzakh" highway (14 - 45 km)	A: International (CAREC, TRACECA)	Rehabilitation + Road Expansion (Widening)	31km	17,467	Fergana
RO-7	D089 "Fergana city - Kuvasai city- (6 - 25 km)	D: National	Rehabilitation + Road Expansion (Widening)	19km	32,600	Fergana
RO-8	A380 "Guzar-Bukhara-Nukus-Beineu" highway (765–780 km)	A: International (CAREC, TRACECA)	New construction	15km	7,004	Karakalpakstan
RO-9	M37 "Samarkand-Bukhara-Turkmenbashi"	M: International (CAREC, TRACECA, Caspian Sea Route)	New construction	43km	26,600	Navoiy
RO-10	M39 "Takhtaqoracha Tunnel Construction Project"	M: International (CAREC, TRACECA)	New construction	11km	11,789	Samarkand Kshkadarya

The road classifications “M” and “A,” used for international roads, are based on the abbreviations of “Mezhdunarodny” (International) and “Avtomagistral” (Highway), respectively. However, both classifications are currently defined as international roads, and there is no clear distinction between them.

Source: JICA Survey Team

4.2 Bridge Sector

Table 4-2 Proposed Candidate Projects in the Bridge Sector (Region-by-Region Summary)

No.	Region	No. of Bridges	By Road Type		
			International Road	National Road	Other Road
1	Karakalpakstan	9	1 (CAREC, TRACECA)	2	6
2	Andijan	7	1 (CAREC, TRACECA, Caspian Sea Route)	2	4

No.	Region	No. of Bridges	By Road Type		
			International Road	National Road	Other Road
3	Bukhara	8	2 (CAREC, TRACECA, Caspian Sea Route)	3	3
4	Jizakh	9	1 (CAREC, TRACECA)	3	5
5	Kashkadarya	9	1 (CAREC, TRACECA)	2	6
6	Navoiy	3	0	2	1
7	Namangan	6	0	3	3
8	Samarkand	12	1 (CAREC, TRACECA, Caspian Sea Route)	7	4
9	Surkhandarya	8	0	1	7
10	Syrdarya	8	4 (CAREC, Caspian Sea Route)	0	4
11	Tashkent	10	2 (CAREC, TRACECA, Caspian Sea Route)	5	3
12	Fergana	8	1 (CAREC, TRACECA, Caspian Sea Route)	3	4
13	Khorezm	8	1 (TRACECA)	2	5

Source: JICA Survey Team

4.3 Road Disaster

Table 4-3 Candidate Road Disaster Projects

No.	Projects	Mountain Pass	Road Class	Lenth	Traffic Volume (Vehicles/day)
RD-1	D006 (58-81km Post) "Tashkent-Chirchiq-Chimgan"	Chimgan Pass	D: National	23km	3,880
RD-2	A373 (103-177km Post) "Tashkent-Osh"	Kamchik Pass	A: International (CAREC, TRACECA, Caspian Sea Route)	74km	24,279
RD-3	M39 (1115-1145 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	Takhtaqoracha Pass	M: International (CAREC, TRACECA)	30km	11,789
RD-4	M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"	Chak-Chak Pass	M: International (CAREC, TRACECA)	10km	13,263
RD-5	D149 (21-25 km Post) "Langar-Maidanak"	Langar-Maidanak Pass	D: National	4km	4,607
RD-6	M39 (993-1013 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	Saykhan Pass	M: International (CAREC, TRACECA)	20km	40,000-45,000
RD-7	D052 (43-79 km Post) "Dashtobod-Zomin- Bakhmal-Gallaorol"	—	D: National	36km	9,000-10,000
RD-8	D050 "M39 (38-47km Post) Uchtepa Settlement – Jizzakh City	—	D: National	9km	9,000-11,000
RD-9	D075 (46-77 km Post)"Oqtosh-Yangirobot–Langar–Chuya"	Langar-Khatirchi Pass	D: National	31km	1,300-1,500

4.4 Railway Projects

Table 4-4 Candidate Railway Projects

No.	Projects	Scope	Length
RW-1	Construction of electrified railway along the “Samarkand-Urgut” route	Double-tracking	Approx. 50km
RW-2	Construction of electrified railway along the “Tashkent-Parkent” route	Double-tracking	Approx. 40km
RW-3	Electrification of Navoi-Uchkuduk railway line	Electrification of Existing Line	Approx. 300km
RW-4	Construction of second electrified railway line Tashkent-Angren	Double-tracking	Approx. 100km
RW-5	Construction of the second track of electrified high-speed railway line on Navoi-Bukhara section	Construction of New Railway	Approx. 90km

5 PREPARATION OF DRAFT LONGLIST

Table 5-1 Draft Longlist

Sector	No.	Route Name	Project Name
Road (10)	RO-1	A373	A373 "Tashkent-Osh" highway (309 - 354 km)
	RO-2	D107 (4P114)	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)
	RO-3	A-377	A-377 "Samarkand sh-Ayniy" highway (0 - 36 km)
	RO-4	M39A	M39 A "Khairaton entrance" highway (0 - 31 km)
	RO-5	D168	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 40 km)
	RO-6	A-376	A-376 "Ko'kon-Jizzakh" highway (14 - 45 km)
	RO-7	D089	D089 "Fergana city -Kuvasai city- (6 - 25 km)
	RO-8	A380	A380 "Guzar-Bukhara-Nukus-Beineu" highway(765–780 km)
	RO-9	M37	M37 "Samarkand-Bukhara-Turkmenbashi"(147-190km)
	RO-10	M39	M39 " Takhtaqoracha Tunnel Construction Project”
Bridge (47)	BR-1	A-380	Reconstruction of the bridge located at km 615.2 on the A-380 "Guzar-Bukhara-Nukus–Beyneu" Highway
	BR-2	95V119	Reconstruction of the bridge located at km 5.9 on the 95V119 "D233 Highway (61 km) – KS-1" Highway
	BR-9	D233	Reconstruction of the bridge located at km 8.8 on the D233 "Nukus City – Oqmang‘it City – Kegayli City – Chimboy City – Qozoqdaryo Settlement" Highway
	BR-10	M41	Reconstruction of the bridge at km 582 on the M41 "Bishkek – Dushanbe – Termez" Highway
	BR-11	D086	Reconstruction of the Zovur Bridge at km 41 on the D086 "Margilan City – Ulugnor District" Highway
	BR-13	D132	Reconstruction of the bridge at 14.22 km of D132 "Andijan public road" highway
	BR-17	M37	Reconstruction of the bridge at km 263.75 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway
	BR-18	M37	Reconstruction of the bridge at km 212.0 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway
	BR-19	D184	Reconstruction of the bridge on the 4.650 km section of the D184 "Karakul city - Karakul railway station - Yangibazar village - Zhigachi village" highway
	BR-23	80V051	Reconstruction of the bridge on the 3.3 km section of the highway 80V051 “80V026 highway (3 km) – D067 highway (307 km) – Shagal sand mine.”

Sector	No.	Route Name	Project Name
	BR-24	D175	Reconstruction of the bridge at km 69.3 on the D175 "D198 Highway (from km 73) – A380 Highway (km 259) – Varakhsha Settlement – Mokhonkul Area – M37 Highway (to km 331)" Highway
	BR-26	D055	Reconstruction of the bridge over a stream at km 49+800 on the D055 "M39 Highway (from km 1031) – Marjonbuloq City – Zarmitan City – Qo‘shrabot District" Highway
	BR-27	M39	Reconstruction of the bridge over the Sangzor River at km 1014+760 on the M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" Highway
	BR-31	D051	Reconstruction of the bridge over a drainage canal at km 16+800 on the D051 "Sh. Rashidov District – Uchtepa Settlement – Oqtom Settlement – Forish District" Highway
	BR-32	D047	Reconstruction of the bridge over a drainage canal at km 81+902 on the D047 "Jizzakh City – Paxtakor City – Dostlik City – Gagarin City – M39 Highway (to km 918)" Highway
	BR-35	A378	Reconstruction of the bridge over the Kashkadarya River at km 125+800 on the A378 "Samarkand-Guzar" Highway
	BR-36	A-380	Reconstruction of the bridge over a drainage canal at km 70.2 on the A-380 "Guzar-Bukhara-Nukus-Beyneu" Highway
	BR-38	D153	Reconstruction of the bridge at km 38.9 on the D153 "Karshi City – Beshkent City – Kamashi Settlement – Kasbi Settlement – Koson City" Highway
	BR-44	D067	Reconstruction of the bridge at km 197 on the D067 "Zarafshan Tract" Highway
	BR-45	D067	Reconstruction of the bridge at km 234.4 on the D067 "Zarafshan Tract" Highway
	BR-46	D129	Reconstruction of the bridge over the Karakalpak Collector at km 76.021 on the D129 "Baliqchi District – Mingbuloq District – Naiman Settlement – Chagali Settlement – A373 'B' Highway (to km 9)" Highway
	BR-49	D129	Reconstruction of the bridge over the Okhunboboyev Canal at km PK61+375 on the D129 "Baliqchi District – Mingbuloq District – Naiman Settlement – Chagali Settlement – A373 'B' Highway (to km 9)" Highway
	BR-51	V108	Reconstruction of the bridge over the Kosonsoy River at km PK14+00 on the V108 "Namangan City – Toshbuloq City – Shahand Settlement" Highway
	BR-54	D070	Reconstruction of the bridge at km 16 on the D070 "Juma City – Khonchorvoq Settlement – A378 Highway (to km 30)" Highway
	BR-55	30V068	Reconstruction of the bridge at km 4.48 on the 30V068 "M37 Highway"
	BR-57	D047	Reconstruction of the bridge at km 29 on the D047 "Zarafshan Tract" Highway, Payariq District
	BR-59	V078	Reconstruction of the bridge at km 5.6 on the V078 "Samarkand City – Bulung‘ur City – Barlos Settlement – Alamli Settlement" Highway, Jomboy District
	BR-60	M37	Reconstruction of the bridge at km 0.08 on the M37 "Samarkand - Bukhara – Turkmenbashi" Highway
	BR-61	D065	Reconstruction of the bridge at km 38.2 on the D065 "Juma City – Kattaqo‘rg‘on City" Highway, Pastdarg‘om District
	BR-62	D069	Reconstruction of the bridge at km 12.2 on the D069 "Toyloq District – Urgut City" Highway, Urgut District
	BR-63	D067	Reconstruction of the bridge at km 56 on the D067 "Zarafshan Tract" Highway, Ishtikhon District
	BR-64	D170b	Reconstruction of the bridge over the Obizarang River at km 10 on the D170b "Sariosiyo Settlement" Highway
	BR-72	20V020a	Reconstruction of the bridge at km PK0+210 on the 20V020a "A376 Highway (from km 25)" Highway
	BR-73	20V020a	Reconstruction of the bridge at km PK0+310 on the 20V020a "A376

Sector	No.	Route Name	Project Name
			Highway (from km 25)" Highway
	BR-74	20V020a	Reconstruction of the overpass bridge at km 0+525 on the 20V020a "A376 Highway (from km 25)" Highway
	BR-76	M-39	Reconstruction of the bridge at km PK881+720 on the M-39 "Almaty – Bishkek – Tashkent – Shahrisabz – Termez" Highway
	BR-80	M-39	Reconstruction of the bridge over the railway (left side) at km 865+200 on the M-39 "Almaty — Bishkek — Tashkent — Shahrisabz — Termez" Highway
	BR-81	A-373a	Repair of the bridge over the Angren River at km 11+358 on the A-373a "A-373 Highway – Ohangaron– Bo‘ka – Sardoba – M39 Highway (km 918) (from km 45) Branch" Highway
	BR-82	D005	Reconstruction of the bridge over the Bo‘zsuv at km 10+980 on the D005 "Tashkent City – Qibray City – May Settlement" Highway
	BR-85	D025a	Reconstruction of the bridge over the Jun Canal at km 2+370 on the D025a "M-39 Highway to M34 Highway (from km 823) Branch" Highway
	BR-86	D031	Repair of the bridge over the Bo‘zsuv at km 0+050 on the D031 "D001 Highway (from km 7) – Nazarbek Settlement – Harakat Settlement – Yonariq Settlement" Highway
	BR-92	D105	Reconstruction of the bridge at km 195.7 on the D105 "Fergana Ring Highway"
	BR-93	D093	Reconstruction of the bridge at km 60.3 on the D093 "Margilan City – Rishton City – Oqchi Settlement – Karimdevona Settlement – Tajikistan Border" Highway
	BR-96	40V100	Reconstruction of the overpass at km 1.9 on the 40V100 "Qo‘chqorchi-Sirlimachit-Arabmozor" Highway
	BR-99	D220	Reconstruction of the bridge at km 55.6 on the D220 "Bog‘ot Settlement - Yangiariq Settlement - Khiva City - Qo‘shko‘pir Settlement - Shovot City - Gurlan City" Highway
	BR-100	D221	Reconstruction of the bridge at km 3.9 on the D221 "Honqa City - Yangiariq Settlement - Chiqirchi Settlement - Khiva City" Highway
	BR-102	90V058	Reconstruction of the bridge at km 2.5 on the 90V058 "Pitnak City - Pitnak Settlement" Highway
Disaster Prevention (7)	RD-2	A373	A373 (103-177km Post) "Tashkent-Osh"
	RD-3	M39	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
	RD-4	M39	M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
	RD-5	D149	D149 (21-25 km Post) "Langar-Maidanak"
	RD-6	M39	M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
	RD-8	D050	D050 "M39 (38-47km Post) Uchtepa Settlement – Jizzakh City
	RD-9	D075	D075 (46-77 km Post)"Oqtosh-Yangirobot–Langar–Chuya"
Railway (5)	RW-1	—	Construction of an electrified railway along the “Samarkand-Urgut” route
	RW-2	—	Construction of an electrified railway along the “Tashkent-Parkent” route
	RW-3	—	Electrification of the Navoi-Uchkuduk railway line
	RW-4	—	Construction of second electrified railway line, Tashkent-Angren
	RW-5	—	Construction of the second track of electrified high-speed railway line on the Navoi-Bukhara section

Source: JICA Survey Team

6 PREPARATION OF DRAFT SHORTLIST

Table 6-1 Draft Shortlist

Sector	Project	Score	Project Costs (Million USD)	
			Road	
			Asphalt Pavement	Concrete Pavement
			Bridge	
			Only International and National Roads	Including Local Roads
Road (5 Projects)	RO-3: A-377 "Samarkand sh-Ayniy " highway (0-36 km)	76	60	100
	RO-1: A373 "Tashkent-Osh" highway (309-354 km)	76	125	175
	RO-10: M39 "Takhta-Karacha Tunnel Construction Project"	74	262	
	RO-7: D089 "Fergana city - Kuvasai city - border of the Kyrgyz Republic" highway (6-25 km)	69	35	55
	RO-6: A-376 "Ko'kon-Jizzakh" highway (14-45 km)	69	55	85
Bridge (7 Regions)	Syrdarya Region	73	2.1	3.5
	Jizzaf Region	71	6.1	8.3
	Casica Dahlia Region	68	1.7	4.7
	Andijan Region	66	1.4	2.9
	Fergana Region	66	1.7	3.4
	Tashkent Region	64	8.8	21.9
	Samarkand Region	64	2.8	8.6
Road Disaster (3 Projects)	RD-3: M39 (1115-1145 km Post) "Almaty-Bishkek-Tashkent- Shahrisabz – Termez "	75	9.7	
	RD-2: A373 (103-177km Post) "Tashkent-Osh"	66	40.2	
	RD-6: M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"	65	5.4	
Railway (2 Projects)	RW-4: Construction of second electrified railway line, Tashkent- Angren	71	1,239	
	RW-5: Construction of second track of electrified high-speed railway line on Navoi -Bukhara section	71	1,117	

Source: JICA Survey Team

7 SELECTION OF PRIORITY PROJECTS

7.1 Policy for Selecting Priority Projects and Results

Priority projects are selected in consultation with MOT and JICA, based on the shortlist scoring results and the project's appropriateness and feasibility as a Japanese ODA loan project.

Regarding the selection of priority projects, the policy focused on three areas:

(1) strengthening major logistics networks (Caspian Sea route and CAREC) based on the upgrading of

the transportation and logistics network and the potential of the transportation system as put forward in the "Uzbekistan Strategy 2030," (2) strengthening the Southern Corridor (Uzbekistan-Afghanistan-Pakistan), which is being promoted to eliminate the bottleneck of double landlocked countries logistics, and (3) strengthening connectivity with Kyrgyz and Tajikistan based on the progress in demarcating the borders of Kyrgyz and Tajikistan.

In the road, bridge and road disaster sector, five projects which are four road rehabilitation or widening projects (RO-1, RO-3, RO-6, RO-7) that are expected to strengthen border connections with Kyrgyz and Tajikistan and 1 new bypass construction project (RO-10) and road disaster prevention project (RD-3) that is expected to strengthen the transport capacity of the Caspian Sea route were selected as the priority projects.

In the railway sector, Project RW-5, which forms part of the central corridor of the Caspian Sea route, was considered a priority project. However, due to the large-scale organizational reform associated with the privatization of UTY, consideration of new sovereign loan projects has been halted, and it is difficult to start new projects in time. Therefore, the railway sector was excluded from the priority projects.

The priority projects are presented in Table 7-1.

Table 7-1 Priority Project List

Project No.	Projects	Length (km)	Road Class	Project Scope
RO-1	A373 "Tashkent-Osh" (309-354 km)	45.0	International Roads	Rehabilitation
RO-3	A-377 "Samarkand-Ayniy " (0-36 km)	36.0	International Roads	Rehabilitation + Road Widening
RO-6	A376 "Ko'kon-Jizzakh" (14-45 km)	31.0	International Roads	Rehabilitation + Road Widening
RO-7	D089 "Fergana-Kuvasai- Border of the Kyrgyz Republic" (6-25km)	19.0	National Roads	Rehabilitation + Road Widening
RO-10 + RD-3	M39 "Takhta-Karacha Tunnel Construction Project"	12.0	International Roads	New Tunnel Construction
	M39 "Almaty- Bishkek-Tashkent- Shahrisabz - Termez "(1115-1145 km)	30.0	International Roads	Countermeasure for Rockfall

In addition, through further discussions between MOT and JICA, the projects (RO-1, RO-3, RO-10, and RD-3) were selected as the highest priority projects for carrying out the preparatory surveys.

7.2 Other Components in Highest Priority Projects

7.2.1 Replacement of Existing Bridges

Table 7-2 Specifications of bridges to be reconstructed in the Samarkand Region

No. (Br. Code)	Road Name	Year of Construction	Daily Traffic Volume (vehicles/day)	Bridge Length (m)	Total Width (m)	Scope
No.1 (Samar-10)	4P49	1964	6,300	30	15	Reconstruction
No.2 (Samar-8)	4P238	1972	5,200	36	10	Reconstruction

No. (Br. Code)	Road Name	Year of Construction	Daily Traffic Volume (vehicles/day)	Bridge Length (m)	Total Width (m)	Scope
No.3 (Samar-7)	Motrid ko'chasi	1984	22,500	55	22	Widening
No.4 (Samar-5)	4P50	1987	10,500	82	15	Reconstruction

7.2.2 Procurement of Road Construction and Maintenance Equipment

Table 7-3 Cost of Procuring Heavy Machinery for Road Construction and Maintenance

Heavy Machinery	Quantity	Unit Price (USD)	Amount (USD)
Motor Grader (169 kW, Blade 4.0m or equivalent)	68	321,500	21,862,000
Bulldozer (152 kW, 21t or equivalent)	3	313,800	941,400
Bulldozer (208 kW, 32t or equivalent)	2	461,600	923,200
Wheel Loader (156 kW, 3.1-3.3 m³ or equivalent)	20	231,500	4,630,000
Excavator (62 kW, 1.3 m³ or equivalent)	40	145,400	5,816,000
Crawler Excavator (325 kW, 3.1 m³ or equivalent)	4	420,200	1,680,800
Wheeled Excavator (165 kW, 1.6 m³ or equivalent)	6	325,000	1,950,000
Pile Driving Machine (117 kW, 42t or equivalent)	2	720,000	1,440,000
Drilling Pile Driving Machine (86 kW, 31t or equivalent)	2	720,000	1,440,000
Total			40,683,400

Source: Prepared by JICA Study Team based on unit prices (2025) obtained from local authorized dealers.

8 DATA COLLECTION FOR THE FORMULATION OF PRIORITY PROJECTS

8.1 Overview of Priority Projects

8.1.1 RO-1: A373 "Tashkent-Osh" (309-354 km)

RO-1 is an International Road (A373) connecting Tashkent-Andijan-Kyrgyzstan border. This road is a 4-6 lane road located in the Fergana Basin in eastern Uzbekistan.

Table 8-1 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	20~27m	Based on site survey results
Number of lanes, Pavement type	4~6 lanes/Asphalt pavement	Based on site survey results
Number of Bridges/Culverts	16	Based on site survey results
Number of Major Intersections	10	Based on site survey results

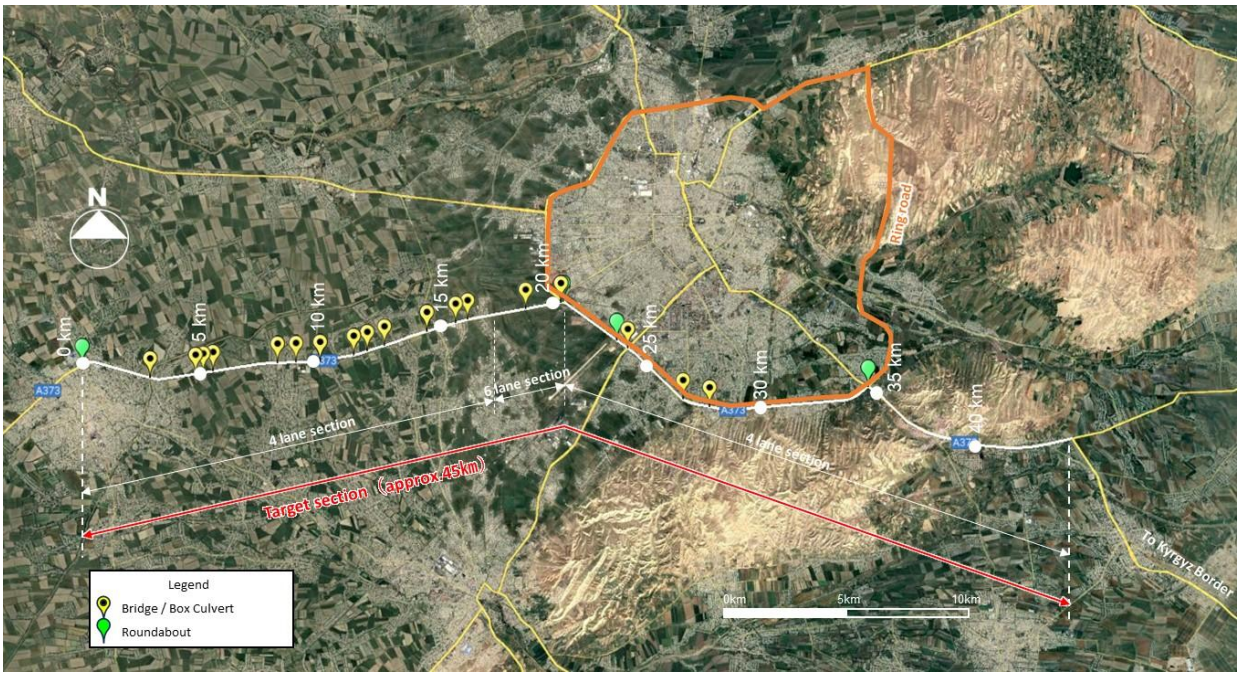


Figure 8-1 RO-1 Project Location Map

The main components of this project are as follows.

- Rehabilitation of existing roads with concrete pavement
- Enhancement of road safety facilities (installation of signal-controlled crosswalks with traffic signals, pedestrian bridges, median strip barriers, etc.)
- Renovation of existing bridges (as needed)

8.1.2 RO-3: A-377 "Samarkand-Ayniy" (0-36 km)

RO-3 is an International Road (A377) connecting Samarkand and the Tajikistan border. This road is a 2-4 4-lane road located in the southwestern part of the capital city of Tashkent.

Table 8-2 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	9~23m	Based on site survey results
Number of lanes, Pavement type	2~4 lanes/Asphalt pavement	Based on site survey results
Number of Bridges/ Culverts	11	Based on site survey results
Number of Major Intersections	3	Based on site survey results

Source: JICA Survey Team



Figure 8-2 RO-3 Project Location Map

The main components of this project are as follows.

- Rehabilitation of existing roads (4-lane section) with concrete pavement and widening and rehabilitation of existing roads (2-lane section)
- Reinforcement of road safety facilities (installation of signal-controlled crosswalks, pedestrian bridges, median barriers, etc.)
- Expansion of existing bridges (2-lane section)
- Improvement of major intersections

8.1.3 RO-6: A376 "Ko'kon-Jizzakh" (14-45 km)

RO-6 is an International Road (A376) connecting Kokand-Tajikistan border. This road is a 2-4 lane road located in the Fergana Basin in eastern Uzbekistan.

Table 8-3 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	10.6~11.6m	Based on site survey results
Number of lanes, Pavement type	2 lanes/Asphalt pavement	Based on site survey results
Number of Bridges / Culverts	7	Based on site survey results
Number of Major Intersections	4	Based on site survey results

Source: JICA Survey Team

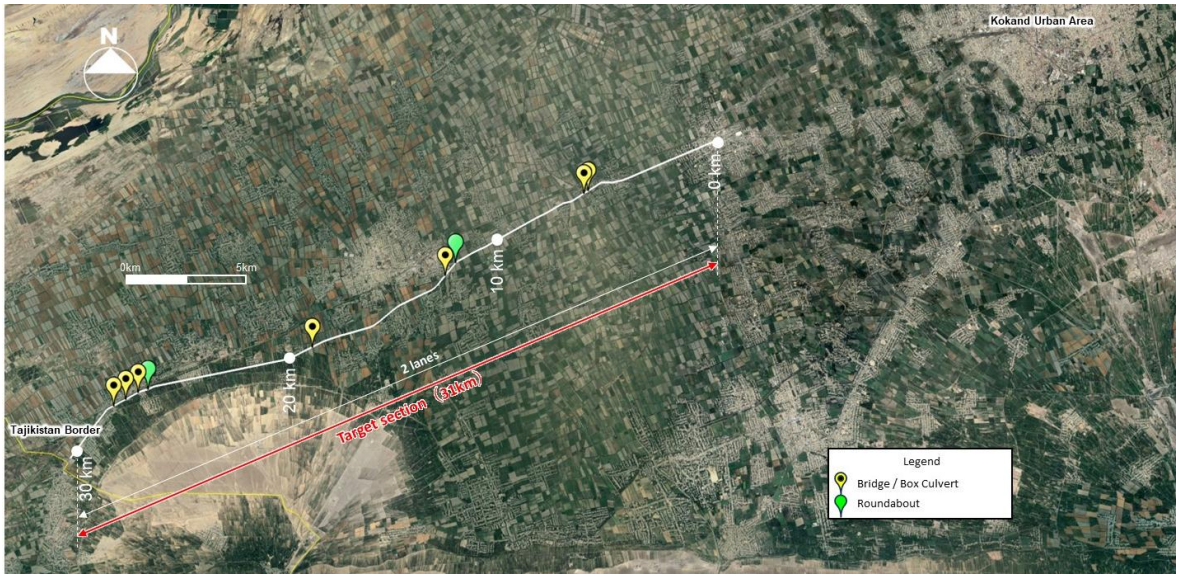


Figure 8-3 RO-6 Project Location Map

The main components of this project are as follows.

- Road widening and rehabilitation of existing roads (two-lane sections) using concrete pavement
- Strengthening of road safety facilities (installation of signal-controlled crosswalks, pedestrian bridges, median barriers, etc.)
- Expansion of existing bridges (two-lane sections)

8.1.4 RO-7: D089 "Fergana-Kuvasai- Border of the Kyrgyz Republic" (6-25km)

RO-7 is an International Road (D089) connecting the Fergana-Kyrgyz border. This road is a 2-4 lane road located in the Fergana Basin in eastern Uzbekistan.

Table 8-4 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	10~18m	Based on site survey results
Number of lanes, Pavement type	2~4 lanes/Asphalt pavement	Based on site survey results
Number of Bridges/ Culverts	5	Based on site survey results
Number of Major Intersections	4	Based on site survey results

Source: JICA Survey Team



Figure 8-4 RO-7 Project Location Map

The main components of this project are as follows.

- Rehabilitation of existing roads (4-lane section) using concrete pavement and widening and rehabilitation of existing roads (2-lane section)
- Enhancement of road safety facilities (installation of signal-controlled crosswalks, pedestrian bridges, median barriers, etc.)
- Expansion of existing bridges (2-lane section)

8.1.5 RO-10: M39 "Takhtaqoracha Tunnel Construction Project"

RO-10 is the construction of a new bypass mountain tunnel on the international highway (M39) connecting Yanakishlak, south of Samarkand, to Kishylk.

Table 8-5 Overview of The Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	9m	Based on site survey results
Number of lanes, Pavement type	2~4 lanes/Asphalt pavement	Based on site survey results

Source: JICA Survey Team

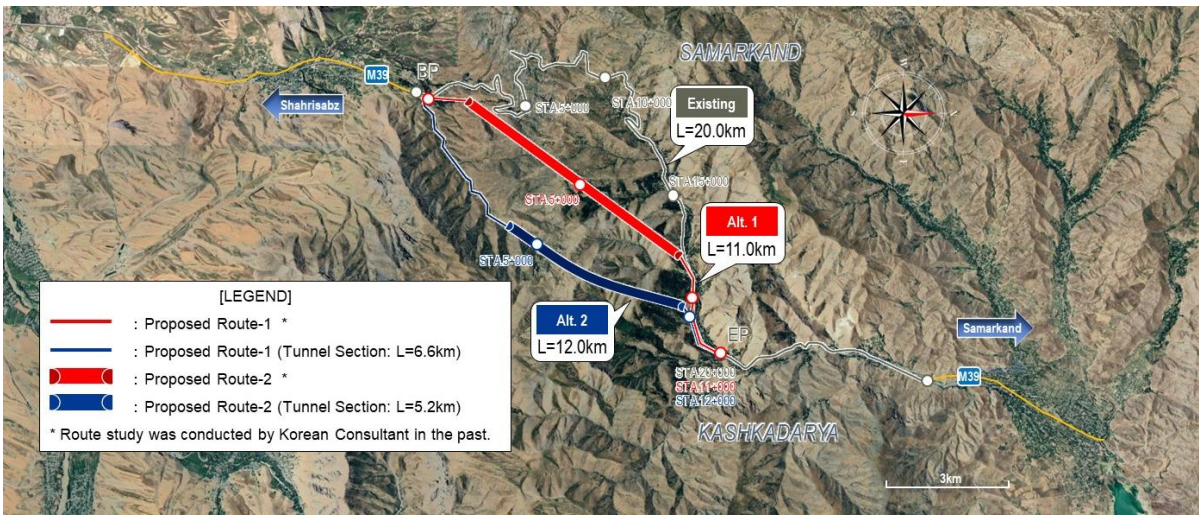


Figure 8-5 RO-10 Project Location Map

The main components of this project are as follows.

- Construction of a mountain tunnel (L=approx. 5‐7 km)
- Installation of emergency facilities for the mountain tunnel
- Construction of a new bypass road (L=approx. 5‐7 km)

8.1.6 RD-3: M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" (1,115-1,145 km)

It is an international road, M39 (two-lane road) that connects Yanakishlak, located south of Samarkand, to Kishylk and passes through a mountainous area (Takhtaqoracha Pass) with many hazardous slopes of rockfall where rockfalls have occurred every year.

There are 7 hazardous slopes of rockfall with unstable boulders at a height of about 10 to 20m along the existing road. The rock net method (pocket type or covered type) is planned as a countermeasure.



Figure 8-6 RD-3 Project Location Map

8.2 Environmental and Social Considerations

8.2.1 Environmental and Social Considerations for Priority Projects

8.2.1.1 Land Acquisition and Resettlement

The number of households affected by priority projects and the estimated size of land acquisition are as follows. Measures to minimize, reduce, and mitigate environmental and societal impacts will be considered.

Table 8-6 Categorization of Priority Projects under the JICA Guidelines for Environmental and Social Considerations

Field	Project No.	Section	Category Classification
Roads (4 projects)	RO-3 (Samarkand)	36 km	B: Approximately 65 structures will be affected. Including 37 residences, but alignment adjustments can reduce the number.
	RO-1 (Andijan, no widening)	45 km	B: No land acquisition is required, as the project only involves rehabilitation.
	RO-7 (Fergana)	19 km	B: Approximately 38 structures will be affected, but alignment adjustments can reduce the number.
	RO-6 (Kokand)	31 km	B: Approximately 48 structures will be affected, but alignment adjustments can reduce the number.
	RO-10 (Takhtakoracha Tunnel project)	–	A: located in proximity to the Amankutan National Nature Park, and land alteration may cause significant impacts on the ecosystem, including endemic and endangered species.
Bridges (3 regions)	Andijan	–	C: No houses are subject to relocation nearby; no nature reserves or protected areas are present.
	Fergana	–	
	Samarkand	–	
Road Disaster Prevention	RD-3 (Takhtaqoracha Pass – Rockfall Protection)	30 km	C: Small-scale construction with limited impacts on the environment, residents, and traffic; located a sufficient distance from protected areas.

Source: JICA Survey Team

8.2.1.2 Notable Issues Regarding Climate Change, Infectious Disease Control, Gender, Participatory Development/Consideration for Persons with Disabilities, Social Systems and Norms, Human Well-being, and Human Rights

(1) Climate Change

1) Adaptation Measures (disaster risk reduction)

- RD-3 Project: This project, aimed at rockfall protection using disaster prevention nets, is positioned as an adaptation measure to climate change.
- Other Road Projects: Even in road rehabilitation and widening projects, designs are required to consider climate risks such as rising temperatures and flooding. Reinforced shoulders, bridges, and drainage structures contribute to building a road network that is resilient to the impacts of climate change.

2) Mitigation Measures

Uzbekistan has set a target in its Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions per unit of GDP by 35% compared to 2010 levels.

- The road sector is considered one of the key areas for improving energy efficiency and reducing emissions.
- Although no specific numerical targets have been set exclusively for the road sector, enhancing and restructuring road transport efficiency is emphasized to curb GHG emissions.
- In the four targeted road projects, improvements through rehabilitation and widening works are expected to contribute to GHG emission reductions by reducing idling and improving driving efficiency.

(2) Infectious Disease Control

During the construction phase, establishing construction camps may lead to temporary land use changes and potentially cause environmental and social issues. The main concerns include:

- Environmental pollution caused by inadequate sanitation facilities and improper management of solid waste and wastewater
- The risk of communicable diseases (such as sexually transmitted infections and HIV/AIDS) being transmitted from construction workers to local residents due to a lack of health management systems

(3) Gender and Vulnerable Group Considerations

Based on the issues identified in JICA's reference material for gender mainstreaming in the transportation sector—namely, the lack of reflection of users' needs in policies and project planning, unequal compensation and impacts associated with infrastructure development, and occupational segregation as well as concentration in non-regular and low-wage employment—this part will examine gender-specific challenges and considerations particular to road projects in Uzbekistan. It will also analyze the underlying factors of these challenges and consider priority measures and monitoring indicators.

Table 8-7 Major Gender and Vulnerable Group Challenges and Proposed Measures

Gender Issue	Situation in Uzbekistan	Examples of Measures
Unequal impacts of infrastructure development	In many cases, land titles are held only by men, limiting women's opportunities for compensation and participation in decision-making.	Verification of women's ownership and usage rights, implementation of compensation support for women, and reflection in resettlement action plans.
Insufficient reflection of user needs	Lack of street lighting at night threatens women's safety during travel.	Incorporating women users' opinions in the installation of streetlights, sidewalks, and pedestrian crossings.
Occupational segregation and unequal employment opportunities	Road construction and maintenance workers are almost exclusively men. Due to cultural backgrounds and inadequate workplace environments, participation of women engineers and on-site workers is limited.	Ensuring women's input in road project planning and policy, and promoting employment opportunities and workplace environments that enable women's participation.

Source: JICA Survey Team

8.3 Implementation Schedule of Priority Projects

The project implementation schedule of five priority projects is shown in Table 8-8. The schedule shows the estimated period required from the start of each project. RO-1 is estimated to take 64 months, RO-3, RO-6, and RD-3 are estimated to take 58 months, and RO-7 is estimated to take 52 months. Additionally, the tunnel project RO-10 is estimated to take 109 months. Following the expiration of the defect period for all projects, an additional 6 months will be required for final payments and other procedures to complete the projects. Regarding RO-10, since the project length has not been finalized, the total project length, including the tunnel section of approximately 6 km and connecting roads, is estimated at approximately 11 km.

The project schedules for RO-1, RO-3, RO-10 and RD-3, which have high priority for the implementation of the Preparatory Survey, are shown in Table 8-8, and the project schedules for RO-6 and RO-7 are shown in Table 8-9.

Table 8-8 Project Implementation Schedule for RO-1, RO-3, RO-10 and RD-3

Projects	Start Month of the Project	1 Year	2 Year	3 Year	4 Year	5 Year	6 Year	7 Year	8 Year	9 Year	Total Month
L/A, Procurement (RO-1,3,10 & RD-3)	▼	Consultant Selection	Contractor Selection								
RO-1		D/D	T/A	Construction		Defect Period					64 months
RO-3		D/D	T/A	Construction		Defect Period					58 months
RD-3		D/D	T/A	Construction		Defect Period					58 months
RO-10 (D/D)		D/D									18 months
L/A, Procurement (RO-10 Construction)			▼	Contractor Selection							
RO-10 (Construction)				T/A			Construction			Defect Period	91months

Source: JICA Survey Team

Table 8-9 Project Implementation Schedule for RO-6 and RO-7

Projects	Start Month of the Project	1 Year	2 Year	3 Year	4 Year	5 Year	Total Month
L/A, Procurement (RO-6,7)	▼	Consultant Selection		Contractor Selection			
RO-6			D/D	T/A	Construction	Defect Period	58 months
RO-7			D/D	T/A	Construction	Defect Period	52 months

Source: JICA Survey Team

8.4 Japanese Technologies Potentially Applicable

Potentially applicable Japanese technologies for the priority projects selected in the Survey are shown in Table 8-10.

Table 8-10 Potentially Applicable Japanese Technologies

Subsector	Japanese Technology	Applicable Situation	Applicability in the Priority Projects
Road	Slip Form Pavers	Concrete Pavement	RO-1,3,6,7,10
	Early Strength Concrete Pavement (1 DAY PAVE)	Concrete Pavement	RO-1,3,6,7,10
Tunnel	Probing Method in Front of Tunnel Facing	Tunnel Excavation	RO-10
	On-Site Visualization of Geological Information with Projection Mapping	Tunnel Excavation	RO-10
	Jet Fan with Inverter Control for Ventilation System	Tunnel Ventilation	RO-10
Bridge	Weathering Steel	Bridge steel	RO-1,3,6,7
	Integral Abutment	Bridge Structure	RO-1,3,6,7
	Prefabricated Construction Method	Bridge construction method	RO-1,3,6,7
	Countermeasures against scouring	Scour protection measures	RO-1,3,6,7
	Terre Armée	Three-dimensional technology for narrow spaces	RO-3
Disaster prevention	Non-frame Construction Method: Slope Reinforcement	Slope Reinforcement	RO-10
	Curtain Net: Rockfall Protection	Rockfall Protection	RD-3
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	Rock Fence: Rockfall protection	Rockfall Protection	RO-10

9 DRAFT PLAN FOR PREPARATORY SURVEY FOR PRIORITY PROJECTS

9.1 Issues to Be Addressed by the Government of Uzbekistan

9.1.1 Approval Procedures for the Loan Agreement

As the first stage, the implementing agency must submit the proposed project concept paper to the Ministry of Investment, Industry and Trade by August 15, and obtain approval from the Government Commission by September 30.

In the second stage, the project appraisal document must be prepared and approved by the Government Commission by December 1, ensuring that the project is included in the list of new projects of the State Investment Program[5].

The requirements for adoption are as follows:

- The total project cost must not exceed the forecasted limit for a three-year period.
- The project must be consistent with the goals set out in national strategies.
- The project must be feasible based on economic efficiency and social significance.

Approval by the Government Commission requires prior joint agreement between the Ministry of

[5] Even if the project concept paper has not been approved during the first stage, the Presidential Decree stipulates that it may still be possible to submit a request upon consultation with the Ministry of Economy and Finance. Therefore, it is necessary to confirm with the relevant ministry in such cases.

Investment, Industry and Trade, and the Ministry of Economy and Finance. If such an agreement is not reached, the project cannot be included in the list. Therefore, during the preparatory survey stage, it is important not only for the implementing agency but also for the Ministry of Investment, Industry and Trade and the Ministry of Economy and Finance to be fully informed and involved in building consensus on the candidate project. After obtaining approval from the Government Commission, a formal request is submitted to the relevant international financial institution/foreign government financial organization by either the Ministry of Investment, Industry and Trade, or the designated counterpart ministry acting as the official governor with that institution.

9.1.2 Environmental and Social Considerations

As explained in Chapter 8 of the study on environmental and social considerations, the necessary permitting procedures to be addressed by the Government of Uzbekistan (CR) include the following.

(1) Considerations for Special Zones and Permit Procedures

Following Uzbekistan's new Environmental Law (ZRU No. 1036), where proposed road sites overlap with or are close to national parks, nature reserves, and cultural heritage sites, the CR is required to coordinate and address the following across several relevant legal systems

1) National parks and nature reserves

- Special permits must be obtained from the Ministry of Ecology, Environment, and Climate Change (MEEPCC).
- Relevant legislation: the Law on the Regulation of Nature Use, the Forest Law, the Land Law, etc.
- Excavation, logging, landscaping, etc., are likely to be prohibited in principle, and considering avoidance measures such as rerouting will be a priority.

2) Archaeological and cultural heritage

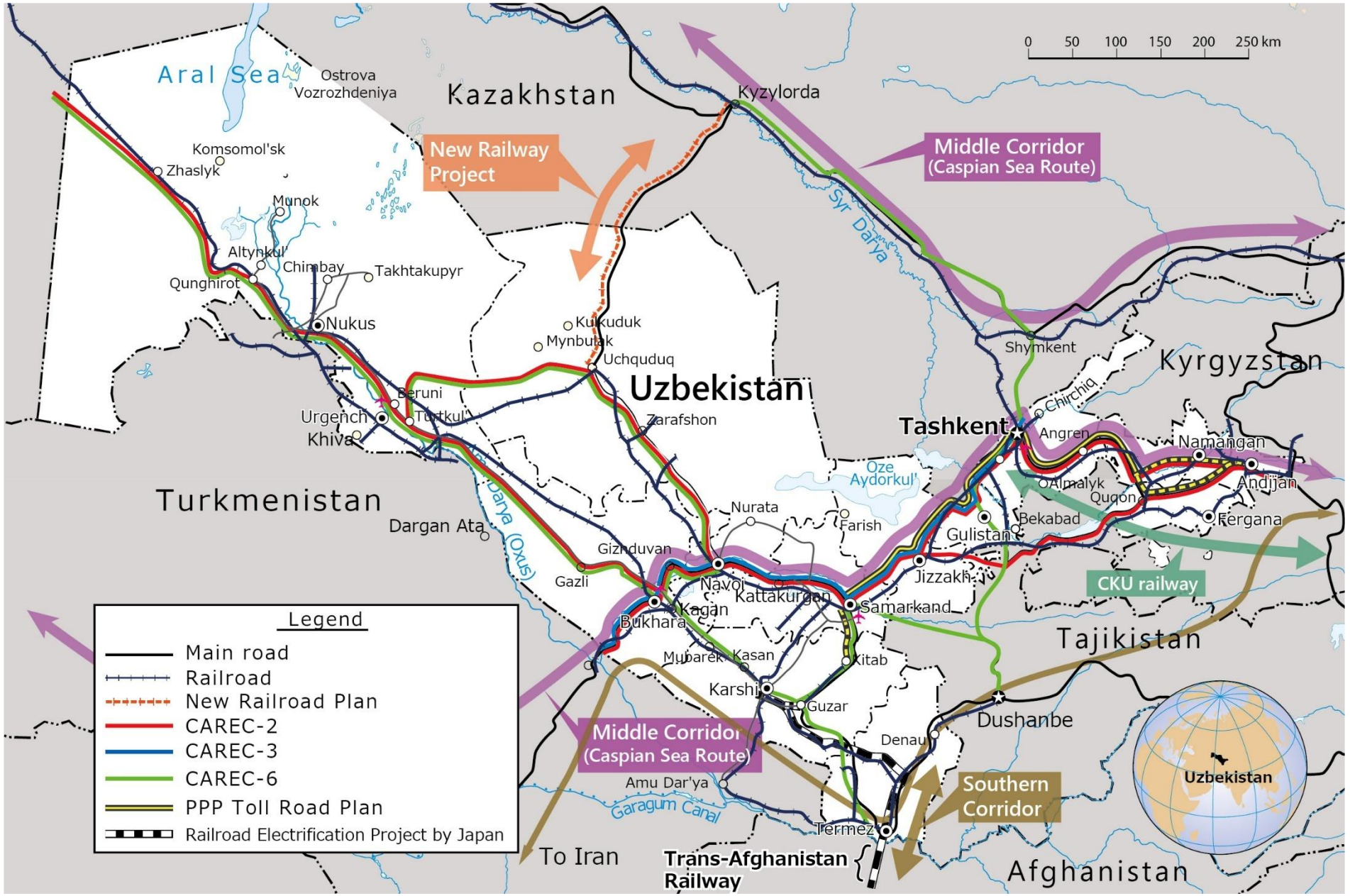
- Prior consultation with and permission from the Ministry of Culture and Tourism (MOC) is required.
- If there is a risk of damage to archaeological remains due to construction, archaeological screening surveys may be required.

9.2 Lessons Learned from Past and Ongoing Comparable Projects

- In July 2016, a terrorist attack on Dhaka by an Islamic extremist group occurred, and Japanese experts who were working on the "Preparatory Study on the Dhaka Mass Rapid Transit Development Project (TOD) in Bangladesh" were victims. This incident occurred just before the end of Ramadan in Bangladesh. The threat of terrorism tends to increase during Ramadan, and religious feelings are said to be particularly high during the last week of Ramadan, so it is necessary to be vigilant against terrorist attacks. In principle, site survey/activities in Uzbekistan during Ramadan shall be avoided for JICA projects. For site survey/activities during the general season,

sufficient safety measures shall be taken, such as prior confirmation of the security situation in Uzbekistan through relevant organizations, thorough registration of Tokokan, and establishment of an emergency contact system. In addition, the priority projects selected in the Survey include border roads with Tajikistan and Kyrgyz, and it is fully understood that they are susceptible to the effects of a sudden deterioration of security and the strengthening of border security due to the security situation, and prior coordination with the JICA office will be carried out when traveling.

- In the past Japanese ODA Loan Project in Uzbekistan, the "Karshi-Termez Railway Electrification Project," there was an incident of illegal payments to officials related to UTY. In light of this, it is necessary to consider in advance the measures to prevent corruption that should be taken in the implementation stage, referring to the "Anti-Corruption Guidance." Specifically, this includes the creation and operation of a well-balanced anti-bribery system using a "risk-based approach" and cooperation with the Division of Fight Against Corruption established in the MOT.
- In Uzbekistan, presidential decrees on development policies are frequently issued in a top-down manner, and implementing agencies and donors formulate projects based on the intentions of the president or the management level of the ministries. This top-down system is the same for each ministry and agency. In this survey, the candidate projects and the priority projects were selected based on discussions with the management level (Deputy Minister of MOT and the Deputy Chairman of CR). To proceed smoothly, it is important to thoroughly share information and discuss the management levels in the preparatory study stage.
- In Uzbekistan, there are challenges related to the quality control of bridges. Initial defects often arise due to deficiencies during the design and construction stages, making it essential to ensure construction quality. Specifically, under International Competitive Bidding (ICB), not only domestic but also foreign contractors are invited to participate widely, allowing for the selection of the most suitable contractor. Alternatively, when Local Competitive Bidding (LCB) is applied, an international consultant is employed to oversee design and construction supervision.



Map of the Uzbekistan Economic Corridor



Map of the Uzbekistan Road Network



Map of the Uzbekistan Railway Network

DATA COLLECTION SURVEY FOR TRANSPORTATION SECTOR IN REPUBLIC OF UZBEKISTAN

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Map of the Uzbekistan Economic Corridor/ Map of the Uzbekistan Road Network/ Map of the Uzbekistan Railway Network

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Abbreviations

Abbreviations	English
ADB	Asian Development Bank
AIDS	Acquired Immunodeficiency Syndrome
AIIB	Asian Infrastructure Investment Bank
B/C	Benefit-Cost Ratio
BO Road	Bishkek–Osh Road
BTK Railway	Baku–Tbilisi–Kars Railway
CAREC	Central Asia Regional Economic Cooperation
CARs	Central Asia Regional Links Program
CBR	California Bearing Ratio
CIS	Commonwealth of Independent States
CKU Railway	China–Kyrgyzstan–Uzbekistan Railway
CR	Committee for Road
CSCEC	China State Construction Engineering Corporation
E/N	Exchange of Notes
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
EIRR	Economic Internal Rate of Return
EU	European Union
F/S	Feasibility Study
FDI	Foreign Direct Investment
FEZ	Free Economic Zone
FY	Fiscal Year
GBAO	Gorno-Badakhshan Autonomous Province
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GIS	Geographic Information System
GOST	-
GPS	Global Positioning System, Global Positioning Satellite
HH Rail	Heavy Haul Rail
HIV	Human Immunodeficiency Virus
IFRS	International Financial Reporting Standards
IJTSRD	International Journal of Trend in Scientific Research and Development
ITS	Intelligent Transport Systems
IMF	International Monetary Fund
IRI	International Roughness Index
IsDB	Islamic Development Bank

Abbreviations	English
IUCN	International Union for Conservation of Nature and Natural Resources
JETRO	Japan External Trade Organization
JICA	Japan International Cooperation Agency
JIS	Japanese Industrial Standards
JPY	Japanese Yen
JSC	Joint Stock Company
KFAED	Kuwait Fund for Arab Economic Development
KfW	KfW Development Bank
KPI	Key Performance Indicator
KTX	Korea Train Express
MEEPCC	Ministry of Ecology, Environmental Protection and Climate Change
MEF	Ministry of Economy and Finance
MIIT	Ministry of Investment, Industry and Trade
MOC	Ministry of Culture and Tourism of the Republic of Uzbekistan
MOE	Ministry of Emergency Situation
MOT	Ministry of Transport
NDC	Nationally Determined Contribution
NMMC	Navoi Mining and Metallurgy Combinat
NOx	Nitrogen Oxides
NPV	Net Present Value
O&M	Operation and Maintenance
OBI	Osh–Batken–Isfana Road
ODA	Official Development Assistance
OEC	The Observatory of Economic Complexity
OPEC	Organization of Petroleum Exporting Countries
PPP	Public Private Partnership
RAMS	Road Asset Management System
SCO	Shanghai Cooperation Organization
SDGs	Sustainable Development Goals
SE	State Enterprise
SEA	Strategic Environmental Assessment
SIA	Social Impact Assessment
SMS	State Monitoring Service for Hazardous Geological Process
TRACECA	Transport Corridor Europe-Caucasus-Asia
UE	Unitary Enterprise
UFFM	Uzbekistan Freight Flow Model
USD	United States Dollar

Abbreviations	English
UTY	Uzbekistan Railways
UZDST	Standards of Uzbekistan
UZS	Uzbekistani Soms
VCR	Volume Capacity Ratio
VOT	Value of Time
WB	World Bank
WIM	Weigh In Motion

Photo List (1/3)

Photo-1: Kick-off Meeting with Committee of Road (CR)	Photo-2: Kick-off Meeting with Ministry of Transport (MOT)
	
(Date: February 14th, 2025)	(Date: February 18th, 2025)
Photo-3: Kick-off Meeting with Uzbekistan Railways (UTY)	**Photo-4: 1st High-level Meeting**
	
(Date: February 20th, 2025)	(Date: February 22nd, 2025)
Photo-5: Road Condition (RO-3)	**Photo-6: Road Condition (RO-5)**
	
(Date: April 6th, 2025)	(Date: April 24th, 2025)

Photo List (2/3)

Photo-7: Erosion of Substructure	Photo-8: Hazardous Slope of Rockfall (RD-3)
	
(Date: April 7th, 2025)	(Date: April 6th, 2025)
Photo-9: Hazardous Slope of Rockfall (RD-8)	**Photo-10: Existing single-track electrified section (RW-4)**
	
(Date: April 7th, 2025)	(Date: April 6th, 2025)
Photo-11: Existing single-track electrified section (RW-4)	**Photo-12: OD Interview Survey (Andijan)**
	
(Date: April 18th, 2025)	(Date: June 19th, 2025)

Photo List (3/3)

Photo-13: OD Interview Survey (Samarkand)	Photo-14: Machinery owned by CR Andijan Office
	
(Date: June 13th, 2025)	(Date: June 19th, 2025)
Photo-15: Machinery owned by CR Samarkand Office	**Photo-16: Overloading Investigation by CR**
	
(Date: June 26th, 2025)	(Date: June 28th, 2025)

1 INTRODUCTION

1.1 Background of the Survey

The Republic of Uzbekistan (hereinafter referred to as "Uzbekistan") has maintained a real GDP growth rate exceeding 5% since 2021, and it is expected to continue growing at the same level through 2025. Uzbekistan has established the "Uzbekistan 2030 Strategy" as its national development strategy, prioritizing the "improvement of public welfare through sustainable economic growth" and working to improve the environment in the transportation sector to achieve this goal. Furthermore, Uzbekistan's position within the international logistics network is undergoing a significant transformation. In recent years, there has been a growing movement to develop a Caspian Sea route (Central Corridor) that does not pass through Russia. This initiative seeks to overcome the constraints of Uzbekistan's double landlocked geography. and make Uzbekistan a hub for land-based logistics.

The emerging trend of international logistics in neighboring countries creates an opportunity to develop the feeder logistics network, which connects with the new international logistics network. Such developments have the potential to stimulate logistics activities in rural regions that have not yet fully benefited from the economic growth, and it could help to raise the level of economic growth in the entire country.

JICA and the Japanese government have supported the transportation sector in Uzbekistan by contributing to the development of railway infrastructure through the "Karshi-Termez Railway Electrification Project" (approved in FY2012) and airport infrastructure through the "Modernization of Three Regional Airports Project" (approved in FY1996). In recent years, JICA and the Japanese government have contributed to improving road traffic safety in Uzbekistan through the "Road Safety Promotion Advisor" (dispatched in FY2023), and by providing road maintenance equipment through the Grant Aid "Economic and Social Development Program" (concluded in FY2018 through the Exchange of Notes (E/N)). The project has contributed to the improvement of road infrastructure. In the future, it is necessary to confirm the direction of support for the improvement of transport and transportation infrastructure, including roads and bridges, railway, and road disaster prevention, to address the growing transportation demand associated with the economic growth and to strengthen the connectivity with neighboring countries.

1.2 Overview and Objective of the Survey

The Overview and Objective of the Survey are summarized in Table 1-1.

Table 1-1 Overview and Objective of the Survey

Items	Contents
Objective	Data collection and analysis to formulate candidate projects (Primarily Japanese ODA loan Project(s)) for future cooperation by JICA in the road and bridge, railway, and road disaster prevention sectors (hereinafter referred to as the three sectors)
Target Area	All over Uzbekistan
Related Agency	Ministry of Transport (MOT) The Committee for Road (CR) Uzbekistan Railways (UTY) Ministry of Emergency Situation (MOE) Ministry of Economy and Finance (MEF) Ministry of Investment, Industry and Trade (MIIT) Local or regional Government for survey target area
Period	December 19th, 2024 - October 31st, 2025
Deliverables	3rd February 2025：Inception Report※1 9th May 2025：Interim Report※1 1st August 2025：Draft Final Report※1 31st October 2025：Final Report (Including Pictures) ※2 ※1：Electronic Data Language：Japanese, English, Uzbek (Only Summary) ※2：Electronic Data (CD-R) Language：Japanese, English, Uzbek (Only Summary)

1.3 Survey Team and Schedule

1.3.1 Survey Team

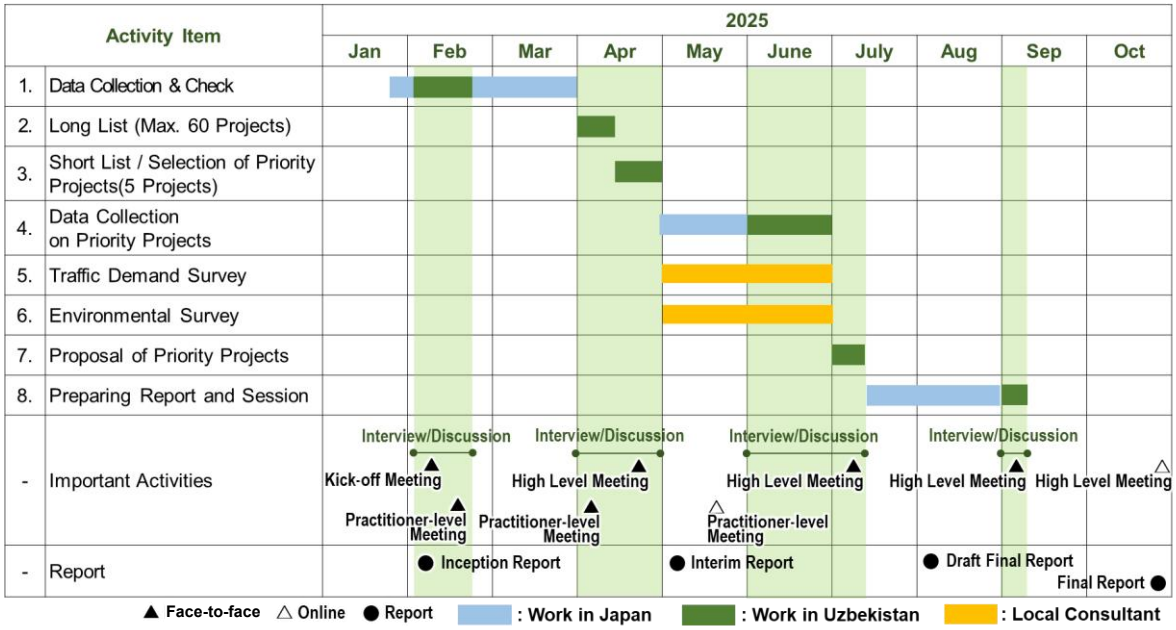
The members of the survey team are listed in Table 1-2.

Table 1-2 Survey Team

No.	Name	Position
1	Akio OKAZAKI	Team Leader / Road and Bridge Planning
2	Kentaro SAWADA	Deputy Team Leader / Road Disaster Prevention Planning
3	Koji NISHIMURA	Railway System Planning
4	Haruka MAEOKA	Railway Facilities Planning
5	Suguru IWAMA	Road Planning
6	Masaki OCHI	Bridge Planning
7	Takanori ODA	Macroeconomic Indicator / Transportation Planning / Economic (Financial) Analysis
8	Sadayuki YAGI	Logistics survey / Traffic Volume Survey / Traffic Demand Forecast
9	Nobuko SHIMOMURA	Environmental and Social Considerations / Gender
10	Masako YAGI	GIS Specialist

1.3.2 Survey Schedule

The survey schedule is shown in Figure 1-1.



Source: JICA Survey Team

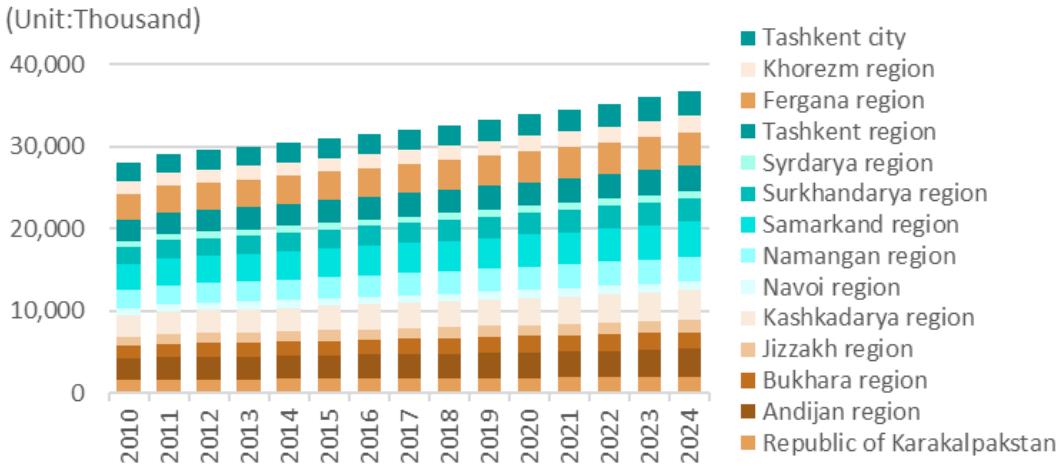
Figure 1-1 Survey Schedule

2 OVERVIEW IN UZBEKISTAN

2.1 Social and Economic Situation

2.1.1 Population

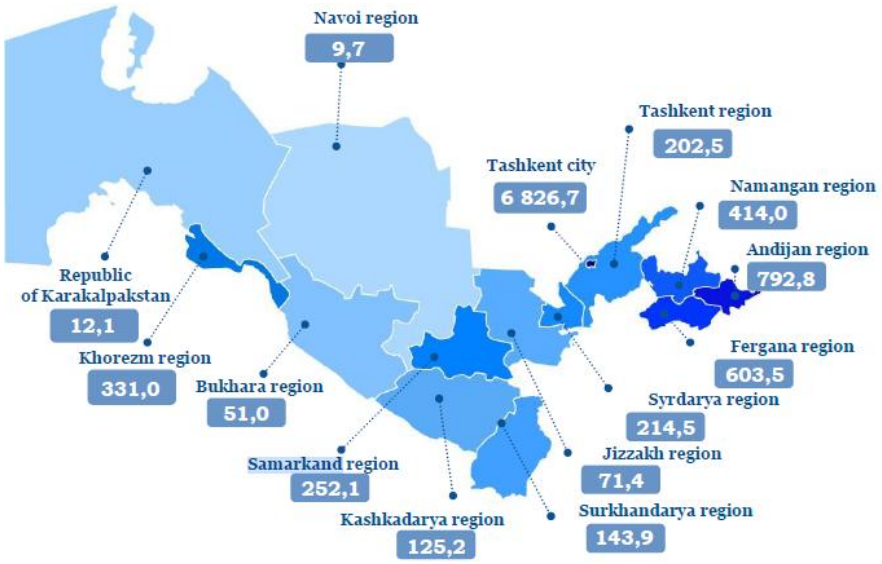
As of 2024, Uzbekistan's population is approximately 36.8 million. It has steadily increased over the 15-year period from 2010 to 2024, with an average annual growth rate of approximately 2.0% over the past five years. notably, Tashkent City has experienced a particularly high growth rate of approximately 4.8%, while Tashkent Province (excluding Tashkent City), the Republic of Karakalpakstan, Bukhara Province, and others show a growth rate of less than 1.5%.



Source: IMF

Figure 2-1 Population Trends in Each State (Region) (2010-2024)

Uzbekistan's administrative divisions are divided into Tashkent City, the central city, and 13 Regions.



Source: Uzbekistan statistics agency under the President of the Republic of Uzbekistan (https://stat.uz/img/demografiya-press-reliz-22_04_2024-eng.pdf)

Figure 2-2 Population Density in Uzbekistan (As of April 2024)

2.1.2 Economy

Uzbekistan's economy has experienced robust growth in the past decade. Real GDP has consistently grown at rates exceeding 5% annually since 2018, except for 2020, when real GDP has been growing at more than 5% y/y since 2018, except for the COVID-19 pandemic in 2020. Major industries include cotton cultivation and the extraction of natural, including natural gas and gold. In the labor market, the unemployment rate has generally remained around 10% in recent years. In addition, under the current President Mirziyoyev, economic liberalization is being promoted, and in particular, the Coronavirus Disaster has implemented socioeconomic measures by borrowing from international institutions to achieve an early economic recovery.

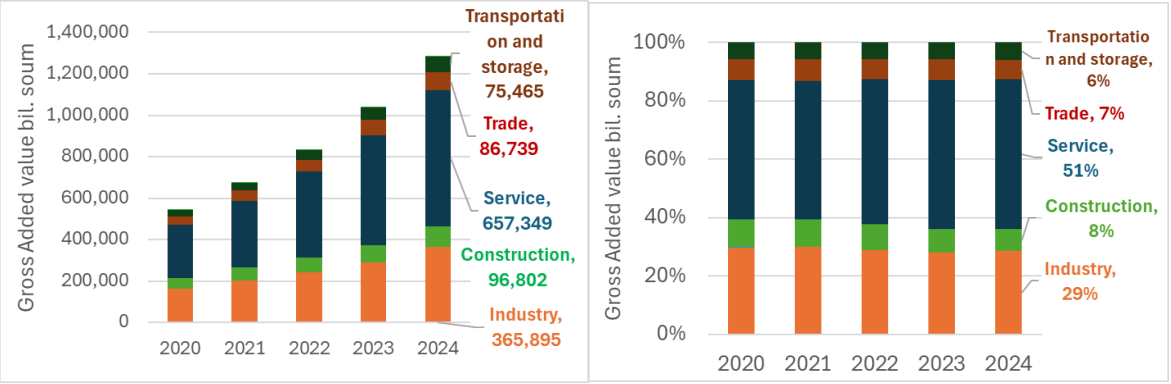
Table 2-1 Macroeconomic Indicators

(Data) Item	2016	2017	2018	2019	2020	2021	2022	2023	2024
Real GDP (Billion UZS)	558,982	583,551	615,991	657,755	668,038	721,713	765,025	813,156	858,790
Real GDP Growth Rate	-	4.4%	5.6%	6.8%	1.6%	8.0%	6.0%	6.3%	5.6%
Nominal GDP (Billion USD)	85.7	69.7	58.7	67.3	66.4	77.3	90.1	101.6	112.7
Nominal GDP per Capita (USD)	2,713	2,170	1,797	2,024	1,960	2,238	2,555	2,820	3,051
Consumer Price Inflation (YoY %)	8.1%	13.9%	17.5%	14.5%	12.9%	10.8%	11.4%	10.0%	-
Average Wage (UZS)	-	1,251,538	1,542,598	1,946,778	2,227,141	2,662,003	3,204,301	3,799,614	-
Unemployment Rate (%)	5.2%	5.8%	9.3%	9.0%	10.5%	9.6%	8.9%	6.8%	6.3%

Source: Uzbekistan statistics agency under the President of the Republic of Uzbekistan

2.1.3 Industry Trends

Figure 2-3 Below shows economic activity expressed in terms of gross value added. Uzbekistan's industries, measured in terms of gross value added (GVA), have been growing steadily, registering annual growth rates of nearly 20%. The highest share of gross value added in 2024 is accounted for by the service sector, which represents 51% of the total. The service sector has shown a gradual increase over time, making it a key industry. It is followed by Industry with 29%, and Trade, Construction, Transportation and Storage with a share of less than 10% each.



Source: Demographic situation of the Republic of Uzbekistan, Uzbekistan statistics agency under the President of the Republic of Uzbekistan

Figure 2-3 Gross Value Added by Industry

The following chart in Figure 2-4 shows the share of agriculture, industry, construction, and services by area in 2024. The shares and gross value added vary widely by area. The areas with the largest gross value added are Tashkent City, Tashkent Outside, Navoi, Samarkand, and Andijan, in that order. By industry, Samarkand has the largest gross value added in agriculture and fisheries, while the other areas do not differ much in size, with Fergana, Tashkent City Outside, Surkhandarya, Namangan, Kashkadarya, Bukhara, and Andijan all showing the same value added, Andijan shows the same level. In the industrial sector, Navoi, Tashkent city, and Tashkent are overwhelmingly larger; in construction, outside Tashkent and Tashkent city are larger; in services, Tashkent city is overwhelmingly larger, followed by Samarkand, Tashkent city, and Andijan. Samarkand, Tashkent city outskirts, and Fergana.



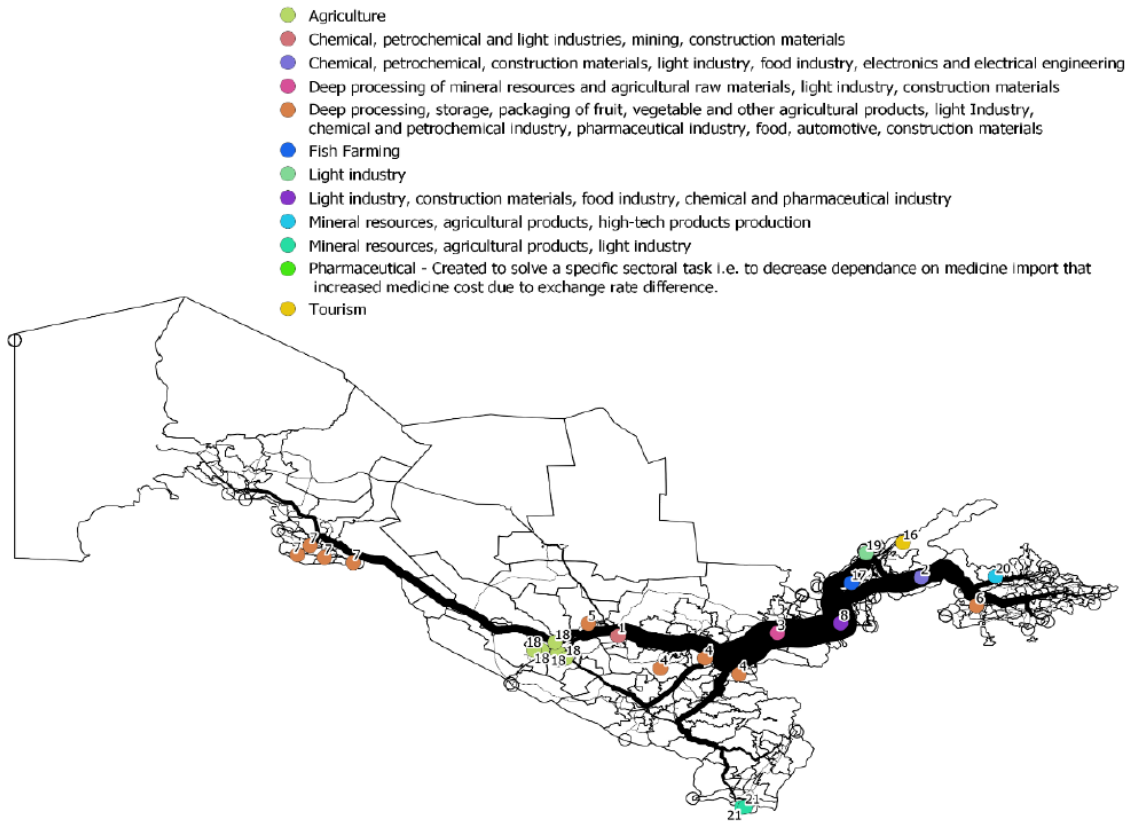
Source: Socio-economic situation of the Republic of Uzbekistan

Figure 2-4 Gross Value Added by Region (bil. Som/year)

Figure 2-5 shows World Bank's logistics forecast with the location of special economic zones (SEZs). In Fergana, the focus is on heavy industry, fruit, agriculture, and light industry. In Tashkent, the focus is on the light industry and tourism. In Samarkand, the focus is a mix of heavy and light industry, agricultural product packaging, food production, automobile manufacturing, and construction materials. In Navoi, the focus is on agriculture, In Urgench, the focus is on chemicals, light industry, mining, and construction materials. In Andijon, the focus is on the textile industry and other major industries including machinery and food processing. It has a diverse economic base with both industrial and

agricultural industries. These regions form the core logistics corridor, determined by the types of industries they support and their connectivity to transportation networks. Andijan has a diverse economic base characterized by a symbiotic relationship between industry and agriculture, with a thriving textile industry, and machinery and food processing as its main industries[1].

In Uzbekistan, the core industries depend on each city, with high-value-added industries concentrated in Andijan-Tashkent-Samarkand-Navoi. There is strong demand for logistics services from these cities to destinations outside Uzbekistan, as well as the main roads connecting them.



Source: World Bank, based on Uzbekistan Freight Flow Model (UFFM)[2]

Figure 2-5 Location of Special Economic Zones and Logistics Volume According to the World Bank

The outlook for logistics-related industries is summarized in the table below. Although some sectors are expected to decline, the overall trend has been upward, supported by past growth patterns and the government's infrastructure development efforts. Steady growth is anticipated to continue in the future.

[1]https://jets.innovascience.uz/index.php/jets/article/view/157#:~:text=Abstract,region's%20desire%20for%20industrial%20development.

[2] Informing macrologistics connectivity in emerging economies through a triangulated research approach: the case of Uzbekistan

Table 2-2 Outlook for Industry

Industry	Outlook
Tourism	Uzbekistan's tourism sector has grown steadily since 2019, with an average annual growth rate of 5.5%. Revenue is projected to reach approximately USD 4.76 billion by 2028, with an expected annual growth of 4.6% over the next five years. This reflects increasing tourist interest and investment in travel infrastructure, which is expected to stimulate logistics activities associated with tourism[3].
Agricultural Exports	Uzbekistan's cotton production for 2023/24 is estimated at 621,000 tons. Consumption is expected to decline to 599,000 tons due to reduced demand from major importers like Turkey and Russia. While global demand for ready-made garments is weakening, domestic demand is expected to rise[4].
Textile Products	Uzbekistan's cotton production for 2023/24 is estimated at 621,000 tons. However, cotton consumption for the same period is forecast to decline to 599,000 tons due to reduced demand for cotton yarn and fabrics in major importing countries such as Turkey and Russia[5]. While global demand for ready-made garments and apparel is on a downward trend, domestic demand in Uzbekistan is expected to increase.
Mineral Industry	The government is prioritizing enhanced processing capacity for minerals and rare earths, with a USD 2.6 billion investment announced in March 2025 to increase value-added output. This project is expected to triple or quadruple export values compared to raw exports, leading to increased domestic and international logistics demand[6].

Source: JICA survey team based on footnote sources.

The figure below presents import and export trends by country and product category. For imports, the main partners are Russia, China, Kazakhstan, other countries, South Korea, and Turkey. Key import items include processing machinery, fuels, services, electronics, and iron. For exports, the leading destinations are other countries, followed by Russia, China, Kazakhstan, and Turkey. Major export products include precious metals, industrial metals, rare earths, services, cotton, mineral fuels, and copper.

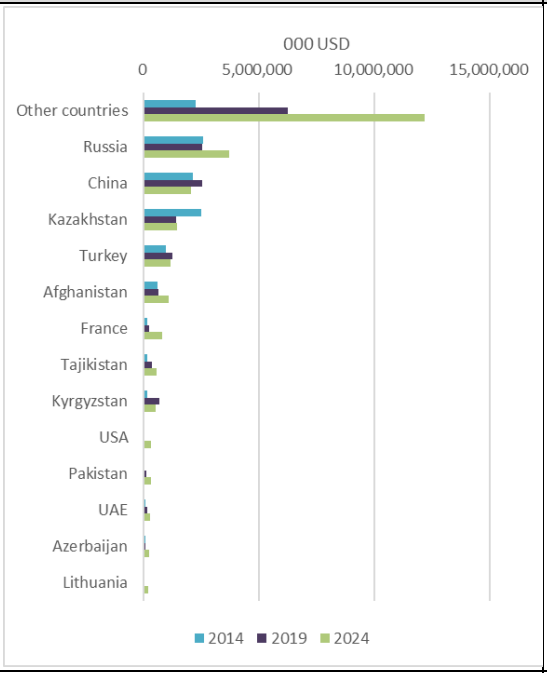
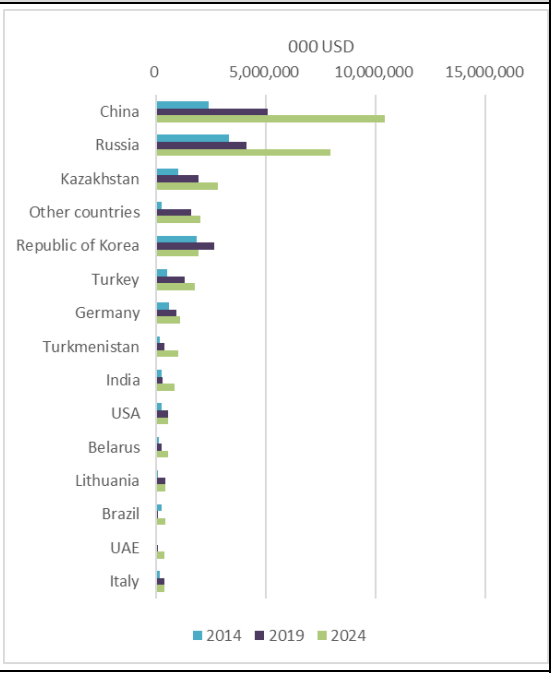
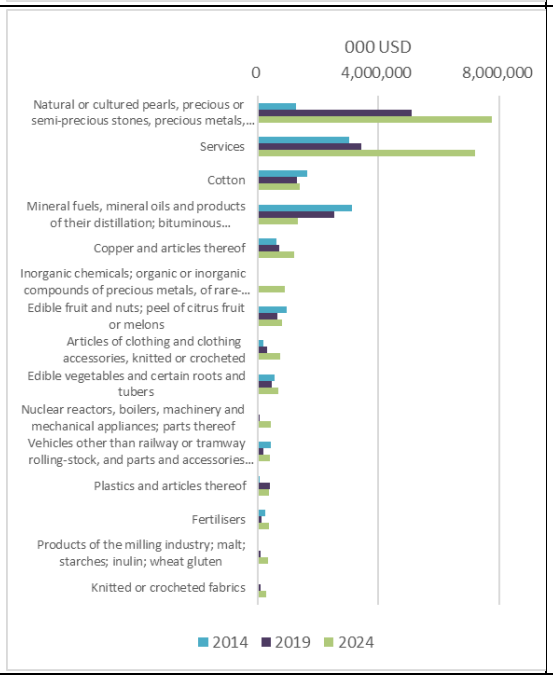
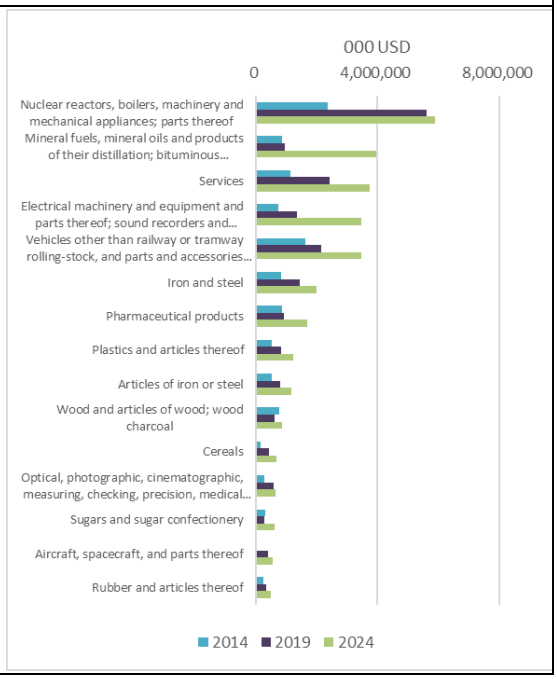
Trade is becoming more diversified by country, driven by recent infrastructure development and policy efforts. By product category, there is a clear trend of importing mining and processing equipment and fuels, while exporting value-added minerals, metals, rare earths, and cotton.

3 https://www.reportlinker.com/clp/country/6226/726277#:~:text=Key%20Market%20Indicators%20Uzbekistan's%20tour ism%20sector%20is,from%20the%20$3.55%20billion%20forecasted%20for%202023.

4 https://www.freshplaza.com/asia/article/9722798/uzbekistan-targets-3-5b-agri-exports-by-2025/

5 https://www.fas.usda.gov/data/uzbekistan-cotton-and-products-update-7#:~:text=Uzbekistan's%20cotton%20production%20in%20marketing%20year%20(MY),and%20Russia%20for%20cotton%20yarn%20and%20fabric.

6 https://discoveryalert.com.au/news/uzbekistan-minerals-initiative-2025-critical-investment/

	Exports (000 USD)	Imports (000 USD)
By Country		
By Item		

Source: Study team based on the National Statistics Committee(https://stat.uz/en/)

Figure 2-6 Import/Exports by Country or Items

Due to the historical background, conflicts have frequently occurred near the borders of Uzbekistan, Kyrgyzstan, and Tajikistan, often resulting in temporary closures and significant transport-related issues. Logistics, in particular, has suffered substantial losses, directly impacting economic activity. However, tensions among these countries have eased in recent years. As border issues with neighboring countries such as Kyrgyzstan and Tajikistan are resolved, trade with them is expected to grow rapidly.

The table below outlines the main export and import items with neighboring countries. Uzbekistan imports include mineral resources, livestock, and steel products, while exporting textiles, petroleum products, and chemical fertilizers.

Table 2-3 The Overview of Imports/Exports between Kyrgyzstan and Tajikistan

Import / Export	**Uzbekistan**	Kyrgyz	Tajikistan
Uzbekistan			
Kyrgyz	Mineral resources, livestock		Special vehicles, petroleum products
Tajikistan	Mineral resources, steel products	Aluminum products	

Source: Study team based on OEC (https://oec.world/en)

The table below shows the main import and export items and trade values between Uzbekistan and Tajikistan/Kyrgyzstan. Key import items from Kyrgyzstan and Tajikistan include zinc, coal, aluminum, cement, and livestock. Main exports are petroleum, textiles, fertilizers, and clothing. The value of exports is about three times higher than that of imports.

In the future, the government plans to focus more on exporting products with higher added value. If border issues improve, logistics activities are expected to grow quickly, especially importing raw materials and exporting processed goods. To support this, it will be important to build a strong transport network that connects the three countries and allows goods to move smoothly and safely.

Table 2-4 Top 10 Import and Export Items by Trade Value Between Uzbekistan and Tajikistan/Kyrgyzstan in 2023

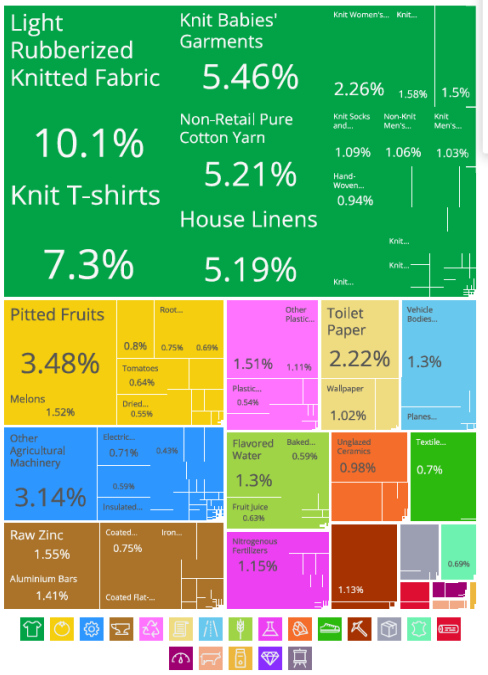
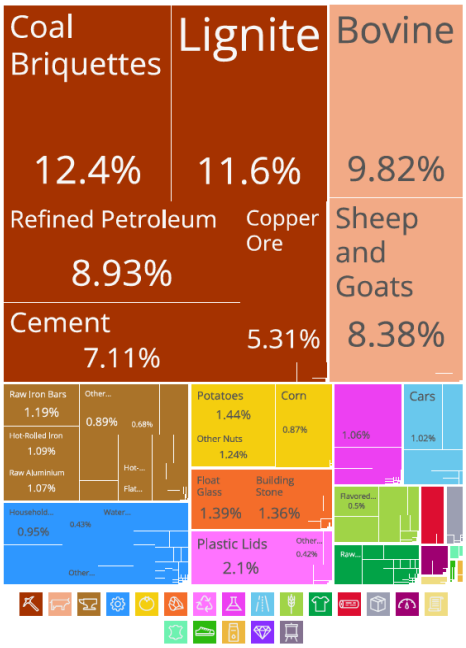
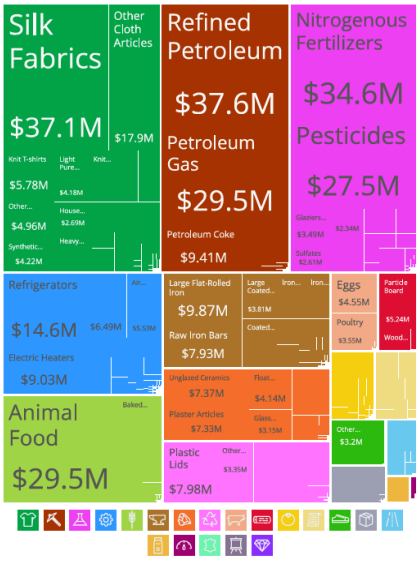
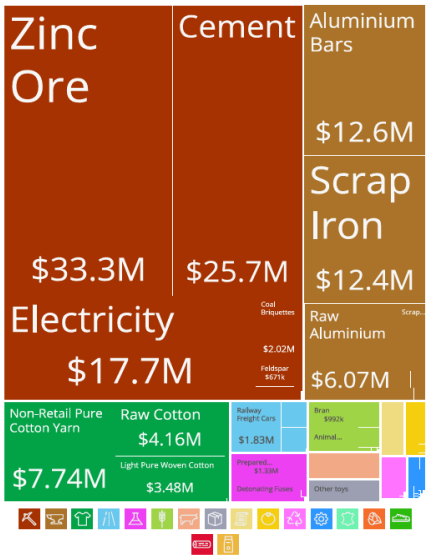
Kyrgyz

Exports

Category	Trade Amount (USD)
Light Rubberized Knitted Fabric	77,676,695
Knit T-shirts	56,123,893
Knit Babies' Garments	41,985,810
Non-Retail Pure Cotton Yarn	40,062,475
House Linens	39,872,875
Pitted Fruits	26,746,713
Other Agricultural Machinery	24,166,414
Knit Women's Undergarments	17,363,576
Toilet Paper	17,029,716
Knit Women's Suits	12,148,179

Imports

Category	Trade Amount (USD)
Coal Briquettes	35,145,194
Lignite	32,972,319
Bovine	27,837,619
Refined Petroleum	25,333,019
Sheep and Goats	23,751,087
Cement	20,170,514
Copper Ore	15,044,648
Plastic Lids	5,960,629
Potatoes	4,079,978
Float Glass	3,940,286

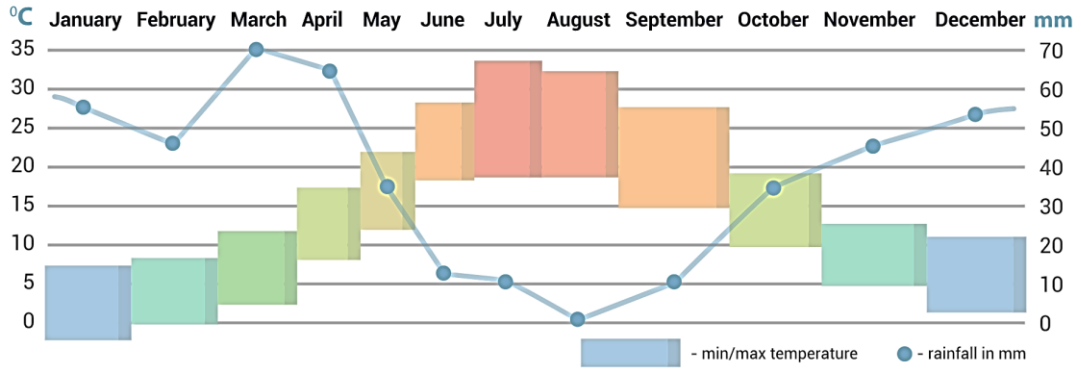
<table>
<tr><th></th><th>Exports</th><th>Imports</th></tr>
<tr><td></td><td>Exports from Uzbekistan to Kyrgyzstan in 2023
Total: $769M
 
</td><td>Exports from Kyrgyzstan to Uzbekistan in 2023
Total: $284M
 
</td></tr>
<tr><td>Tajikistan</td><td>
<table>
<tr><th>Category</th><th>Trade Amount (USD)</th></tr>
<tr><td>Refined Petroleum</td><td>37,649,750</td></tr>
<tr><td>Silk Fabrics</td><td>37,109,014</td></tr>
<tr><td>Nitrogenous Fertilizers</td><td>34,583,932</td></tr>
<tr><td>Animal Food</td><td>29,516,140</td></tr>
<tr><td>Petroleum Gas</td><td>29,502,542</td></tr>
<tr><td>Pesticides</td><td>27,529,093</td></tr>
<tr><td>Other Cloth Articles</td><td>17,946,524</td></tr>
<tr><td>Refrigerators</td><td>14,618,256</td></tr>
<tr><td>Large Flat-Rolled Iron</td><td>9,867,844</td></tr>
<tr><td>Petroleum Coke</td><td>9,406,616</td></tr>
</table>
Exports from Uzbekistan to Tajikistan in 2023
Total: $489M
 
</td><td>
<table>
<tr><th>Category</th><th>Trade Amount (USD)</th></tr>
<tr><td>Zinc Ore</td><td>33,259,646</td></tr>
<tr><td>Cement</td><td>25,672,357</td></tr>
<tr><td>Electricity</td><td>17,687,647</td></tr>
<tr><td>Aluminum Bars</td><td>12,565,926</td></tr>
<tr><td>Scrap Iron</td><td>12,371,788</td></tr>
<tr><td>Non-Retail Pure Cotton Yarn</td><td>7,737,279</td></tr>
<tr><td>Raw Aluminum</td><td>6,066,214</td></tr>
<tr><td>Raw Cotton</td><td>4,161,107</td></tr>
<tr><td>Light Pure Woven Cotton</td><td>3,482,735</td></tr>
<tr><td>Coal Briquettes</td><td>2,021,052</td></tr>
</table>
Exports from Tajikistan to Uzbekistan in 2023
Total: $142M
 
</td></tr>
</table>

Source: JICA Survey team based on OEC (https://oec.world/en).

2.2 Natural Environment

2.2.1 Climate

Uzbekistan a doubly landlocked country, is bordered entirely by other landlocked countries, located between the Amu Darya and Syr Darya rivers. Its land area is 448.9 thousand km^2. The state border stretches over 7,090 km, sharing borders with Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Afghanistan.



Source: https://www.advantour.com/

Figure 2-7 Climate in Uzbekistan - Average, Min/Max Temperatures, Precipitation

Uzbekistan's climate is continental, with large seasonal and daily amplitudes of air temperature, hot and long summers, relatively wet springs, and unstable winters. The length of the day in summer is about 15 hours, and in the winter, at least nine. The coldest month is January. The temperature drops in the north to - 8 °C and below, and in the extreme south, near the town of Termez, it is above zero. The absolute minimum winter temperatures can reach -35 to -38°C. The hottest months are July and August. The average temperature on the plains and foothills is 25-30 °C, while in the south (Termez - Sherabad), it reaches 41 to 42 °C.

Uzbekistan is characterized by its predominantly arid climate, receiving most of its annual rainfall, which generally does not exceed 200-300 mm. A significant portion, about 70%, of this precipitation occurs during the winter and spring months. While snowfall can occur in the lowland areas during winter, it typically results in only a few centimeters of snow cover. In contrast, mountainous regions experience an average of around 60 cm of snow, with exceptional cases where snow cover can reach up to 2 meters.

Regional variations are summarized as follows.

Eastern Regions (e.g., Tashkent, Fergana Valley): These areas experience slightly higher precipitation, with Tashkent receiving about 460 mm annually.

Southern Regions (e.g., Termez): The south experiences hotter summers, with average July temperatures reaching 31°C.

Western and Central Deserts (e.g., Kyzylkum Desert): These areas are extremely arid, with annual precipitation often less than 100 mm

2.2.2 Topography and Geology

Uzbekistan's topography is remarkably diverse, encompassing vast deserts, fertile valleys, and rugged mountain ranges. An overview of its key geographical features is presented below:



Source: https://www.worldometers.info/maps/uzbekistan-map/

Figure 2-8 Uzbekistan Topographic Map, Elevation, Terrain

Deserts and Lowlands

- Kyzylkum Desert ("Red Sand") covers a significant portion of the central part.
- Ustyurt Plateau: Located in the northwest, this plateau features arid landscapes and contributes to the country's extensive lowland areas.
- Aral Sea Basin: Once a vast inland sea, the Aral Sea has dramatically shrunk due to water diversion projects.

Mountains and Highlands

- Tian Shan and Pamir-Alay Ranges: These mountain systems dominate Eastern and southeastern Uzbekistan, with elevations reaching up to 4,500 meters. These ranges contribute to the country's seismic activity.
- Gissar Range: Situated in the south, this range includes some of Uzbekistan's highest peaks, such as Mount Adelunga (4,301 meters).
- Fergana Valley: This valley is located in eastern Uzbekistan and extends into southern Kyrgyzstan and northern Tajikistan. It was formed by ancient river deposits (alluvium) and consists of deep, fertile soils ideal for agriculture. The region lies near tectonic fault lines, making

it prone to earthquakes.

Geological Structure

The geology of Uzbekistan is a complex mixture of ancient continental collision, remnants of oceanic crust, volcanic activity, and sedimentary action. It is known as a region with abundant mineral resources.

- The geology of Uzbekistan consists of two main structures: the Tien Shan orogenic belt and the Turan plateau.
- The Tien Shan orogenic belt includes fold structures such as Chatkal, Kram, Turkestan, and Zarafshan.

Mineral Resources

Uzbekistan has abundant mineral resources, especially gold, copper, uranium, coal, and natural gas. The Muruntau gold deposit, located in the Navoi region of the Kyzylkum Desert, is the largest open-pit gold mine in the world. It is among the largest gold mines globally in terms of both reserves and production. Additionally, there is a significant lignite deposit in Angren, along with coal deposits in Shargun and Baisun, which are situated in the mountainous areas of Surkhandarya Province.

2.2.3 Natural Disaster (Earthquakes, Flooding, etc.)

The diversity of landscapes and climatic conditions the occurrence of various natural hazards . The territory of Uzbekistan is under the influence of extreme temperatures. The mountainous regions are prone to mudflows, floods, and avalanches, while the plains are prone to droughts and dust storms. Uzbekistan ranks among the top 20 countries globally in terms of vulnerability to drought and dust storms.[7].

Natural conditions of high seismic activity also characterize Uzbekistan, and in the past, earthquakes reaching magnitudes of 6-8 have been observed. The country is subject to geological faults, and earthquakes of up to magnitude 7.5 are possible. In 1966, Tashkent was hit by a 5.2 magnitude earthquake that devastated the city. This led to a national agenda to ensure seismic safety in Uzbekistan. On September 13, 2021, the “Law on Ensuring Seismic Safety of the People and Territory of the Republic of Uzbekistan” was promulgated.

2.2.4 Impacts on Climate Change[8]

Overview

Climate change is already having a significant impact on Uzbekistan, with more severe impacts expected. The summary of the expected impacts is as follows.

Short-term Impacts (Next 5 to 10 years)

[7] Fourth Natural Communication of the Republic of Uzbekistan under the UNFCC, UzHydromet /GEF /UNEP Project. Tashkent - 2024

[8] Uzbekistan - Mean Projections Expert | Climate Change Knowledge Portal https://climateknowledgeportal.worldbank.org/country/uzbekistan/climate-data-projections

1) Rising Temperatures

Average temperatures have already increased by 1.5°C since the mid-20th century. This might lead to more heat waves, which affect more heatwaves, especially in summer, affecting human health and agriculture. In March 2025, an unusual heat wave occurred across Central Asia, with temperatures 5-10°C above normal in areas including Uzbekistan

2) Water Scarcity

Glacial retreat in the Tien Shan and Pamir mountains might reduce freshwater availability, which causes less water flows into the Amu Darya and Syr Darya rivers, key sources for irrigation.

3) Impacts on Agriculture

Shorter growing seasons, reduced yields for cotton and wheat, which increased pest outbreaks and plant diseases due to warmer conditions.

4) Increased Desertification

Expansion of the Kyzylkum Desert due to declining soil moisture leads to loss of arable land and biodiversity.

Impact on Road Durability

There are confirmed examples of extreme temperature changes, increased heavy rainfall and flooding, and advancing aridification and desertification threatening road durability. First, extreme temperature changes cause deformation due to asphalt liquefaction in high summer temperatures and facilitate cracking and peeling of pavement due to repeated freezing and thawing in low winter temperatures. Changes in precipitation patterns have increased the frequency of heavy rains and floods, raising the risk of water flows exceeding drainage capacity, eroding road surfaces, and changes in groundwater levels, causing ground subsidence. Additionally, fluctuations in temperature and precipitation cause ground heaving, drying, and cracking, leading to uneven subsidence of the roadbed. Furthermore, desertification and wind erosion are expected to worsen in the future, with flying sand burying roads and salt-containing dust worsening road surface corrosion and slipperiness.

Impacts on Logistics

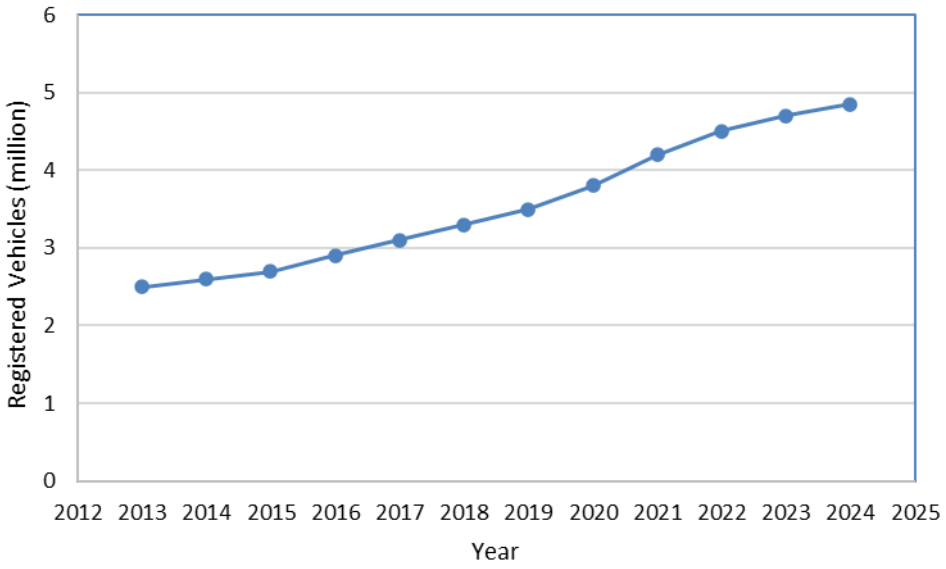
Uzbekistan's international road network serves as the logistics hub of Central Asia, but it is also vulnerable to climate change. Uzbekistan's international road network serves as the logistics hub of Central Asia, but it is also vulnerable to climate change. The international highway (A373: Kamchik Pass section) connecting Tashkent to the Kyrgyz border is located in a mountainous area, where temperatures fluctuate dramatically and there is a risk of snowfall in winter and landslides, flash floods, and rockfalls in spring. In the past, the road has been closed for 10 to 20 days due to landslides (1969) and for 1 to 2 days due to rockfalls (2016/2019). Roads in the southern direction of Termez (Afghanistan border) are at risk of flooding along the Amu Darya River and the effects of dust and reduced visibility due to aridity. Road damage due to climate change, disruptions due to disasters, and increased operating costs are increasing the triple risks of time, price, and reliability, especially on international logistics

routes. Therefore, there is a need to improve durability and drainage functions in response to the region's unique natural conditions (high temperatures, dryness, and seasonal winds).

2.3 Traffic Volume

2.3.1 Motor Vehicle Registration

Uzbekistan has experienced a steady rise in motorization over the past decade, reflecting rising household incomes, greater availability of vehicle financing, and broader economic liberalization.



Source: State Committee of the Republic of Uzbekistan on Statistics

Figure 2-9 Annual Motor Vehicle Registrations in Uzbekistan (2014–2023)

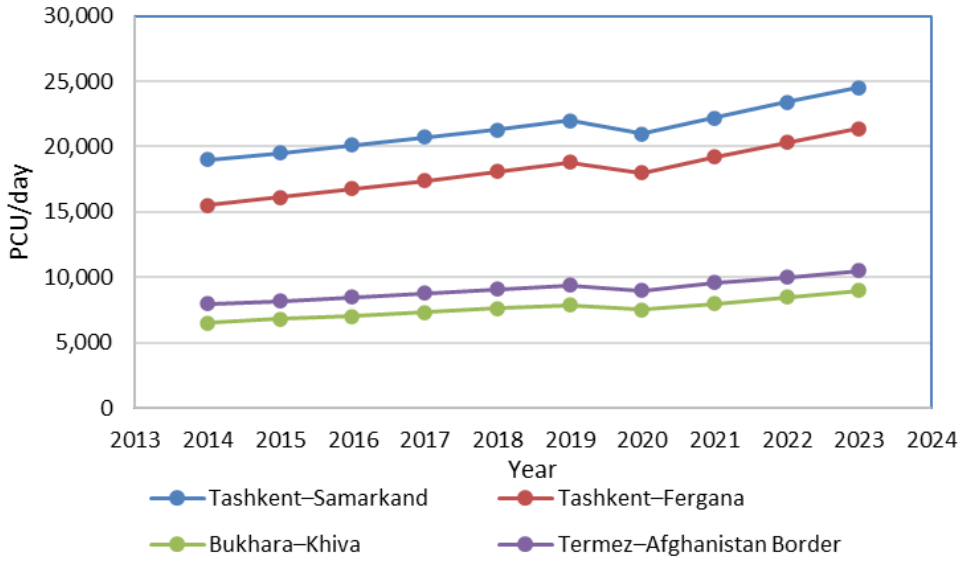
From 2014 to 2023, the number of registered vehicles, including trucks and buses, grew by approximately 65%, with a sharp acceleration after 2017 due to liberalization measures such as relaxed import restrictions and new consumer finance mechanisms. Private vehicle ownership has expanded rapidly, especially in urban centers such as Tashkent, Samarkand, and Namangan.

Commercial vehicle registrations have also risen significantly, supported by the growth of the construction, agriculture, and logistics sectors. Trucks, minibuses, and other freight transport vehicles constitute an increasing share of new registrations.

The sharp increase in motor vehicle registration has led to challenges such as worsening traffic congestion, pressure on urban road networks, and heightened environmental concerns. Policymakers must prioritize sustainable transport planning, including urban public transport investment, traffic management strategies, and promotion of fuel-efficient or electric vehicles to manage the impacts of rapid motorization.

2.3.2 Road Traffic Volume

Traffic volumes on Uzbekistan's road network havehave shown a consistent upward trend over the past decade, reflecting economic growth, urbanization, and increased cross-border trade. Traffic volume data from various regional corridors reveal notable differences across the country. Figure 2-10 Illustrates the Passenger Car Unit per day (PCU/day) in the last decade.



Source: Asian Development Bank, World Bank, Uzbekistan Road Committee

Figure 2-10 Road Traffic Volume Trends in Uzbekistan (Selected Corridors, 2014–2023)[9]

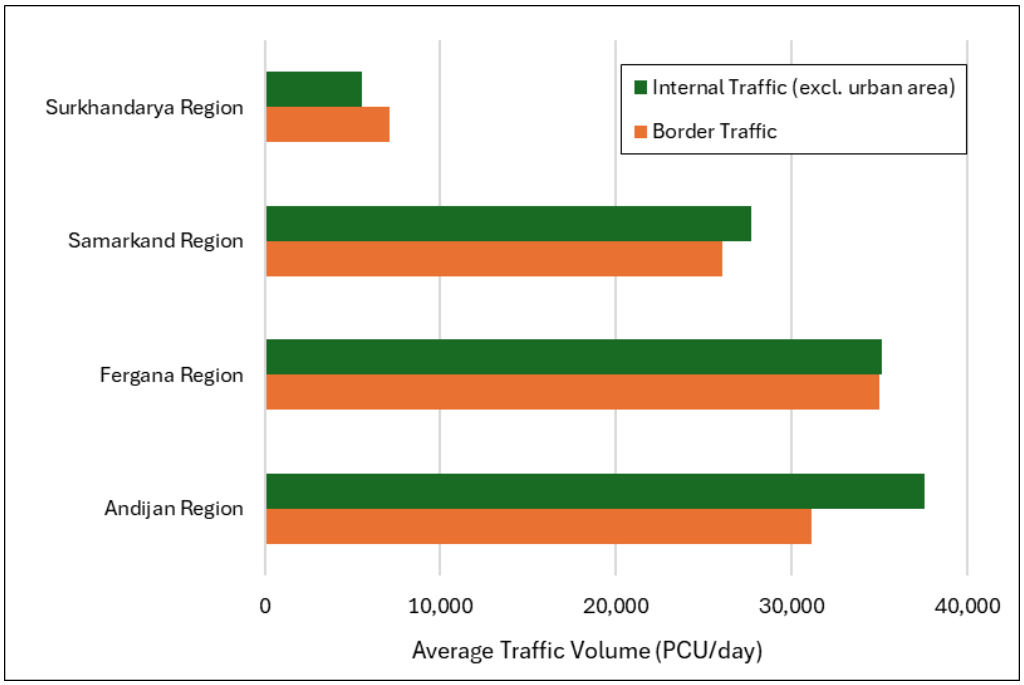
Traffic volumes have grown substantially along major transport corridors, particularly those aligned with the Central Asia Regional Economic Cooperation (CAREC) routes. Key routes such as Tashkent–Samarkand, Tashkent–Fergana, and Bukhara–Khiva have experienced annual growth rates ranging between 4% and 7%.

Urban areas have witnessed particularly high rates of traffic increase due to rising private car ownership and expanding commuter patterns. In contrast, certain rural and sparsely populated regions have observed more modest growth.

Regional comparison was also made, as presented in Figure 2-11. Andijan and Samarkand regions, as well as the Fergana region, located in the Fergana Valley, currently demonstrate some of the highest average road traffic volumes among major regions in Uzbekistan, as shown in Figure 2-11. The heavy vehicle ratios in those regions vary from 6% (Fergana Region) to 16% (Andijan Region). Their elevated traffic levels are consistent with broader regional economic trends, including industrialization and increased cross-border trade with Kyrgyzstan and Tajikistan, as noted in recent Asian Development

[9] PCU: Passenger Car Unit, in which a passenger car is considered as 1.0, and other modes of transport are converted into equivalent numbers of passenger cars.

Bank (ADB) and World Bank reports[10].



Source: Uzbekistan Road Committee, based on each Project Survey Data 2023

Figure 2-11 Regional Traffic Volume Comparison (Andijan, Fergana, Samarkand and Surkhandarya)

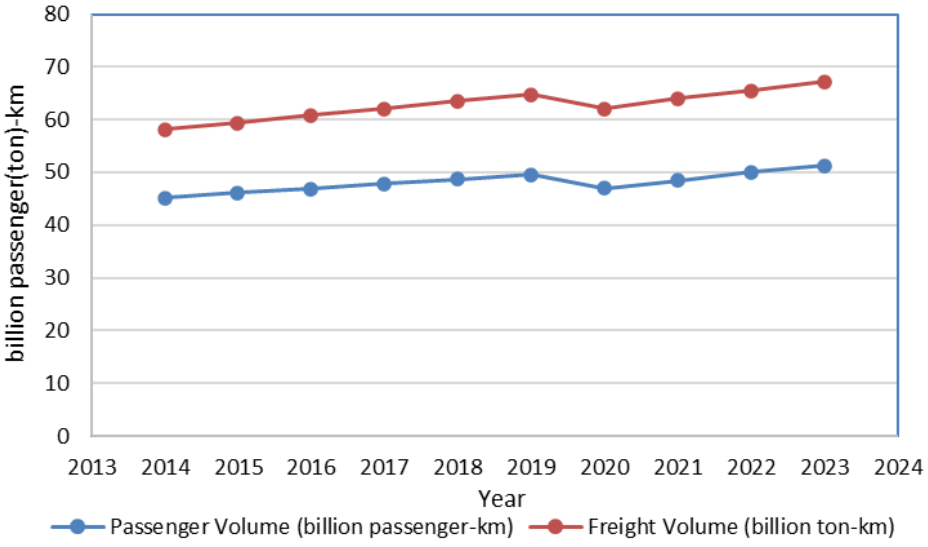
Traffic growth across Uzbekistan is unevenly distributed geographically:

- Andijan region has traditionally recorded high traffic volumes exceeding 40,000 PCU/day at some locations, functioning as a major urban and industrial hub. Meanwhile, in the Fergana region, showing nearly 30,000 PCU/day at some locations, including those near the border, traffic volumes are presumed to have increased significantly in recent years due to industrialization, the development of industrial parks, and the revitalization of cross-border trade.
- In the central region (Tashkent–Samarkand, Bukhara corridor), the border traffic volume in the Samarkand region, particularly on the access road to RO-3 (border with Tajikistan), is nearly 30,000 PCU/day, marking one of the highest levels in the country. In addition, a notable increase in seasonal passenger flow, driven by the concentration of tourism resources, and freight flow has been observed.
- Southern regions, particularly along the Termez–Afghanistan route, show strategic importance for international freight movements.
- Samarkand and Surkhandarya regions also exhibit substantial traffic levels, reflecting ongoing efforts toward economic diversification and tourism development promoted under Uzbekistan's national development strategies.

[10] ADB (2022): "Uzbekistan Road Sector Development Strategy"; World Bank (2023): "Building Blocks for Integrated Transport and Logistics Development"

2.3.3 Passenger and Freight Transport Volumes

Road transport continues to dominate both passenger and freight movements in Uzbekistan, accounting for over 90% of domestic transport activities. Recent trends show a strong post-pandemic recovery in passenger movement and consistent freight transport growth.



Source: Uzbekistan Statistics Committee, Transport Reports

Figure 2-12 Passenger and Freight Transport Volumes by Road (2014–2023)

Passenger volumes suffered a significant decline in 2020 due to COVID-19 restrictions but rebounded by 2022, achieving near pre-pandemic levels. Urbanization and regional connectivity initiatives have supported continued growth in intercity and suburban passenger movements. The most prominent passenger corridors include Tashkent–Samarkand, Tashkent–Fergana, and routes connecting major tourist centers such as Bukhara and Khiva.

Freight transport has shown a steadier growth trajectory, underpinned by Uzbekistan's expanding role in Central Asian logistics and international trade. Key commodities moved by road include agricultural products, construction materials, consumer goods, and mineral resources. Freight volumes have particularly increased along strategic CAREC corridors, as Uzbekistan positions itself as a transit hub linking China, Central Asia, and Europe.[11,12].

Uzbekistan is located at the intersection of CAREC Corridors 2, 3, and 6, and in recent years, the development of international highways and railways has strengthened its role as a key hub for international logistics in Central Asia. In fact, the volume of international freight transport ranks among the highest in the region, and its function as a transit corridor has been reinforced—particularly along strategic east-west (China–Caspian Sea) and north-south (Russia–South Asia) routes.[13]

[11] Annual report of Ministry of Transport of Uzbekistan for 2022
[12] https://www.uzdaily.uz/en/uzbekistans-freight-transport-volume-reaches-record-15-billion-tons-in-2024/?utm_source=chatgpt.com
[13] ADB (2022) "Proposed Loan and Technical Assistance Grant Republic of Uzbekistan: National Road Development Project"; World Bank (2023) "Uzbekistan - Building Blocks for Integrated Transport and Logistics Development"

3 DEVELOPMENT PLAN ON TRANSPORTATION SECTOR IN UZBEKISTAN AND NEIGHBORING COUNTRIES

3.1 Development Planning and Superior Planning

3.1.1 Uzbekistan 2030 Strategy (Presidential Decree UP-158)

Uzbekistan's development and strategic plans are aligned with the "Uzbekistan 2030 Strategy", and projects are subdivided on this plan.

3.1.1.1 Basic Policy (Philosophy, Values, and Concept of Strategy)

The "Uzbekistan 2030 Strategy" is a long-term national strategy approved in September 2023, which envisions the creation of a “New Uzbekistan” as the country’s national vision[1]. The five basic policies (fundamental concepts) of the strategy are as follows. A structural shift away from the centralized power of the former Soviet Union toward a market-oriented economy and civil society-oriented economy.

Table 3-1 Uzbekistan 2030 Strategy Basic Policy

Item	Contents
(1) Sustainable economic development	Entering upper middle-income countries through economic growth (aiming to double GDP and achieve per capita income of $4,000)
(2) International standardization of education, medical care, and social protection	Develop a public service system that meets the needs of the public and international standards such as the SDGs
(3) Construction of a comfortable and safe living environment	Environmental, housing, urban planning and community improvements
(4) Establish a fair and modern governance structure	People-centered government with emphasis on digital, transparency, and decentralization
(5) Firm assurance of sovereignty and security	Strengthening homeland defense, security, and diplomacy and maintain independence

Source: Uzbekistan 2030 Strategy

3.1.1.2 Positioning of the Plan (National System, Implementation Structure, Priorities)

The "Uzbekistan 2030 Strategy" is not only a vision document but also a legal and institutional framework that covers all activities of state policy, administration, finance, and legislation. In addition to the following, non-governmental and civil society organizations such as the "Center for Strategic Development" and the "National Movement of Uzbekistan" are officially participating in the implementation system, aiming for a model of strategy implementation that is state-led and citizen-participatory, rather than administration-driven.

[1] Strategy was put for public discussion on 31.07.2023 till 09.08.2023 “Uzbekistan – 2030” strategy publicized for public discussion
Strategy was Approved by President Decree on 11th September 2023 DP-158-сон 11.09.2023. On the Strategy "Uzbekistan — 2030"

Table 3-2 Institutional Positioning and Principles of Implementation

Element	Contents
The Nation's Top Priority Issues	The highest priority implementation responsibility of all government agencies, including all ministries, local governments, and state-owned enterprises. Each agency head is individually responsible for implementation.
Implementation System	The 2030 Strategic Republican Committee, chaired by Prime Minister Alipov, oversees the implementation, progress supervision, and reporting of the strategy.
Annual Programming	The strategy is embodied in an annual action plan, with mandatory semi-annual progress reviews and evaluation reports.
Linkage with Decentralization	Republic of Karakalpakstan, People's Councils at the provincial and municipal level also review local implementation on a quarterly basis.
Social Supervision and Visibility	Establishment of a public evaluation portal, publicity through media and SNS, and visualization of the progress of the strategy.
Legal Support	Incorporate strategy-based legislation, policy coordination, and public consultation as a legal obligation, with the Ministry of Justice taking the lead.

Source: Uzbekistan 2030 Strategy

3.1.1.3 List of "100 Goals" by Sector

The Uzbekistan 2030 Strategy is a comprehensive vision for guiding the long-term development of the nation, and is structured around the following five broad categories (groups of strategic goals). Each major category represents a priority area for achieving the country's sustainable growth and improving the quality of life of the people, and is further organized into several sectoral themes (medium categories). A total of 100 goals and numerical targets are clearly defined under the medium categories, each accompanied by Key Performance Indicators (KPIs) to be achieved by 2030.

Table 3-3 Major Categories and Sector Themes of Uzbekistan 2030 Strategy

Broad Category	Field Theme
I. An appropriate environment for the realization of each individual's potential	1.1. The education system
	1.2. Related to ensuring the health of the population
	1.3. The provision of social services and poverty reduction
	1.4. National youth policy and the field of sports
	1.5. Ensure spiritual growth and raise the cultural sphere to a new level
II. National well-being through sustainable economic growth	Macroeconomics and Public Finance
III. Water conservation, environmental protection	3.1. Related to water conservation
	3.2. Related to environmental protection
IV. Organization state administration oriented toward ensuring the rule of law and service to the people	4.1. Reforms in the organization of state administration oriented to the service of the people and to the integrity of the public administration
	4.2. Reforms related to ensuring the rule of law and reforms in the judicial and legal systems
V. Consistent policies based on the principle of a "secure and peace-oriented state	5.1. Reforms aimed at an open, pragmatic and proactive foreign policy
	5.2. Reforms related to strengthening national security and defense capabilities

Source: Uzbekistan 2030 Strategy

3.1.1.4 National Objectives for the Transportation and Transit Sector

The "Uzbekistan 2030 Strategy" sets national goals across multiple broad categories to strengthen the transportation sector in various areas of the country as a foundation for economic growth and regional integration. In terms of extracting the parts related to the transportation and transport sector, the goals for transportation and transport include strengthening cross-border corridors, enhancing logistics, public transport functions, improving road safety, and developing human resources related to transportation and transport.

Table 3-4 National Objectives of Uzbekistan 2030 Strategy

Large Category and Medium Category	Target	Evaluation Index
I. Creation of an appropriate environment for the realization of each individual's potential 1.1. reforms in the education system	6. Teaching modern knowledge and skills to learners through the development of a professional education system	• Increase the share of state subsidies in the training of mid-career professional personnel in the fields of information technology, construction, and transportation and logistics to 100
II. Ensuring national well-being through sustainable economic growth	52. Higher level of integration of the Republic of Uzbekistan into the global transportation and logistics network, and potential of the domestic transportation system	• Increase the scale of transit cargo transport through the country to 16 million tons • 40% reduction in the duration of freight transport by rail to the North • Triple the scale of passenger and freight transportation services • Increase in the proportion of electrified railroads to 65%. • Increase in air traffic to 4 times • Construction and repair of 56,000 km of roads • Transition to market principles in setting rates for passenger and cargo transport services by rail and air and attract private and foreign operators to the area.
	56. A consistent transition to market principles in exclusive areas, an increase in the share of the private sector in the economy, and the creation of an environment most conducive to free business activity	• Abolition of 17 state monopolies in the country, broad attraction of the private sector to the area, but retention of state operation of trunk energy supply and transportation networks and areas of national administration and security. • Transfer to the private sector of services related to rail transport, construction and management of motorways, gas and electricity supply
	58. Increasing the number of tourists by creating broad conditions for the development of domestic and foreign tourism in Uzbekistan	• Further promotion of the creation of a national inter-city bus route company.
	59. Rapid development of service areas in various regions	• Development of services in the areas of modern market services, IT services, educational, medical, and legal services, arts, tourism, lodging, food service, and transportation in medium and large cities and districts with populations of 300,000 or more
	61. Securing sustainable, long-term sources of financing for infrastructure projects	• Creation of a public-private partnership project development fund in Uzbekistan in cooperation with international financial institutions • Establish a track record of issuing "Infrastructure Bonds
IV. Organization of state administration	78. Organization of the work of state management bodies based	• Increase the share of the private sector to more than triple in areas such as health, construction, transportation, and

Large Category and Medium Category	Target	Evaluation Index
oriented toward ensuring the rule of law and service to the people 4.1. Reforms in the organization of state administration oriented to the service of the people and to the integrity of the public administration	on the principle of a "state in service of the people	education
4.2. Reforms related to ensuring the rule of law and reforms in the judicial and legal systems	87. Orienting the activities of law and order maintenance agencies toward the protection of human interests, honor, dignity, and rights	• Reduce the number of traffic accidents with serious consequences by 50% or more
V. Consistent continuation of policies based on the principle of a "secure and peace-oriented state" 5.1. reforms aimed at an open, pragmatic and proactive foreign policy	91. raising the level of practical cooperation in the Central Asian region to a new qualitative level	• Strengthening of close cooperation within the region in priority areas, especially in the areas of environment, nature conservation, rational use of water resources, and further development of transportation and communication infrastructure • Developing multifaceted and mutually beneficial relations with Afghanistan, providing close support for the country's economic reconstruction, and contributing to the realization of its transportation and transit potential
	92. Development of mutually beneficial relationships with traditional partners, geographic expansion of international cooperation, and connection to global production and supply chains	• Further expansion of existing relations with countries in South Asia, the Middle East, and Africa; establishment of mutually beneficial cooperation in new and promising areas; and creation of transportation and logistics corridors that link regions and create opportunities for Uzbekistan to enter global markets,

Source: Uzbekistan 2030 Strategy

3.2 Relevant Laws on Infrastructure Development in Uzbekistan

3.2.1 Road Infrastructure

In Uzbekistan, the Urban Planning Code of the Republic of Uzbekistan serves as the primary legal legistlation for road infrastructure development, and each standard is developed based on presidential decrees and ministerial ordinances. The standards for road infrastructure include ShNK (Standards and Regulations for Urban Planning in Uzbekistan), GOST (Soviet-era national standards), and UZDST (Uzbekistan national standards), each of which conforms to the higher level laws. The main relevant laws and regulations pertaining to road infrastructure are listed in Table 3-5.

Table 3-5 Relevant Laws on Road Infrastructure

Laws	Summary
Urban Planning Code of the Republic of Uzbekistan	The highest level of road infrastructure law, which is based on all of the following standards, etc.
Decree of the President of the Republic of Uzbekistan	Presidential Decree issued by the President of the Republic of Uzbekistan, which is based on all of the following standards
ShNK 2.05.02-07 (Automobile Roads)	Specifies basic design parameters for roads
ShNK 2.06.04-03 (Bridges and Overpasses)	Design standards for bridges and overpasses
ShNK 2.05.09-10 (Road Drainage Facilities)	Standards for drainage ditches
GOST 26804-86 (Testing Methods for Road Construction Materials)	Standardized testing methods for asphalt, concrete, crushed stone, and other road-building materials.
GOST 9128-2013 (Asphalt Mixes and Asphalt Concrete)	Technical standards for asphalt mixtures used in road pavement.
UZDST3283-2017	Technical specifications for road sign
Law of the Republic of Uzbekistan On procedures for the withdrawal of land plots for public needs with compensation	Land Acquisition methods

Source: JICA Survey Team

3.2.2 Railway

The “On Rail Transport” (№ ЗРУ-1006, “О железнодорожном транспорте”) law, revised in September 2024 and effective January 2025. This section describes in detail the legal system regarding construction schemes. The amendment clearly states the policy of increasing the private sector's share in the railway sector and the use of the Public Private Partnership (PPP).

Article 32 provides for PPP financing and private investment in the construction, renovation, reconstruction, and modernization of railway facilities, as well as financing from the state budget and international financial institutions. It also specifies that track, stations, freight yards, and other facilities that are deemed non-public can be developed through private initiative and cost-sharing.

Article 33 stipulates the transfer of railway land to the private sector under a PPP agreement. It specifies that the scheme for land transfer shall follow the “About PPP” (№ ЗРУ-537, “О государственно-частном партнерстве”) enacted in 2019, to which Articles 31 and 32 of the Law apply. It stipulates that the duration of the transfer shall be between 3 and 49 years.

Article 31 of “On Railway Transportation” also stipulates that suburban railways should be developed by local governments with their own funds, and that profits earned from railway commercial operations, i.e., dividends to the state, may continue to be directed to railway development.

3.3 Relevant Organizations, Institutions and Budgets in Uzbekistan

3.3.1 Ministry of Transport (MOT)

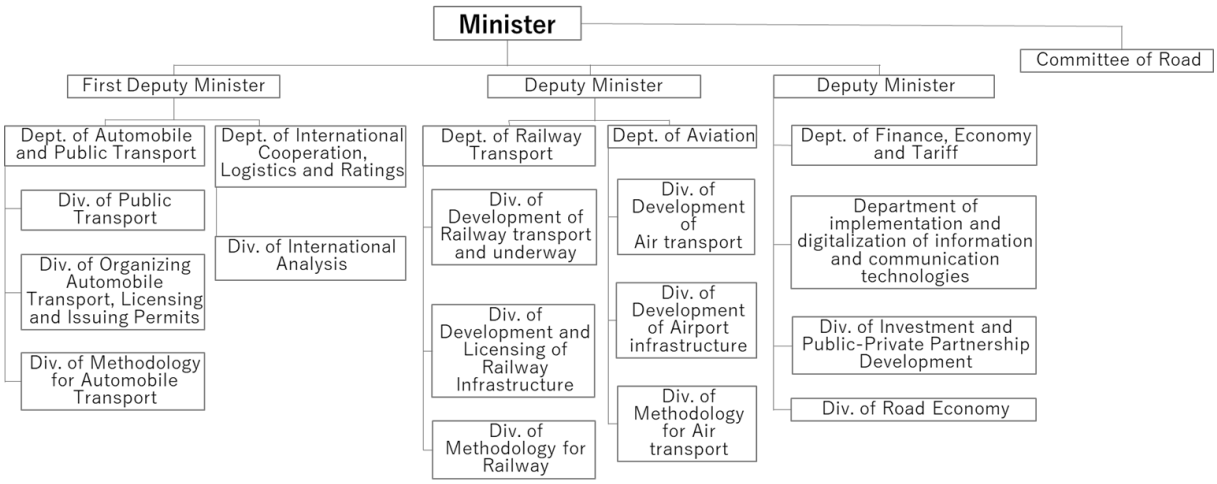
The Ministry of Transport (MOT) was established by Presidential Decree No. 5647 in 2019 to improve

the administrative system in the transportation sector as a successor of the Road Transport Agency of Uzbekistan. The administrative system in the transportation sector was reorganized, and the administrative functions that had been divided among the Road Commission for the road sector, the Civil Aviation Authority for the aviation sector, and the Railway Transport Safety Supervision and Inspection Bureau for the railroads were transferred collectively under the jurisdiction of MOT. On the other hand, regarding railway, UTY is implementing railway maintenance.

3.3.1.1 MOT Organization Chart

An organizational chart of the MOT is shown in Figure 3-1.

The departments concerned with infrastructure development are divided into three lines, each line having a deputy minister in charge. In addition, CR is an agency directly subordinate to the Minister of Transport, and operates independently from the regular departments within the MOT. The MOT is responsible for transport policy planning, and establishing systems, and coordination of international cooperation and financing projects. On the other hand, CR is responsible for practical aspect of road development, including planning, design, construction, and maintenance. For the organizational chart of CR, please refer to 3.3.2.1.



Source: Prepared by JICA Survey Team based on the MOT website

Figure 3-1 MOT Organization Chart

3.3.1.2 Departments of the MOT and Their Responsibilities

Table 3-6 shows the department and divisions of the MOT related to infrastructure development and their responsibilities. Within the MOT, Div. of Investment and Public-Private Partnership Development became the counterpart for working-level meetings. A high-level meeting structure has also been established, with the Deputy Minister in charge of the section chairing the meetings.

Table 3-6 Departments of the MOT and Their Responsibilities

Department	Responsibilities	No. of Staff
Dept. of Automobile and Public Transport	Management of the related divisions and development of work plans for road transport and public transport	1
Div. of Public Transport	Developing and implementing comprehensive plans for road transport and public transport	7
Div. of Organizing Automobile Transport, Licensing and Issuing Permits	Developing regulations, laws for road transport and issuing licenses related to road transport	7
Div. of Methodology for Automobile Transport	Developing policies to improve the regulatory framework for road transport	3
Dept. of International Cooperation, Logistics and Ratings	Improvement of international logistics efficiency and international rankings.	6
Div. of International Analysis	Collecting and analyzing statistical data and market trends related to international transportation	3
Dept. of Railway Transport	Management of divisions and development of work plans for railway transport	1
Div. of Development of Railway transport and underway	Developing the railway and metro sector and improving the efficiency of services	5
Div. of Development and Licensing of Railway Infrastructure	Issuing licenses for railway transport and reviewing draft laws and regulations in the railway sector	3
Div. of Methodology for Railway	Planning policies and improving the legal framework of the railroad sector, Human resource development	3
Dept. of Aviation	Management of divisions and development of work plans for air transport	1
Div. of Development of Air transport	Improving the efficiency of air passenger and cargo transport, creating a competitive environment, and improving services of air transport	5
Div. of Development of Airport infrastructure	Utilizing PPP and attracting investment in airport operations, and improving airport services	4
Div. of Methodology for Air transport	Developing policies and improving the legal framework of the air transport sector, human resource development	3
Dept. of Finance, Economy and Tariff	Financial management and accounting and reporting for the MOT	5
Department of implementation and digitalization of information and communication technologies	Policy formulation in the field of information and communication technology, introduction of electronic systems	5
Div. of Investment and Public-Private Partnership Development	Coordination of implementation and supervision of donor's projects of international donor and foreign government financial institutions, and public-private partnership projects	5
Div. of Road Economy	Formulation of socio-economic development plans in the field of transportation, improvement of the road industry	3

Source: Prepared by JICA Survey Team based on the MOT website

3.3.2 Road Committee (CR)

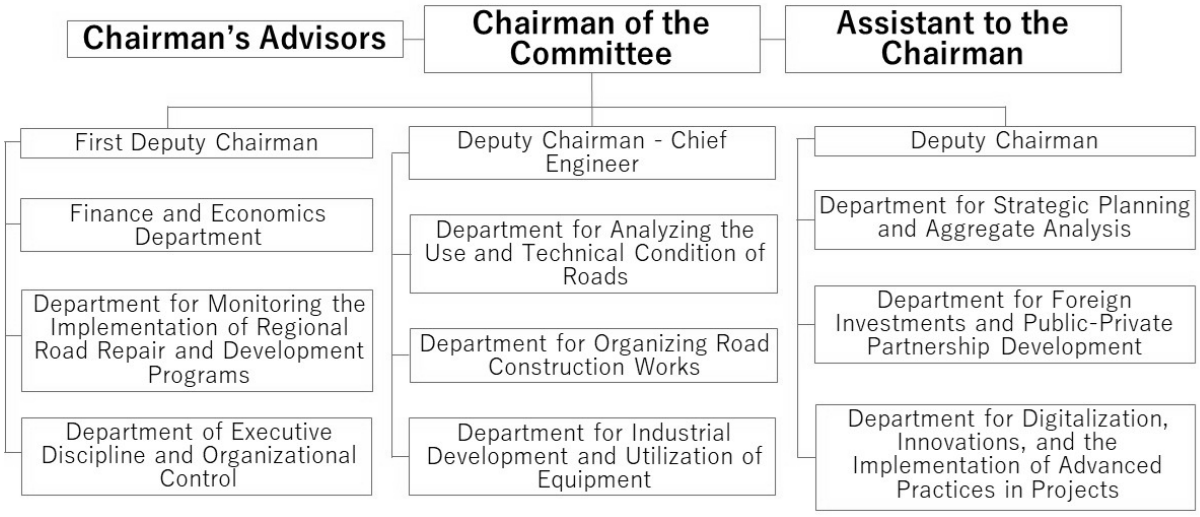
3.3.2.1 CR Organization Chart

An organizational chart of the CR is shown in Figure 3-2.

The departments concerned with infrastructure development are divided into three lines, each line

having a deputy chairman in charge. As described in Section 3.3.1.1, the CR is an organization directly under the Minister of Transport and operates independently from the regular departments of the MOT. It is responsible for practical aspects of road development, including planning, design, construction, and maintenance. Accordingly, when the survey team requested the Uzbekistan side to provide a list of candidate projects related to roads, bridges, and disaster prevention, the Deputy Minister of Transportation instructed the CR to select candidate projects, and the CR, which is responsible for road improvement operations, provided the list of candidate projects.

While this section shows an organizational chart of the CR's headquarters, the organizational charts of regional offices and related agencies involved in maintenance and management are shown in Section 8.2.



Source: Prepared by JICA Survey Team based on the CR website

Figure 3-2 CR Organization Chart

3.3.2.2 Departments of the CR and Their Responsibilities

Table 3-7 shows the department and divisions of the CR related to infrastructure development and their responsibilities. Within the CR, Div. of Investment and Public-Private Partnership Development became the counterpart for working-level meetings.

Table 3-7 Departments of the CR and Their Responsibilities

Department	Responsibilities	No. of Staff
Finance and Economics Department	Efficient facility management of the domestic road network, management of the economic and financial affairs of the Committee	7
Department for Monitoring the Implementation of Regional Road Repair and Development Programs	Monitoring the progress of road projects in each region and evaluating their implementation	7
Department of Executive Discipline and Organizational Control	Monitor implementation of orders, rules and regulations and internal discipline compliance at the Road Commission	4
Department for Analyzing the	Technical analysis and future planning related to road	7

Department	Responsibilities	No. of Staff
Use and Technical Condition of Roads	safety, road traffic and road structures	
Department for Organizing Road Construction Works	Development of annual plans for road projects, supervision of implementation, determination of technical requirements and design specifications	7
Department for Industrial Development and Utilization of Equipment	Development and implementation of annual and long-term plans for technical assistance to road-related companies and organizations	5
Department for Strategic Planning and Aggregate Analysis	Collection and analysis of road construction and maintenance data and policy development	7
Department for Foreign Investments and Public-Private Partnership Development	Attract international financial institutions and foreign investment, evaluate and supervise projects for international organizations, and plan and implement PPP projects	7
Department for Digitalization, Innovations, and the Implementation of Advanced Practices in Projects	Promote the introduction of digital technology into road construction and maintenance.	7

Source: Prepared by JICA Survey Team based on the CR website

3.3.3 The Budget of the Road Sector

The national budget in the road sector from 2020 to 2024 is presented in Table 3-8.

Table 3-8 Budget Amount in Road Sector (2020-2024)

Year※	UZS (Trillion som)	USD (Million USD)
2020	5.9	461
2021	9.9	773
2022	8.5	664
2023	12.8	1,000
2024	11.5	898

※The fiscal year of Uzbekistan is from January to December

※1USD=12,800UZS

Source: Prepared by JICA survey team based on the interview result to CR

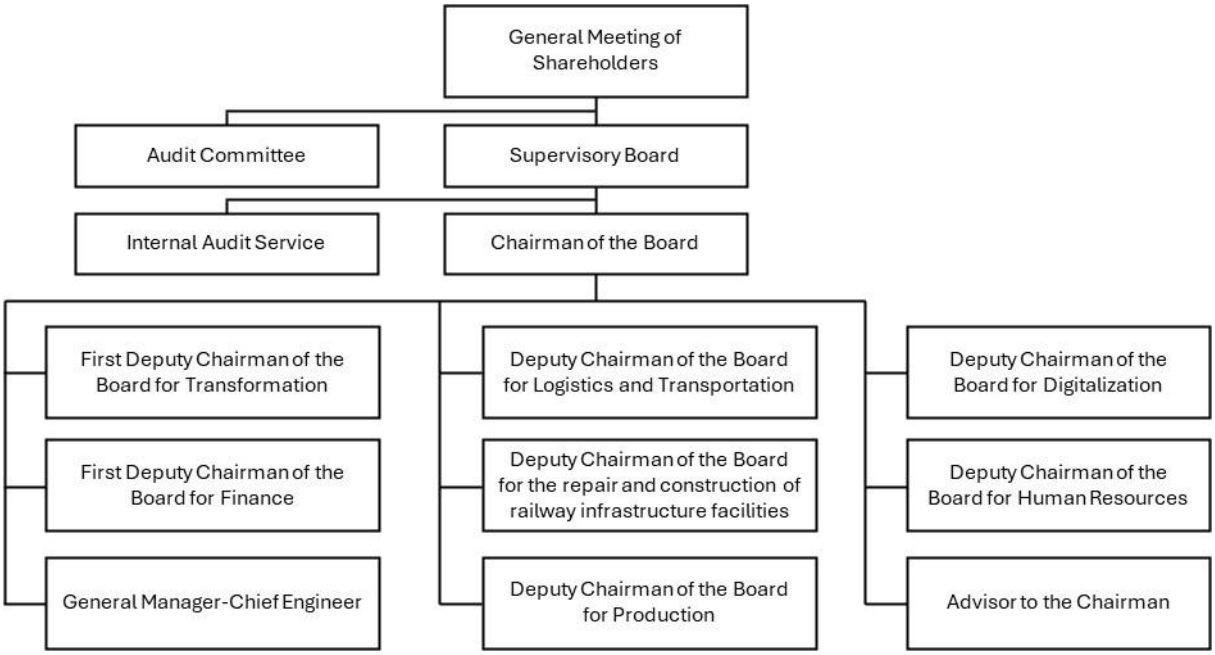
3.3.4 Uzbekistan Railways (UTY)

UTY was established in 1994 as the national railway company responsible for operating all railways in the Republic of Uzbekistan; in 2014. It was transformed into a Joint Stock Company as a means of achieving modern corporate governance. 100% of stocks are owned by the Ministry of Economy and Finance (MEF), with a market capitalization of 3,828.9 billion UZS. It also has the right to issue more stocks and increase its capital within certain limits. Currently, it operates 7,395.1 km of railroads and employs 79,421 people.

3.3.4.1 Organization of UTY

The organizational chart of UTY is shown in Figure 3-3. The Chairman of the board is under the General Meeting of shareholders and under Chairman of the board, there are Deputy Chairman of the board in

each area. Some of those are in charge of subsidiaries, which are ranging from 100% to 43.4% owned by UTY. The name of each joint stock company, its role, and the percentage of shares owned by UTY are shown in Table 3-9. For the core businesses, such as passenger train operations, freight train operations, maintenance, and construction, the companies are divided by function. For the non-core business part, UTY owns a large number of assets, including a concert hall, a botanical garden, a hospital, and a railway school. UTY itself owns almost all of the non-core business assets.



Source: UTY Business Plan 2023

Figure 3-3 UTY Organization Chart

Table 3-9 Subsidiaries of UTY

LIST OF ENTERPRISES INCLUDED IN THE ORGANIZATIONAL STRUCTURE:								
#	Name of Enterprise	Share (%)	Share Capital (Book Value)	Scope of Activity	Income Received (Dividend)		Investments	
					2021	2022	2021	2022
1. STRUCTURAL ENTITIES								
1.	JSC “Uzvagonta'mir”	90	2,968,227	Repair of freight and passenger cars	61,949	118,919		
2.	JSC “Uztemiryuljulovchi”	98,3	51,263,978	Organization of passenger transportation	-	-		
3.	JSC “Tashkent Passenger Wagon Construction and Repair Plant”	90	5,649,047	Repair and construction of passenger cars	869,388	-		
4.	JSC "Uztemiryulcontainer"	90	3,366,271	Transportation logistics and forwarding	29,645,066	102,318,652		
5.	JSC "Yulreftrans"	51	21,887,309	Transportation of high-perishable goods	-	-		
6.	JSC “Granit”	43.4	1,322,943	Production of non-metallic construction products	45,016	208,646		
7.	JSC “Tashkent Mechanical Plant”	89	110,229,584	Machinery manufacturing	744,748	36,479,777	-	-
8.	UE “Tashkent Regional Railroad Junction”	100	104,202,801	Railway freight transportation	Included in the consolidated balance sheet of JSC UTY			
9.	UE “Kokand regional railroad junction”	100	29,114,462	Railway freight transportation	Included in the consolidated balance sheet of JSC UTY			
10.	UE “Bukhara regional railroad junction”	100	100,846,114	Railway freight transportation	Included in the consolidated balance sheet of JSC UTY			
11.	UE “Kungrad Regional Railroad Junction”	100	85,470,771	Railway freight transportation	Included in the consolidated balance sheet of JSC UTY			
12.	UE “Karshi Regional Railroad Junction”	100	36,118,404	Railway freight transportation	Included in the consolidated balance sheet of JSC UTY			
13.	UE “Termez Regional Railroad Junction”	100	40,776,149	Railway freight transportation	Included in the consolidated balance sheet of JSC UTY			
14.	UE "Uztemirjulmashtamir"	100	15,186,707				-	-
15.	Subsidiary enterprise “Andijan Mechanical Plant”	100	1,905,757	Construction and repair of railroad freight cars	414,133	3,999,717		
16.	SE "Foundry-Mechanical Plant"	100	833,480	Construction and repair of railroad freight cars				

LIST OF ENTERPRISES INCLUDED IN THE ORGANIZATIONAL STRUCTURE:								
#	Name of Enterprise	Share (%)	Share Capital (Book Value)	Scope of Activity	Income Received (Dividend)		Investments	
					2021	2022	2021	2022
17.	UE “Uztemiryulkurilishmontazh”	100	149,700	Construction of the railroad and metro lines	679,331	-	-	-
18.	UE Trust “Kuprikkurilish”	100	425,971	Construction of bridges and tunnels	485,872	-	-	-
19.	UE “Electrical Engineering Train No. 1”	100	332,456	Construction of distribution engineering facilities	632	273,477		
20.	UE “Specialized Construction and Assembly Train No. 406”	100	41,835	Construction of distribution facilities to provide electricity and telecommunications				
21.	UE “Rail Welding Train No. 14”	100	1,353,886	Repair of finished metal products	-	32,321		
22.	UE “Uzheldorrexpedition”	100	2,670,542	Intermediary functions in transportation and forwarding activities in international cargo transportation				
23.	UE “Eyvalek Makhsus Temir Beton”	100	29,481,156	Manufacture of concrete building products				
2. Non-Core Asset								
24.	UE “Ugam-Chatkal State Biosphere Reserve”	100	1,322,229	Activities of botanical gardens, zoos, and nature reserves	Financed by JSC UTY on an estimated basis			
25.	JSC "Shargunkumir"	99,9	7,029,420	Production of hard coal				
26.	Horse-breeding complex "Korabayir" in the structure of " Karshi RRJ" (branch)	100	47,893,746	Breeding	Included in the consolidated balance sheet of JSC UTY			
27.	Briquette plant in Pop City under the management of the Department of "Temiryuulyonilgita'imin"	100	38,490,234	Production of briquette coal	Included in the consolidated balance sheet of JSC UTY			
28.	Tashkent Railway Technical College	100	Institution	Technical and vocational secondary education	Financed by JSC UTY on an estimated basis			
29.	Samarkand Railway Technical College	100	Institution	Technical and vocational secondary education	Financed by JSC UTY on an estimated basis			

LIST OF ENTERPRISES INCLUDED IN THE ORGANIZATIONAL STRUCTURE:								
#	Name of Enterprise	Share (%)	Share Capital (Book Value)	Scope of Activity	Income Received (Dividend)		Investments	
					2021	2022	2021	2022
30.	Kokand Railway Technical College	100	Institution	Technical and vocational secondary education	Financed by JSC UTY on an estimated basis			
31.	Palace of Culture of Railroaders	100	3,924,485	Activities of membership organizations not included in other categories	Financed by JSC UTY on an estimated basis			
32.	Medical and sanitary service	100	Institution	Other health care activities	Financed by JSC UTY on an estimated basis			
33.	Central Clinical Hospital	100	Institution	Activities of the hospital facility	Financed by JSC UTY on an estimated basis			
34.	Central Polyclinic	100	Institution	Activities of the hospital facility	Financed by JSC UTY on an estimated basis			
35.	Railway Hospital for Children	100	Institution	Activities of the hospital facility	Included in the consolidated balance sheet of JSC UTY			
36.	Road plague control station	100	Institution	Other health care activities	Included in the consolidated balance sheet of JSC UTY			
37.	Central athletic and sports club “Lokomotiv" with branches at stations	100	Institution	Sports and recreational activities	Included in the consolidated balance sheet of JSC UTY			

Source : UTY Business Plan 2023

3.3.4.2 Jurisdiction of the Government, MOT, and UTY

Articles 7 to 11 of the aforementioned law "On Rail Transport" specify the respective responsibilities of the Council of Ministers, the MOT, and UTY. The Cabinet of Ministers is defined as the body that mainly approves regulations, such as defining development strategies, approving investment projects, and approving fares, while the MOT is defined as the licensing and authorization body in the field of rail transport.

UTY is a railway operator licensed by the MOT, and the following responsibilities are specified in Article 11.

Authorized organization:

- Determines the general directions for the development of public rail transport and ensures the coordination of the activities of the infrastructure operator, public rail transport enterprises and carriers, and other legal entities affiliated with it;
- ensures stable and efficient operation of public rail transport, safety of transportation, and improves the quality of transport services provided;
- carries out information and explanatory work among the general public and users of railway transport on issues of safe operation of railway transport, compliance with fire and environmental safety requirements;
- strengthens the material and technical base, promotes further development of the railway network and increases its capacity, widely introduces progressive technologies and modern management methods;
- attracts investments for the modernization, improvement and development of public rail transport;
- ensures the implementation of measures for mobilization preparation and civil defense in the field of railway transport in the event of natural and man-made emergencies, the introduction of a state of emergency, as well as the introduction of martial law, including the entire period of military operations;
- if necessary, involves railway rolling stock, other equipment of enterprises and organizations, ministries and departments to eliminate the consequences of natural and man-made emergencies, the introduction of a state of emergency, as well as the introduction of martial law, including the entire period of military operations;
- does not allow rolling stock that does not meet regulatory and technical requirements onto public railway tracks;
- does not allow the delivery of rolling stock onto non-public railway tracks that do not meet regulatory and technical requirements;
- gives priority to special military trains for the rapid (operational) implementation of military transportation by rail in the event of natural and man-made emergencies, the introduction of a state of emergency and martial law, including the entire period of military operations;
- promptly notifies the relevant government agencies of the occurrence of natural and man-made

emergencies, transport and other incidents on railway transport, the need to introduce a state of emergency and takes immediate measures to eliminate their consequences;

- within the limits of its authority, organizes and ensures international cooperation in the field of railway transport and the sphere of international transportation of passengers and goods.

Uzbekistan, a landlocked country, is engaged in rail transport between CIS countries, China, Afghanistan, and Europe. The "Railway Transport Council" was established in 1992 to standardize the transportation between CIS countries by rail. The committee has been working on standardization of the transportation between CIS countries by establishing specialized committees on topics such as payment methods, rolling stock operation, information technology, transportation strategy, and safety promotion (including prevention of terrorism).

"Transitioning the pricing of rail and air transport to market principles, attracting private and foreign operators," which clearly aims to open up the market for rail operations.

In addition, Paragraph 56 of the "Uzbekistan Strategy 2030" includes the goal of "Transferring services related to rail transport, construction and management of express roadways, gas and electricity supply to the private sector,". It clearly indicates the policy of opening up infrastructure development to the private sector as well.

In accordance with this policy, the PF-37 Cabinet Decision of February 2024 defined "Tasks that the government (UTY) should do," "Tasks that the private sector should do," and "Free services to be provided to users" in rail transport, although PF-37 lists the items of operation and services in great detail, The PF-37 lists the operations and services in great detail, but can be broadly summarized as shown in Table 3-10.

Table 3-10 Responsibility for the Share of Railway Services as Defined in the PF-37 Cabinet Decision (Excerpts)

Organization	Items	Content
Government (UTY)	Transport Service	Transportation of mail and courier shipments by rail
		Passenger transportation on local routes (except for passenger transportation on high-speed and express trains);
		Passenger transportation on suburban routes.
	Infrastructure	Road management, power supply, signaling & communication, ensuring the operation of a single dispatch center and freight stations for the transportation of passengers (local, suburban routes);
		Road management, power supply, signaling & communication, ensuring the operation of a single dispatch center and freight stations for transporting goods on local routes.
	Locomotive	Providing locomotives on highways for the transportation of goods on local routes
		Providing locomotives on highways for the transportation of passengers (except high-speed trains) on local and suburban routes.
Private Sector	Passenger Transport	Passenger transportation on high-speed trains;
		Passenger transportation on international routes;
		Issuance of travel documents in all directions;
		Foods and ,beverages (takeaway); selling various goods, foods, and drinks at train stations;

Organization	Items	Content
		Transportation of passenger hand luggage; storage of passenger luggage; baggage and cargo transportation
		Advertising service at railway stations and passenger trains;
		Providing various lounges and relaxation services for passengers
	Freight Transport	Providing freight wagons and containers
		International (import, export and transit) cargo transportation.
		Transportation of goods within the country
		Cargo loading and unloading operations from / to freight wagons and containers
		Rental or lease of freight wagons to other operators
		Development and establishment of technical standards for cargoes for which technical standards are not specified in the current regulations
		Maintenance of decentralized (manual) switch crossings by railway forces and means located at the junctions of the branch line;
		Performing shunting work on the loading and unloading tracks of the station
		Cargo collection, delivery, storing and container storage
		Filling out transport documents and custom clearance service
Free Services		Wheelchair service, Use of the mother and child room, medical aid station services and Internet world wide web service in the waiting room
		Providing tea, drinking water, and sugar (white sugar) along the way

Source: the Decree of the President of the Republic of Uzbekistan No. PF-37 dated February 21, 2024

The government responsibilities in passenger transport will focus on local and suburban services, while inter-city and international transport will be opened up to the private sector. In the case of freight transport, the government plans to open up the entire business to the private sector, and to allow the private sector to own freight wagons and containers. The private sector is also expected to take the lead in establishing new technical and management standards. The government has decided that local and suburban lines will be maintained by the national government, but neither the national government nor the private sector has been designated to be in charge of main rail infrastructure maintenance.

Furthermore, in accordance with the Presidential Decree "Additional Measures to Reduce State Participation in the Economy and Promote Privatization" dated March 18, 2022, and Resolution No. 329 "Measures to Fundamentally Reform the Rail Transport Sector of the Republic of Uzbekistan" dated October 10, 2023, the sale of some UTY subsidiaries and assets to private ownership The process is underway.

This series of railroad reforms is called the "Transformation process of UTY" and is currently underway with the support of PwC.

3.3.4.3 UTY's own Budget

The UTY's development budget (including all funding sources) for 2020-2024 is presented in Table 3-11. It has ranged between $250-400 million in the past years. Planned self-funded investments (excluding other donors) for 2025 and beyond are shown in Table 3-12.

Table 3-11 Actual Investment

Year	Amount (Million USD)
2020	349.2
2021	391.31
2022	378.11
2023	382.67
2024	259.23

Source: JICA Study Team

Table 3-12 Investment Plan

Year	Amount (Million USD)
2025	100.2
2026	103.1
2027	90.9
2028	80.3
2029	80.9

Source: JICA Study Team

The sources of the development budget and investment projects are as follows in the 2023 Plan. Note that since this is a plan, it does not correspond to the 2023 actuals mentioned earlier.

Table 3-13 Fund Sources and Investment Projects

Project	Amount (Million USD)	Fund	Amount (Million USD)
New Construction	102.53 (21.86%)	Government	293.23 (62.52%)
Modernization	241.15 (51.41%)	FDI	44.75 (9.54%)
Others	125.35 (26.72%)	Foreign Fund Institution	101.05 (21.54%)
		Reconstruction and Development Fund	10 (2.13%)
		Bank Credit	20 (4.26%)
Total	469.03	Total	469.03

Source: UTY Business Plan 2023

3.3.4.4 Accounting of UTY

UTY Business Plan includes a balance sheet and an income statement. Assets, liabilities, and net assets are UZS 38,243,389 million, 21,282,207 million, and 16,941,172 million, respectively, for the projected 2022. Based on these figures, the equity ratio is 44.3%.

According to the income statement, the estimated pre-tax profit for 2022 is UZS 526 billion.

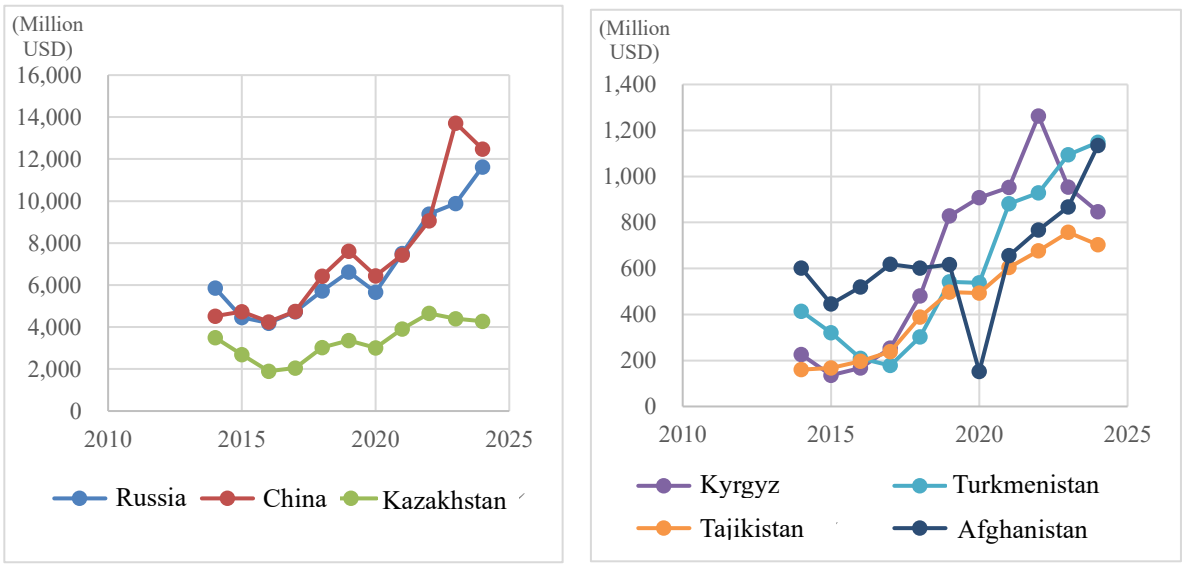
In the past, UTY, like other state-owned enterprises, followed domestic accounting standards and made limited financial disclosures, but the president's mandate to transition to International Financial Reporting Standards (IFRS) and periodic independent audits led to a concrete transition to IFRS in the early 2020s, and by 2023, UTY's financial reporting was largely in IFRS.

3.4 Overview of Target Subsector in Uzbekistan

3.4.1 Current Situation and Issues the Road/Bridge Sector

Uzbekistan's road network extends approximately 142,000 km and is summarized in Table 3-14.

The pavement road ratio is less than 50%, including local roads, and the maintenance capacity of road facilities is still inadequate, including severely damaged pavement sections, even on international roads. The volume of transport by road has reached 90% of the total, and trade volume with Kazakhstan, Tajikistan, Kyrgyzstan, and Turkmenistan has increased since 2018.



Source: NATIONAL STATISTICS COMMITTEE OF THE REPUBLIC OF UZBEKISTAN

Figure 3-4 Trade Volume between Uzbekistan and Neighboring Countries (Exports + Imports)

In addition, the number of fatalities due to traffic accidents is high, and JICA is currently providing technical cooperation in traffic safety. On the other hand, a PPP project to construct two toll roads starting from Tashkent is progressing, and efforts are being made to significantly improve the logistics network centered on the capital city, Tashkent.

Except for the Amu Darya River and the Syr Darya River, Uzbekistan has few major rivers. Most of the bridges are small to medium-sized, and many urban roads have grade-separated crossings with railways. In addition, bridges constructed during the Soviet era are deteriorating rapidly, and nearly 30% of all bridges need to be repaired or replaced.

Table 3-14 Current Situation of Roads and Bridges

Sector	Category	Length/Number	Remarks
Roads /Bridge	International Road	3,992km	International Road (Good): M34, M41, A373, A376, A381 International Road (Needs improvement): M37, M39, A377, A378, A379, A380 Pavement Type: Asphalt 41%, Concrete 2%, Simple Pavement 3%, Gravel 55%
	National Road	39,370km	
	Local Road	102,614km	
	Bridge	7,112 bridges	Condition of Bridge: Good 72%, Needs repair 24%, Needs replacement 4%

Source: JICA Survey Team

The number of bridges managed by CR is approximately 7,112 nationwide. The number of major rivers is small, and many of the bridges are small structures spanning streams and agricultural waterways.

The table shows the evolution of design standards related to bridges. An important perspective in bridge maintenance is the revision of the design load from 20 to 25 tons in the Design Standard for Bridges/Culverts (1997). Bridges to which the earlier standard was applied have inferior load-carrying capacity and durability.

Table 3-15 Changes in Design Standards Related to Bridges

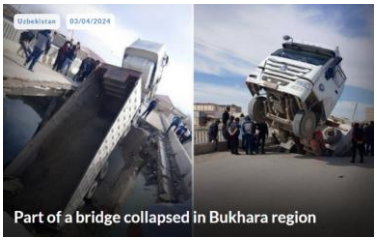
Design Standard	Identification	Year
Loads and Impacts	KMK 2.01.07-96	1996
Foundations of Buildings and Structures	KMK 2.02.01-98	1998
Pile Foundations	ShNK 2.02.03-13	2013
Concrete and Reinforced Concrete Structures	KMK 2.03.01-96	1996
Design Code of Steel Structures	ShNK 2.03.05-13	2013
Corrosion Protection of Building Structures	KMK 2.03.11-96	1996
Design Standard for Railway/Road Bridges/Culverts	CH200-62	1961
Design Standard for Bridges/Culverts	ShNK 2.05.03-84	1984
Design Standard for Bridges/Culverts	ShNK 2.05.03-84*	1991
Design Standard for Bridges/Culverts	KMK 2.05.03-97	1997
Design Standard for Bridges/Culverts	ShNK 2.05.03-12	2012
Design Standard for Bridge/Culvert	ShNK 2.05.03-22	2022

Source: Prepared by JICA Survey Team based on the interview with CR

Table 3-16 Shows the status of bridge collapse incidents that have occurred within Uzbekistan. As indicated in the table, in recent years, a number of bridges have collapsed due to factors such as insufficient load-bearing capacity, aging, flooding, and the impact of overloaded vehicles.

Table 3-16 Recent Examples of Bridge Collapse Incidents (From 2024 to July 2025)

Date of Incident	Location	Road	Description of Incident	Photo
February 2024	Mubarek District, Kashkadarya Region	–	Bridge collapsed while a large trailer was crossingthe .	–
March 31, 2024	Urgut District Samarkand Region	–	Bridge collapsed due to river flooding	–
March 31, 2024	Kitab District, Kashkadarya Region	–	Bridge collapsed due to river flooding	–
April 2, 2024	Jondor District, Bukhara Region	–	Bridge collapsed while a large trailer was crossingthe .	See Figure (a) below
July 14, 2024	Yorqishloq Village, Andijan Region	–	Bridge collapsed due to flood (debris flow)	See Figure (b) below
October 2, 2024	Pskent District, Tashkent Region	National Road 4R19	The bridge collapsed due to the passage of an overloaded vehicle	See Figure (c) below
March 8, 2025	Yangiyo‘l District, Tashkent Region	National Road D022	Partial collapse of the superstructure due to aging, etc.	See Figure (d) below.
May 13, 2025	Angren City, Tashkent Region	International Road A373	Partial collapse of the superstructure due to aging, etc.	See Figure (e) below.



(a) Jondor District,
Bukhara Region





(b) Yorqishloq Village,
Andijan Region



(c) Pskent District,
Tashkent Region



(d) Yangiyo‘l District,
Tashkent Region



(e) Angren City,
Tashkent Region

Source: UZ DAILY, Tashkent Times

Figure 3-5 Situation at the Bridge Collapse Site

3.4.2 Current Situation and Issues in the Road Disaster Sector

Uzbekistan has a diverse natural environment, including flat desert areas that make up about 80% of the country's land, and mountainous areas in the east with peaks reaching heights of up to 4,500 meters. The Tian Shan mountain range in the south is located on the border with Kyrgyzstan and Tajikistan, and the Tian Shan mountain range in Uzbekistan is the highest among neighboring countries. The lowland areas of northern Uzbekistan and southern Kazakhstan contain the vast Kyzyl Kum desert, which occupies most of Uzbekistan. The Fergana Basin, the most fertile area of Uzbekistan, is located in the east of Kyzyl-Kum and is an area of approximately 21,440 km^2 bounded by mountain ranges to the north, south, and east. The western end of the valley is the channel of the Syrdarya River, which flows from southern Kazakhstan through northeastern Uzbekistan to Kyzyl-Kum. The annual precipitation in the Fergana Basin is around 100 to 300 mm, and there are small desert areas in the center of the valley and on the surrounding ridges in the Fergana Basin.

Since the average annual precipitation in Uzbekistan is 100 to 200 mm, the road disaster risk is low in the flat desert areas. On the other hand, mountainous areas, particularly those along the border with Kyrgyz and Tajikistan, are at high risk of slope disasters such as landslides, rockfalls, and debris flows (flash flood) as shown in Figure 3-7 and Figure 3-9. At the Kamchik Pass, located at an altitude of over 2,000 m on the international road A-373 (CAREC-2) between Angren and Khanabad, and at the Takhtaqoracha Pass, located on the international road M-39 between Samarkand and Shahrisabz, falling rocks and landslides have occurred every year and caused casualties and road closure. In particular, the Kamchik Pass plays an important function as a route for exporting automobiles, chemical products, agricultural products, and transporting machinery, equipment, and chemicals. However, there are more than 70 locations with hazardous slopes of rockfall and landslides, and more than 40 locations with

hazardous slopes of avalanches, making the section vulnerable to road disasters.

3.4.2.1 Rockfalls and Slope Failure

On the trunk roads that pass through mountainous areas such as the Kamchik Pass and the Takhtaqoracha Pass, rockfalls and landslides have occurred due to earthquakes and rainfall. These roads include sections close to steep slopes and fragile bedrock slopes, and road closures due to collapsed slopes and casualties due to falling rocks have occurred every year. The CR has carried out countermeasures such as removing soil and rocks after rockfalls and slope failures, cutting work to remove unstable soil and rock masses, and reinforcing slopes with gabions. Although simple measures against rockfalls and slope failures, as mentioned above, have been carried out by the CR, advanced measures against rockfalls have not been carried out.



Rockfall at Takhtaqoracha Pass



Countermeasure (Cutting Work)



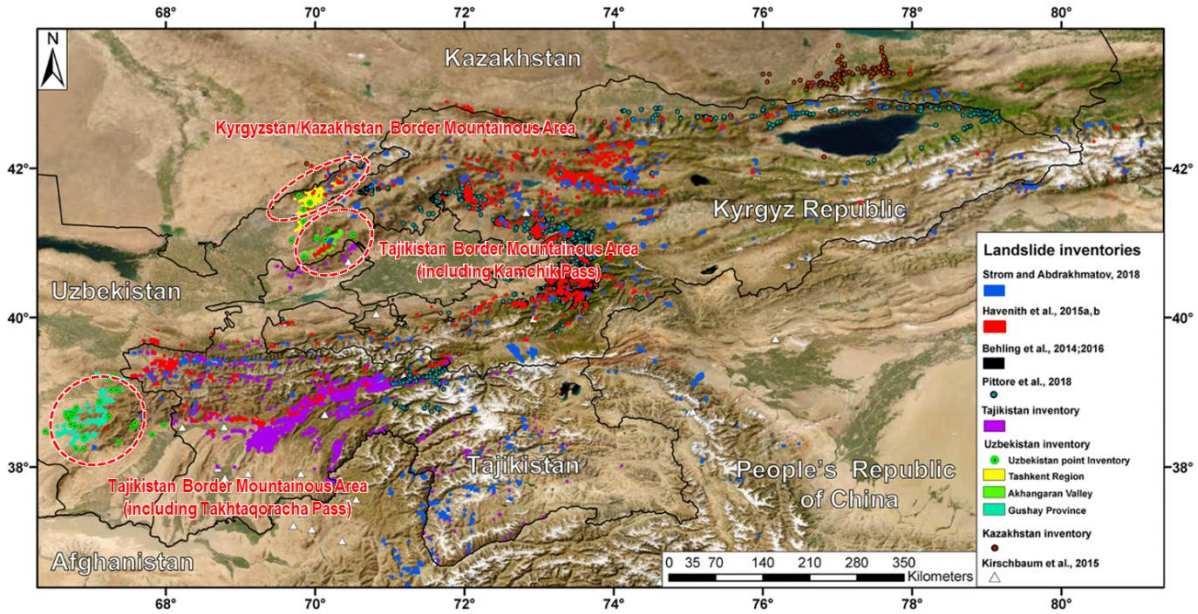
Countermeasure (Gabion)

Source: November 2024, local public broadcaster KUN.UZ website (left) / JICA Survey Team (center/right)

Figure 3-6 Situation of Rockfall and Countermeasures

3.4.2.2 Landslide

Landslides have been observed and confirmed in Uzbekistan in the mountainous areas located north along the northern and northeastern border near Tashkent, and in the mountainous areas south of Samarkand (on the border with Tajikistan), as shown in Figure 3-7. The area around Kamchik Pass, located northeast of Tashkent, is particularly characterized by a complex geological structure consisting of Precambrian-Paleozoic fold belts and the development of multidirectional faults (volcanic conduits and thrust faults associated with volcanic conduits), making it prone to landslides. As a result, numerous landslides have occurred along the route and around the Angren mine. In the past, a landslide caused cracks on the national road near the Angren mine, stretching over 800m. As a result of this disaster, the CR constructed a new bypass road in 2019 to avoid the cracked section of the road. There are many hazardous areas of landslide along international road A-373 at the Kamchik Pass, and the National Landslide Monitoring Service regularly patrols the area and monitors landslides using the Global Positioning System (GPS). In 2014, a large landslide occurred along the A373 at 197.2km post, causing the collapse of the road and railway line. As a result of this disaster, the CR shifted the alignment of the suffered road section towards the mountainside and constructed deep foundation piles (reinforced concrete piles L = 20m) at the bottom part of the landslide. However, apart from this case, other countermeasures against landslides have not been carried out by the CR.



Source: Fourth National Communication of the Republic of Uzbekistan under the UN Framework Convention on Climate Change (2024)

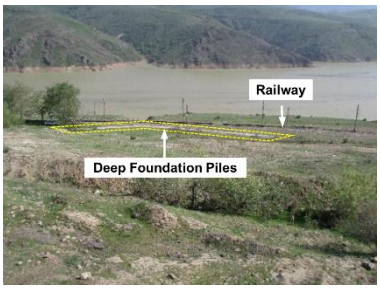
Figure 3-7 Inventory Map on Landslide in Uzbekistan



Cracks due to a Landslide near Angren Mine



Road Collapse due to Landslide



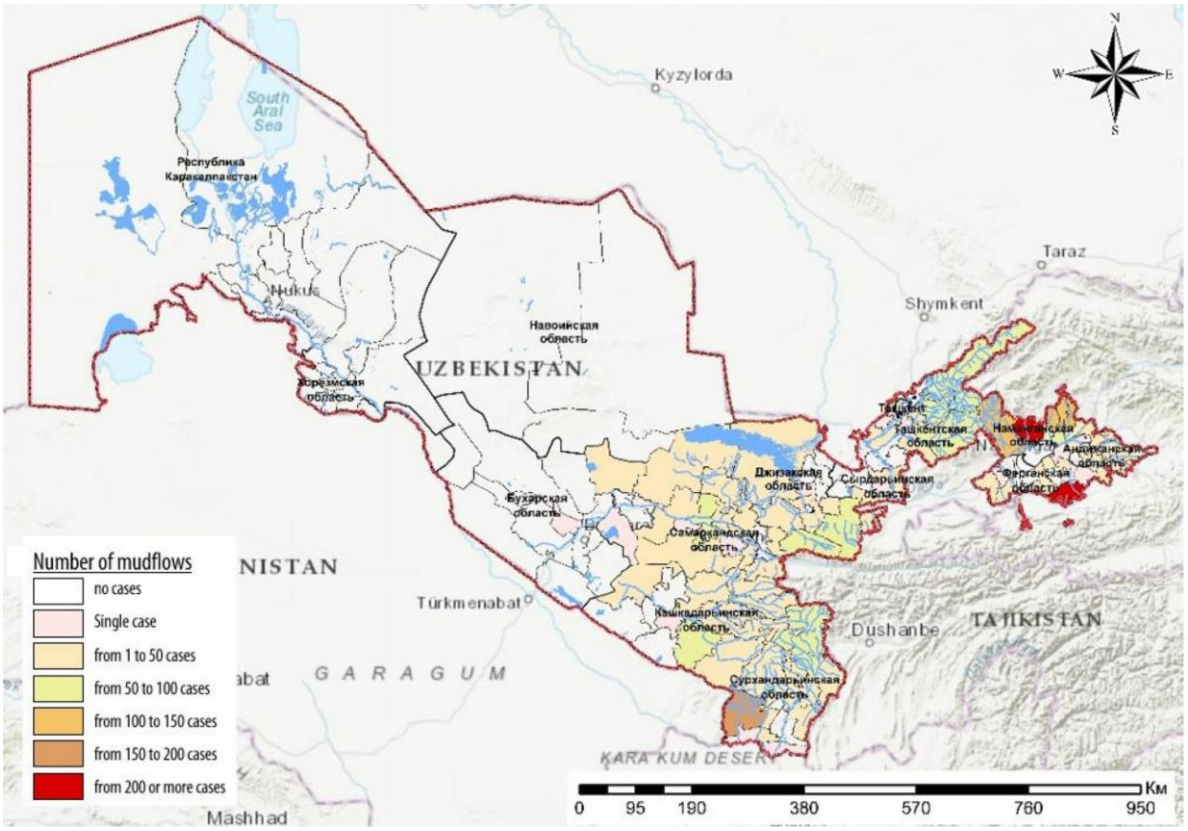
Countermeasure (Deep Foundation Pile)

Source: Report on the Study for Formulation of Capacity Development Project for Landslide Prevention on the Tashkent-Osh Road at Kamchik Pass

Figure 3-8 Situation of Landslide and Countermeasures

3.4.2.3 Debris Flow (Flash Flood)

certain areas that are at high risk of debris flows, primarily in the mountainous regions along the border with Kyrgyz and Tajikistan. Observations of debris flow disasters from 1887 to 2022 have recorded 4,072 cases of debris flow and flood in Uzbekistan (see Figure 3-9). In 1969, a landslide of approximately 1 million m^3 occurred on the international road A373, and a debris flow due to the landslide crossing the road caused the road closure for approximately 10 to 20 days.



Source: Fourth National Communication of the Republic of Uzbekistan under the UN Framework Convention on Climate Change (2024)

Figure 3-9 Hazard Map on Debris Flow in Uzbekistan

3.4.3 Current Situation and Issues in the Railway Sector

UTY's latest transport performance results are presented in Table 3-17. Freight rail transport volume of Japan in FY2023 was 26.52 million tons, while Freight rail transport volume of Russia in FY2023 was 123 million tons. UTY's transport scale is about three times that of Japan. Including transit cargo, UTY's transport scale is about the same as that of Russia. Passenger traffic is approximately 9.83 million, and it is 10.01 million when transit passengers are included. Japan's passenger traffic in FY2023 was approximately 22.6 billion, while that of Russian Railways was approximately 1.96 billion in FY2023. Passenger traffic in UTY is very small compared to freight traffic. The operating kilometer is about 4,840 kilometers, and the electrification rate is about 40%.

In 2023, the number of locomotives in the fleet is 476, including 154 electric locomotives. The number of freight wagons is 21,960, and the number of passenger coaches is 747.

Table 3-17 Transport Results of UTY Year 2023 and 2024

No	Main Factors	Period		Ratio, in%
		2023	2024	
1.	Shipped goods, thou. tons	73,674.8	73,964.3	100.4
2.	Cargo turnover, mln.t.km	27,080.7	27,465.3	101.4
3.	Transported goods, mln tons	109.4	102.7	93.8
4.	Passenger turnover, mln. pass.km	3,903.7	4,072.9	104.3
5.	Sent passengers, thous. passengers	9,626.5	9,829.7	102.1
6.	Number of passengers carried, thous. passengers	9,809.7	10,010.2	102.0
7.	Number, thous.people	71.175	66.263	93.1
8.	Creation of new workplaces	464	0	0.0
10.	Operational length of railways, km	4,839.7	4,839.7	100.0
11.	Including electrified roads, km	1,942.2	1,942.2	100.0

Source: Website of UTY

A major problem of train operation in UTY is the aging of the rolling stock. Table 3-18 shows the age of locomotives and Table 3-19 shows the age of passenger coaches. Although UTY is promoting electrification, the electrification rate is still only 40%. For the train operation of UTY, diesel locomotives are still needed. However, the majority of diesel locomotives are over 30 years old. Furthermore, all of the shunting locomotives that switch coaches and wagons at stations are over 30 years old, and 73% of all locomotives are over 30 years old. In general, it is said that when locomotives exceed 30 years of age, parts supply from the manufacturer ends, and maintenance and repair become difficult. If locomotives are not renewed at this rate, train operations will be disrupted.

Table 3-18 Aging of Locomotive in UTY

Age / Type	Under 10 years	11-20 years	21-30 years	Over 31 years	Total
Electric	76	12	31	35	154
Diesel		10		113	123
Shunting				199	199
Total	76	22	31	347	476
Ratio	16%	5%	7%	73%	

Source: Business Plan of "Uzbekistan Railways" JSC 2023

Table 3-19 Aging of Passenger Wagons in UTY

Age / Type	Under 10 years	11-20 years	21-28 years	Over 28 years	Total
Number	207	40	31	469	747
Ratio	28%	5%	4%	63%	

Source: Business Plan of "Uzbekistan Railways" JSC 2023

3.4.4 Japan's Assistance

The following outlines Japan's support related to the transport sector. From the perspective of connectivity, projects involving customs equipment and border facilities have also been included. The assistance consists primarily of yen loan cooperation and grant aid.

With regard to the "Second Construction Equipment Supply Project," which is particularly relevant to the proposed candidate project, it has been confirmed that the road construction equipment provided in 2004 is still in operation at the Samarkand Road Regional Directorate, a regional body under the CR.

According to staff, the Japanese equipment is extremely durable and has continued to be used with periodic repainting (see Figure 3-10).

Table 3-20 Japan's Assistance in the Transport Sector

No.	Project	Implementation Year	Project Cost	Scheme	Description
1	Capacity Building for Border Liaison Offices and Mobile Inter-Ministerial Teams in Central Asia	2019	743 million JPY	Grant Aid (in cooperation with UN/implemented by UNODC)	Provision of equipment and training for the staff of border liaison offices. Target countries: Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan
2	Economic and Social Development Program	2018	800 million JPY	Grant Aid	Provision of road equipment for infrastructure development and disaster recovery. Target province: 4 local provinces (Syrdarya, Jizzakh, Khorezm, Republic of Karakalpakstan)
3	Establishment of Border Liaison Offices and Strengthening Cross-Border Cooperation against Drugs and Crime in Central Asia	2015	296 million JPY	Grant Aid (in cooperation with UN/implemented by UNODC)	New office establishment, equipment provision, and capacity building for security agency staff. Target countries: Uzbekistan, Kazakhstan, Kyrgyz, Tajikistan
4	Central Asia Border Liaison Office Establishment Plan	2013	141 million JPY	Grant Aid (UNODC)	Establishment of liaison offices at two border points (Kyrgyz-Uzbek and Uzbek-Tajik borders) for stationed officers. Target countries: Uzbekistan, Kyrgyz, Tajikistan
5	Karshi-Termez Railway Electrification Project	2011	18.067 billion JPY	Yen Loan (United)	Electrification of approx. 325 km railway section from Karshi to Termez (mountainous south region), replacing diesel traction with electric traction.
6	Project for the Installation of X-ray Scanning Equipment at the Check Points of Uzbekistan Borders with the Neighboring Countries (Phase II)	2010	360 million JPY	Grant Aid	Provision of fixed-type large cargo X-ray inspection equipment at the Galaba Railway Customs Office in Surkhandarya region (adjacent to the Afghan border).
7	Project for the Installation of X-ray Scanning Equipment at the Check Points of	2009	467 million JPY	Grant Aid	Provision of vehicle-mounted large cargo X-ray inspection equipment for customs offices in Surkhandarya (adjacent to the Afghan border) and

No.	Project	Implementation Year	Project Cost	Scheme	Description
	Uzbekistan Borders with the Neighboring Countries				Tashkent (adjacent to Tajikistan).
8	Project for supply of road construction and maintenance equipment (phase II)	2004	976 million JPY	Grant Aid	Provision of road construction equipment for road improvement for maintenance of the section of Samarkand-Guzar-Termez.
9	Tashguzar-Kumkurgan New Railway Construction Project	2004	16.359 billion JPY	Yen Loan (Tied)	Construction of a new 222 km railway connecting Tashguzar (Kashkadarya province) and Kumkurgan (Surkhandarya province), including rehabilitation of a 31 km existing section.
10	Three Local Airports Modernization Project (Phase 2)	1999	2.871 billion JPY	Yen Loan	Modernization of airports in Samarkand, Bukhara, and Urgench. (Phase 2: Air traffic control equipment development).
11	Project for supply of road construction and maintenance equipment	1997	960 million JPY	Grant Aid	Provision of a total of 56 units of road construction equipment.
12	Railway Passenger Transport Capacity Improvement Project	1996	6.102 billion JPY	Yen Loan	1)Construction of passenger car repair factory (civil works and equipment procurement) 2)Procurement of new passenger cars 3)Procurement of spare parts 4)Consulting services
13	Three Local Airports Modernization Project (Phase 1)	1996	15.526 billion JPY	Yen Loan	Modernization of airports in Samarkand, Bukhara, and Urgench. (Phase 1: Runway and terminal facilities development).

Source: JICA Survey Team



Figure 3-10 Equipment Provided under the “Project for Supply of Road Construction and Maintenance Equipment (Phase II)”

3.4.5 Status of Donor Support in Uzbekistan

3.4.5.1 Road, Bridge/Disaster Prevention

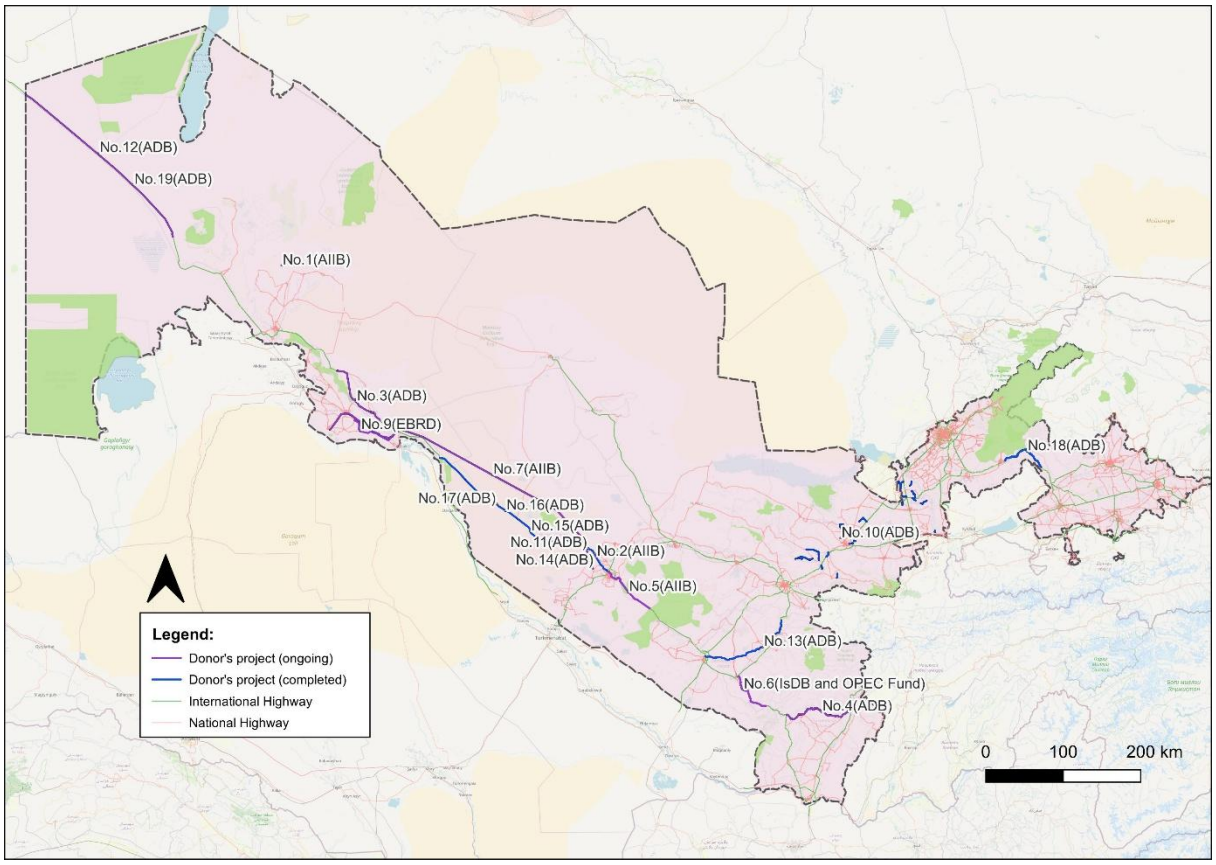
Table 3-21 presents the current projects supported by other international donors, and Figure 3-11 presents the projects location including currently supported and implemented in the past.

Table 3-21 The Current Projects Supported by International Donors
(Roads, Bridges/Disaster Prevention)

No.	Project Name	Period	Donor	Project Cost M USD	Region	Current Status
1	Karakalpakstan and Khorezm Local Roads Network Reconstruction Project	-	AIIB	200	Republic of Karakalpakstan Khorezm Region	Proposed
2	Bukhara Road Network Improvement Project Phase 2	-	AIIB	150	Bukhara region	Proposed
3	Road Modernization Projects Central Asia Regional Economic Cooperation Road Corridor 2 Resilience and Modernization Project Reconstruction project of the 673-698 km section of the highway A-380 "Guzor-Bukhara-Nukus-Beyneu" (cement-concrete coating)	-	ADB	255	Republic of Karakalpakstan	Proposed
4	National Road Development Project (Reconstruction of the 5-70 km section of the 4R-105 Darband-Boysun-Elbayon highway and the 128-174 km section of the 4R-100 Manguzor-Zharqurgan-Bandikhon-Altinsoy-Denov highway (cement-concrete coating))	2023-	ADB	274	Surkhandarya region	Ongoing
5	Bukhara Road Network Improvement Project (Phase I) Reconstruction of the 150-228 km section of the highway A-380 "Guzor-Bukhara-Nukus-Beyneu" (cement-concrete coating)	2022	AIIB	165.5	Bukhara region	Ongoing
6	Reconstruction and Upgrading of M39 Road 1255-1315 km "Tashkent-Termez" highway (with cement-concrete coating)	2022-	IsDB and OPEC Fund	47.2	Kashkadarya region	Ongoing
7	Bukhara-Miskin-Urgench-Khiva Railway Electrification Project	2022	AIIB	108	Bukhara region	Ongoing
8※	Rural Roads Resilience Sector Project Construction of internal roads with cement-concrete coating	2024-	ADB	Included in No.10	Republic of Karakalpakstan	Ongoing
9	Horezm Regional Roads D213 "Reconstruction of the 0-84	2024-	EBRD	4,184.88	Khorezm region	Ongoing

No.	Project Name	Period	Donor	Project Cost M USD	Region	Current Status
	km section of the Urgench-Khonka-Khazorasp-Amu Darya River-A380" highway project					
10	Rural Roads Resilience Sector Project	2023-	ADB	240	Jizzakh region, Sirdaryo region	Ongoing
11	National Road Development Project	2022-	ADB	274	Surkhandarya region	Ongoing
12	Central Asia Regional Economic Cooperation Corridor 2 Karakalpakstan Road (A380 Kungrad to Daut-Ata Section) Project	2020-2022	ADB	274.20	Republic of Karakalpakstan	Completed
13	Kashkadarya Regional Road Project	-2022	ADB	198	Kashkadarya region	Completed
14	Second Central Asia Regional Economic Cooperation Corridor 2 Road Investment Program (Tranche 3) (Reconstruction of 228-315 Km of A380 highway)	2015-2021	ADB	150	Bukhara region	Completed
15	CAREC Corridor 2 Road Investment Program (Tranche 3) (Reconstruction of 315-355 Km of A380 highway)	2012-2018	ADB	100	Bukhara region	Completed
16	CAREC Corridor 2 Road Investment Program (Tranche 2) (Reconstruction of 355-440 Km of A380 highway),	2011-2017	ADB	240	Bukhara region, Khorezm region	Completed
17	CAREC Corridor 2 Road Investment Program (Tranche 1) (Reconstruction of 440-490 Km of A380 highway),	2010-2014	ADB	115	Bukhara region	Completed
18	Second Central Asia Regional Economic Cooperation Corridor 2 Road Investment Program (Tranche 1 and Tranche 2)	-2019	ADB	129.50 39.81	Tashkent region, Namangan region	Completed
19	CAREC Regional Road Project (Reconstruction of road sections of A-380 between Guzar and Dautata border)	2007-2013	ADB	72.3	Nation-wide,	Completed

Note: No.8 is not shown on the location map because the specific route has not yet been determined
Source: JICA Survey Team



Source: JICA Survey Team

Figure 3-11 Location Map of the Projects by International Donors
(Roads, Bridges/Disaster Prevention)

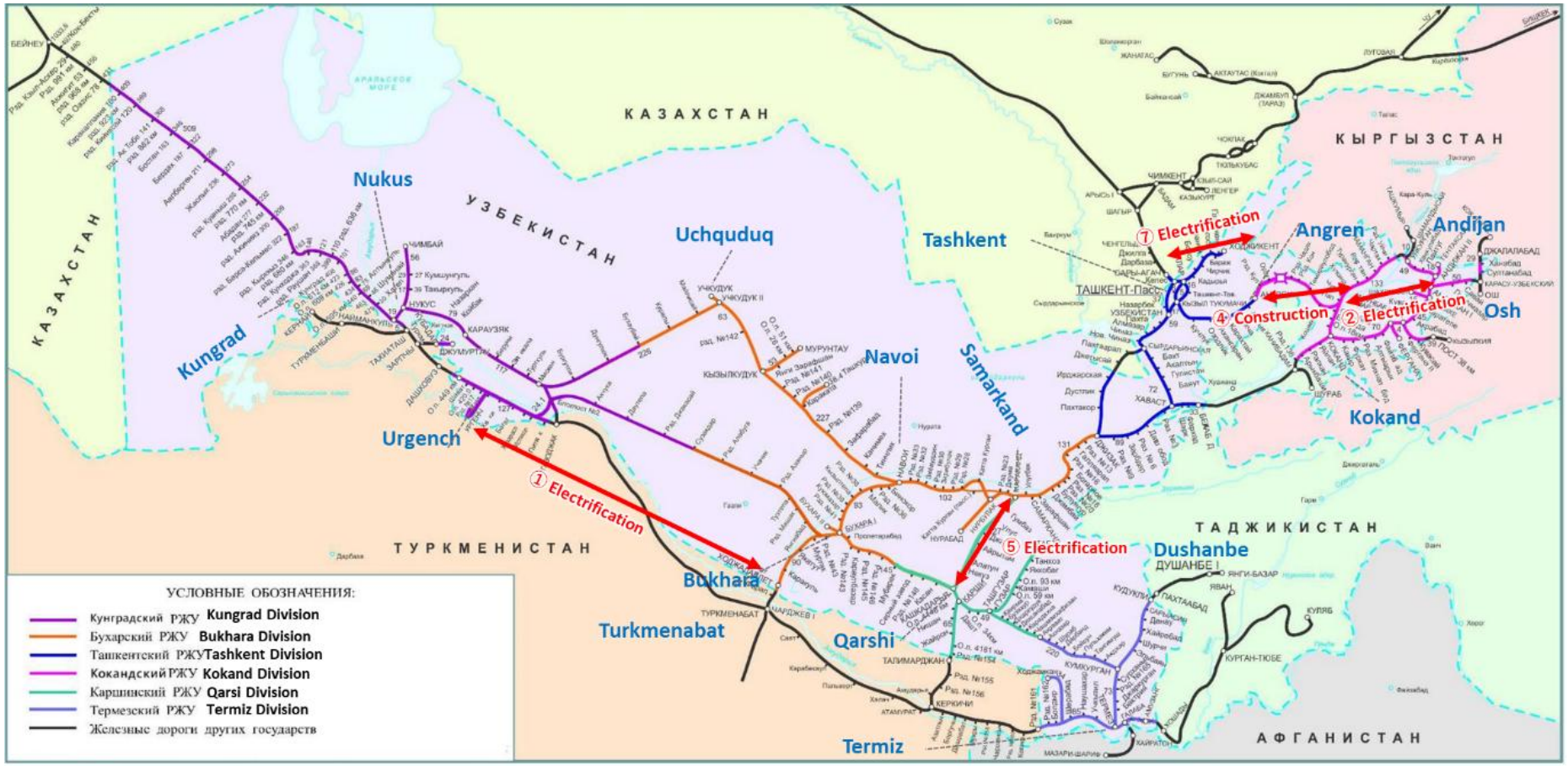
3.4.5.2 Railway

Table 3-22 and Figure 3-12 present the current railway projects supported by other international donors.

Table 3-22 The Projects Currently Supported by International Donors (Railway)

No.	Project Name	Year	Donor	Distance	Project Cost	Information	Completion	Region
1	Central Asia Regional Economic Cooperation Corridor 2 (Bukhara-Miskin-Urgench-Khiva) Railway Electrification Project	2021-2026	AIIB, ADB	465km	USD 445.65 million (AIIB 108 mil., ADB 162 mil., CAREC Gov't. 175.65 mil.)	Electrification of Bukhara-Miskin-Urgench-Khiva section S&T and substation installment enable 250kmph.	Complete	Bukhara, Khiva, Miskin, Urgench
2	Central Asia Regional Economic Cooperation Corridor 2 (Pap-Namangan-Andijan) Railway Electrification Project	2017-2023	ADB	145.1km	USD 177.56 million (ADB 80mil., Gov't of Uzbekistan 97.45 mil.)	Electrification of Pap-Namangan-Andijan section	Complete	Fergana Valley
3	Railway Efficiency Improvement Project	2019-2024	ADB	—	USD 218.3 million (ADB 170 mil., Gov't of Uzbekistan 48.3 mil.)	24 electric locomotives procurement & workshop improvement	Complete	—
4	Pap-Angren Railway Construction	2015-2019	WB, China Exim	124km	USD 1,633.75 million (WB 195 mil, Gov't of Uzbekistan 1,088.75 mil., China Exim 350 mil.)	Construction of Angren-Pap section It enables railway access to Fergana Valley without passing other countries.	Complete	Fergana Valley
5	Central Asia Regional Economic Cooperation Corridor 6 (Marakand-Karshi) Railway Electrification Project	2011-2018	ADB	140km	USD 176 million (ADB 100 mil., Gov't of Uzbekistan 76 mil.)	Electrification of Marakand-Karshi	Complete	Qashqadaryo
6	Locomotive fleet renewal (Acquisition of electric locomotive)	2001-2019	EBRD	—	USD 83 million	Renewal of locomotives to reduce fuel and maintenance costs	Complete	—
7	Tashkent-Angren Electrification Project	2007-2010	KfW and KFAED	114km	EUR 65.67 million	Electrification of Tashkent-Angren	Complete	Tashkent
8	Acquisition of 6 high-speed electric trains (Hyundai Rotem)	2024-	Korea Exim Bank	—	USD 196 million	Procurement of 6 HSR trains.	Ongoing	
9	Modernization of the railway line Angren-Pap-Kokand-Andijan-Khanabad	2020-2025	ADB	441km	USD 164 million (ADB 121 mil., Gov't of Uzbekistan 43 mil.)	S&T equipment, construction of two new substations, CTC upgrades, staff training, etc.	Ongoing	Fergana Valley
10	(Feasibility Study) Construction of high-speed railway Tashkent-Samarkand	2024-	Korea Exim Bank	Approx. 300km	Unknown	New HSR line construction between Tashkent and Samarkand	FS stage	Tashkent, Samarkand

Source: JICA Survey Team



Source: JICA Survey Team

Figure 3-12 Location Map of the Projects by International Donors (Railway)

3.4.6 Status of Public Private Partnership Projects

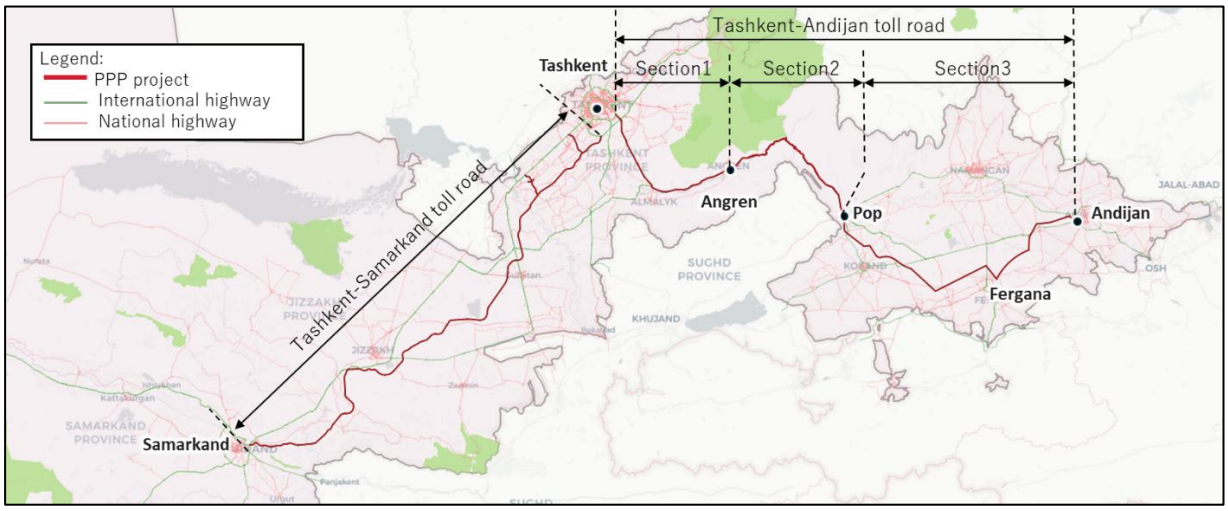
The utilization of PPP in Uzbekistan's transportation sector is included in the "Uzbekistan 2030 Strategy" as an indicator to be achieved by 2030. In the strategy, it is stated that new road construction projects based on PPPs will be implemented, especially the "Tashkent to Samarkand toll road" and the "Tashkent-Andijan toll road," and these projects are currently progressing.

Based on the results of interviews with CR, Table 3-23 shows an overview of the two projects and Figure 3-13 shows the route maps of the two projects. The "Tashkent to Samarkand toll road" is a project to reduce the travel time between Tashkent and Samarkand from the current 6 hours to 4 hours.

Table 3-23 Information on PPP Projects

Project	Lanes	Pavement	Feature	Category	Project Period	Status	Cost
Tashkent-Samarkand toll road	6	Concrete		Expressway	2025-2030	Suspended, failed to negotiate an agreement	
Tashkent-Andijan toll road (3 sections)	6	Concrete	10 mountain tunnels (Kamchik Pass	Expressway	2025-2030	Under tender process (Disaster prevention measures under consideration)	6 billion USD

Source: JICA Survey Team



Source: JICA Survey Team

Figure 3-13 Location Map of PPP Projects

3.4.7 Capacity of Local Contractor

3.4.7.1 Road/Bridge Infrastructure

According to interviews with local private consultants (former CR staff), Uzbekistan has approximately 400 local contractors nationwide. In addition, there are about 60 local consultants nationwide. While large-scale public works on road and bridge projects are directly implemented by CR, private contractors

have recently begun to be selected through bidding to carry out relatively small-scale projects (road length of 2 km or less). Asphalt paving can be constructed without any problems by local contractors, and sufficient quality can be ensured. On the other hand, although concrete paving can be constructed using specialized equipment, the quality and technical capabilities required for asphalt paving have not yet been achieved. Steel bridge construction is difficult for local contractors. For concrete bridges, more than half of all bridges (more than 200 bridges) can be constructed by local contractors. In addition, there are two types of local consultants: those who can only design and those who can supervise construction. Due to the difficulty in obtaining a license for construction supervision business, there are currently only about 10 local consultants that can provide construction supervision.

Table 3-24 Number and Technical Level of Local Contractors and Consultants

Local Company	Numbers	Road		Bridge	
		Asphalt Pavement	Concrete Pavement	Concrete Bridge	Steel Bridge
Local Contractor	approx. 400	Constructible	Not Constructible*	Constructible	Not Constructible*
Local Consultant (Design)	approx. 60	Designable	Designable	Designable	Not Designable
Local Consultant (Design + construction supervision.)	approx. 10	Designable (including construction supervision)	Designable (including construction supervision)	Designable (including construction supervision)	Not Designable

* "Not Constructible" means No company exists that can do the construction, or no company exists that can do the construction with quality.

Source: Prepared by JICA Survey Team based on interview with the local consultant

For concrete bridges, concrete foundations and girders are manufactured in precast. The length of foundations is generally 5m to 7m, and there is a manufacturing plant in each province. Girder lengths are generally up to 30 m, and there is a state-owned manufacturing plant in Tashkent. When bridges are constructed in rural areas, precast girders are transported from Tashkent. Slab and substructure are cast in site, and there were some bridges in poor condition. In addition to the quality of the concrete, many bridges were found to have fragile structures, which may lead to settlement or tilting of the entire bridge due to scouring or overloading.

The Design Institute is responsible for design verification, but the number of bridge engineers is extremely small (according to interviews, there is information that there are only two engineers). Therefore, it is assumed that there is no system in place to provide feedback on design and construction based on the condition of existing bridges, and that bridge technology and engineers in Uzbekistan are inadequate.

3.4.7.2 Railway Infrastructure

The construction of railway infrastructure is mainly carried out by UTY's construction subsidiaries UE "Uztemiryulkurilishmontazh" and UE Trust "Kuprikkurilish" listed in Table 3-9. As for the private

companies, OOO SMP TransFuqaroQurilish has been implementing the construction of a line to Almalyk MMC's plant, any information on other railway construction projects by private companies was not found. China State Construction Engineering Corporation (CSCEC), one of the largest foreign companies in China, has advanced in Uzbekistan. CSCEC also undertakes railway construction in China. However, CSCEC has no record of receiving orders for railway construction in Uzbekistan. In Central Asia, CSCEC has received a contract to construct a light rail line in the city of Astana in neighboring Kazakhstan, but there is no other order in the Central Asian area.

Table 3-4 "National Goals of the Uzbekistan 2030 Strategy" states in "Goal 56" that "railway transportation, construction and management of highways, and services related to gas and electricity supply will be transferred to the private sector." In line with this policy, the sale of 40% of the shares of UE "Uztemiryulkurilishmontazh" to the private sector was announced on the website of Railway Supply magazine on May 16, 2025. The technical level of private contractors in the railway infrastructure construction industry within Uzbekistan is expected to vary depending on which company acquires the shares of the company. For example, if a company without expertise in railway infrastructure construction acquires the shares, the company's technical capabilities will remain unchanged. However, if a foreign company like CSCEC, which has expertise in railway infrastructure construction, acquires the shares, the acquiring company's expertise and technology could be transferred to the company, potentially enhancing its technical capabilities.

3.4.8 Examples of DX Utilization in Data Collection, Design, Construction, and Maintenance Stages

Examples of DX utilization in the road transportation sector in Uzbekistan are presented in Table 3-25.

Table 3-25 Examples of DX Utilization in the Road Transportation Sector in Uzbekistan

Examples of DX Utilization	Period	Related Organizations
Construction of an online database for roads and structures with maintenance and management planning functions	2024.3	MOT CR
Installation of GPS tracking devices on road equipment and vehicles owned by cooperating companies of CR to digitize management	2024-	CR
Deployment of 44 weigh-in-motion (WIM) systems in the Karakorum Highway in Pakistan	2024-2026	MOT CR MEF
Introduction of digitally controlled road signs on expressways	2024-	MOT CR
Digitalization of production facilities (asphalt, concrete, cement, crushed stone, etc.) used by cooperating companies of CR to implement real-time inventory and production management of produced products	2024-	MOT CR
In collaboration with the Asian Development Bank, introduction of ITS on a 100 km section of the A-373 Tashkent-Osh Expressway passing through the Kamchik Pass	2024-2025	CR MIIT

Source: Decree of the President of the Republic of Uzbekistan, PQ-330 dated 10.10.2023

3.5 Development Status of Countries Surrounding Uzbekistan

3.5.1 Economic Cooperation Program in Central Asia

3.5.1.1 CAREC（Central Asia Regional Economic Cooperation）

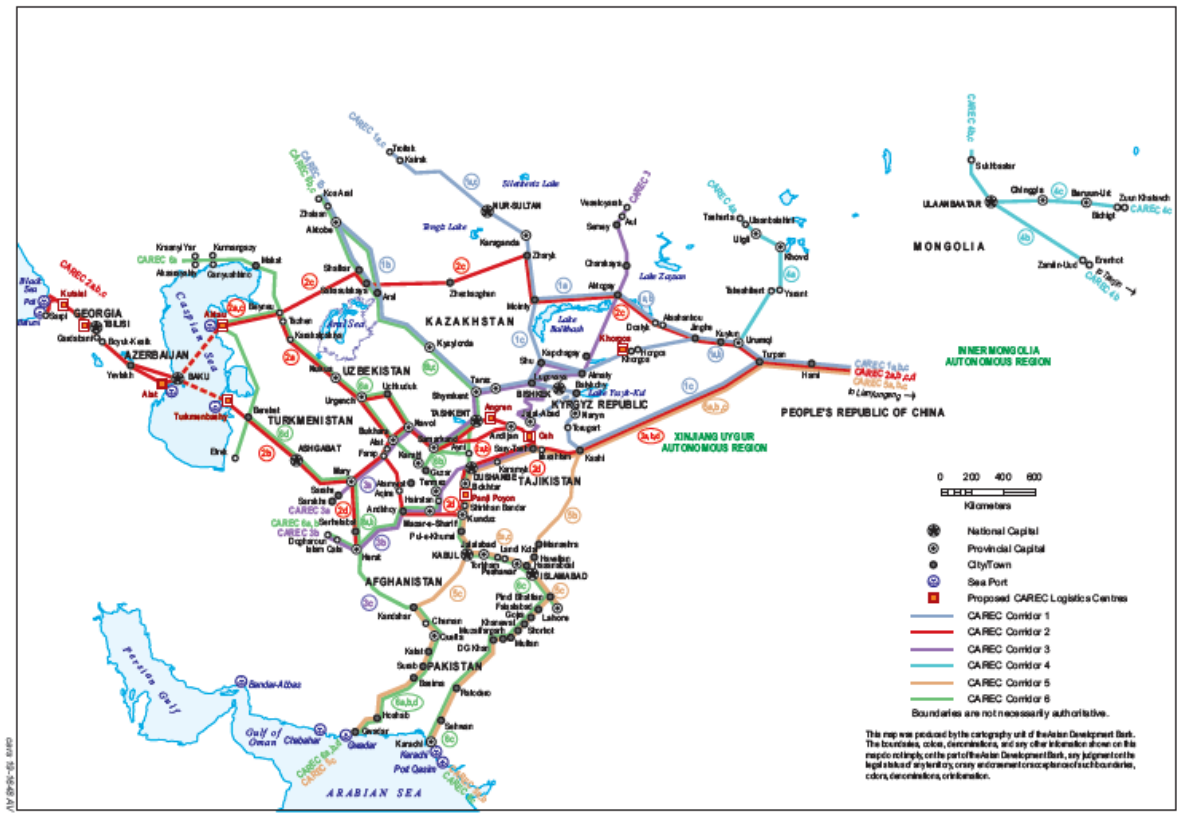
Uzbekistan shares borders with Kazakhstan, the Kyrgyz Republic, Tajikistan, Afghanistan, and Turkmenistan. All these countries are members of the CAREC program, which is led by ADB. This program provides the framework for member countries and development partners to collaborate on economic development aimed at poverty reduction.

The CAREC Transport Strategy 2030, shown in Table 3-26, was developed in 2020, presents the strategic framework built on two main objectives - enhancing connectivity and improving sustainability—along with five strategic transport pillars.

Table 3-26 CAREC Transport Strategic Framework

Transport Pillar	*Connectivity* Objective	*Sustainability* Objective
Cross-Border Transport and Logistics	• Implementation of transport facilitation agreements and conventions and fostering regional transportation dialogue • Improvement of border crossing facilities and procedures • Development of ports and logistics centers facilities and operations to support seamless interoperability of all modes of transport	• Reduced cost of trade, increased trade, and economic growth • Increased efficiency and integrity of public institutions • Improved safety and security
Roads and Road Asset Management	• Sufficient allocation of funds for construction, rehabilitation, and maintenance of roads • Strategic long-term planning for development of the regional and national transport networks to meet growing social, economic, and trade connectivity needs	• Improved economic and social conditions through better connectivity • Strong focus on life-cycle costing and quality for more sustainable infrastructure investments • Financing allocation based on robust analytical and decision support tools, such as the Road Asset Management System (RAMS) • Institutional and procedural reforms for improved national road asset management • Increased private sector participation in road operation and maintenance
Road Safety	• Improved propensity to travel due to increased safety	• Increased road safety leading to reduced life and health impacts, and economic losses.
Railways	• Construction, rehabilitation, modernization and maintenance of railroads • Development of stations and intermodal facilities • Purchase and maintenance of rolling stock suited to emerging needs • Effective commercial and efficient operational practices • Digitalization of railways to improve operational coordination and to support management decision making	• Improved economic and social conditions through reduced service cost and improved quality of service • Sustainable operational practices, inclusive financial and life-cycle cost management, railways assets management and upgrade, staff qualifications • Enhanced safety and security for all users, especially women • Improved environmental sustainability through modal shift, energy efficiency improvements, and fuel switch
Aviation	• Development of airports and public transport linkages • Regional and national policies and agreements to foster open markets competition and cooperation • Improved efficiency of air freight	• Increased economic opportunities through trade, industry, and tourism • Increased efficiency, safety, and security • Improved economic and social conditions through reduced service cost and improved quality of service

Source: CAREC Transport Strategy 2030



Source: CAREC Secretariat.

Source: CAREC-Transport-Strategy-2030

Figure 3-14 CAREC Corridor

Multilateral Development Banks such as the ADB, World Bank, and EBRD have provided loans to CAREC. Through Japan's ODA, support has been provided to Kazakhstan, the Kyrgyz Republic, Tajikistan, and Uzbekistan in the transportation and power sectors.

Uzbekistan joined CAREC in 1997 and has since contributed to promoting regional growth and connectivity. In particular, to overcome the challenges of being a double landlocked country, the country has been engaged in road improvement projects along CAREC Corridors 2, 3, and 6. These efforts have played a significant role in Uzbekistan's economic development and trade expansion. As of 2024, more than USD 12.6 billion has been invested, of which USD 6.1 billion has been allocated to transport projects.



Source: CAREC Home Page (https://cpmm.carecprogram.org/uploads/CAREC-Corridor-Performance-Measurement-Monitoring-Annual-Report-2022.pdf)

Figure 3-15 CARED Corridor in Uzbekistan

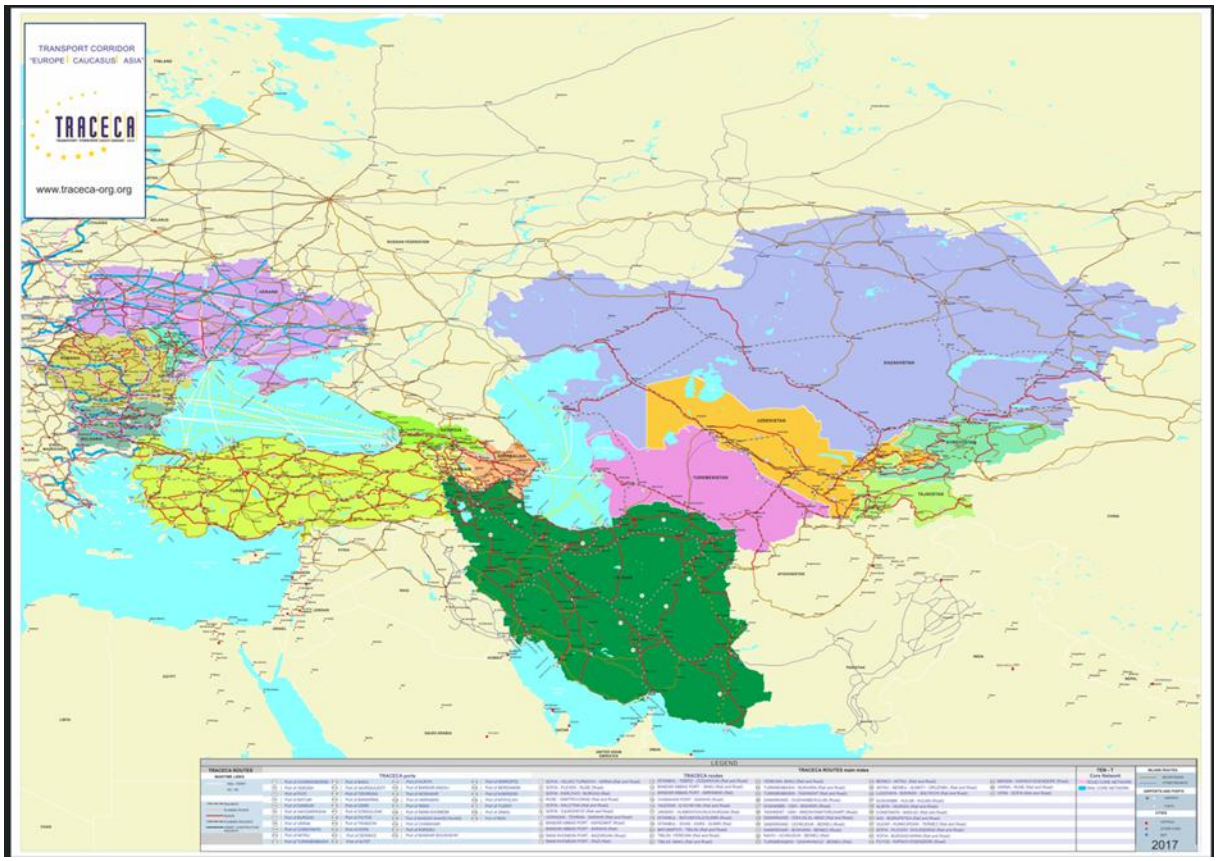
3.5.1.2 TRACECA (Transport Corridor Europe-Caucasus-Asia)

The TRACECA Program originated from a conference held in Brussels in May 1993, where the development of a transport corridor stretching from Europe across the Black Sea, the Caucasus, and the Caspian Sea to the Central Asian countries was proposed. The conference was attended by trade and transport ministers from Armenia, Azerbaijan, Georgia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan, who adopted the Brussels Declaration, agreeing on technical assistance initiated by the European Union (EU).

Currently, 14 countries are members of TRACECA, including the original 8 countries plus Bulgaria, Iran, Romania, Turkey, Ukraine, and Moldova. Uzbekistan, located at the heart of Central Asia, plays a central role in TRACECA and is considered a key land transport hub connecting Europe and Asia.

Meetings between representatives of TRACECA and CAREC programs have been held, and their cooperation is steadily being strengthened. Although Japan is not a member of either TRACECA nor CAREC, Uzbekistan is a member of both. The objectives of the two programs are aligned in terms of developing corridors that connect Europe and Asia, as well as promoting regional integration and economic development.

Given that Japan is a member of the Asian Development Bank (ADB), which leads the CAREC program, Japan's engagement in the development of Uzbekistan and the broader Central Asian region should align with the goals and direction of these two programs.



Source: TRACECA web page URL: (MAP_TRACECA_ROUTES_10_09_2017_300DPI.png (9137×6465)

Figure 3-16 TRACECA Corridors

3.5.2 Republic of Kazakhstan

3.5.2.1 Higher-Level Plan (The National Development Plan of the Republic of Kazakhstan until 2029) and The National Infrastructure Plan until 2029

The most recent higher-level plan in Kazakhstan is the National Development Plan of the Republic of Kazakhstan until 2029, which was approved in July 2024. Regarding the transport sector, the plan states that the promotion of transportation and logistics will progress in tandem with the development of agriculture, digitalization, and tourism. In the same year, the National Infrastructure Plan until 2029 was also approved, identifying the promotion of road construction as one of its priority areas.

3.5.2.2 Current Development by Major Donors

In Kazakhstan, the transport sector is supported by the Government of Japan (JICA), as well as by ADB, the World Bank (WB), the EBRD, the IsDB, and the AIIB. The support provided by the major donors is outlined below.

(1) Government of Japan (JICA)

The Government of Japan has been supporting loan projects in the transport sector. The list of projects is shown below.

Table 3-27 Japan's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (100 million JPY)
1	CAREC Transport Corridor（Zhambyl Oblast）Improvement Project	Yen Loan	Completed	2010	63.61
2	Western Kazakhstan Road Network Rehabilitation Project	Yen Loan	Completed	2000	165.39
3	Astana Airport Reconstruction Project	Yen Loan	Completed	1998	221.22
4	Irtysh River Bridge Construction Project	Yen Loan	Completed	1997	215.30
5	Railway Transport Capacity Development Project	Yen Loan	Completed	1995	72.36

Source: Prepared by the JICA Study Team based on information from the JICA website

(2) Asian Development Bank (ADB)

According to the 'Asian Development Bank and Kazakhstan: Fact Sheet', as of March 2025, ADB's cumulative support for the transport sector amounts to USD 2,475.45 million, primarily through sovereign loans. The total number of projects stands at 34, including road and international corridor rehabilitation, and design support. ADB focuses particularly on CAREC corridors, aiming to strengthen regional and international corridor connectivity, construct freight bypass roads around urban areas, introduce PPP, and promote climate-resilient designs.

In addition, ADB emphasizes the development of local roads to reduce infrastructure disparities between urban and rural areas. ADB positions Kazakhstan as a key hub in the CAREC corridors, supporting infrastructure integration, trade promotion, and economic diversification. Below is a list of ADB transport sector projects.

Table 3-28 ADB's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Road Maintenance Sustainability Project	Loan	Proposed	-	187
2	Central Asia Regional Economic Cooperation (CAREC) Corridors 3 and 6 Turkistan Oblast Highway (Saryagash Bypass) Project	Loan	Proposed	-	395
3	Innovative Solutions for Road Maintenance Sustainability Project	Loan	Proposed	-	30
4	Central Asia Regional Economic Cooperation Corridors 1, 2, and 6 Connector Road (Kyzylorda-Zhezkazgan) Reconstruction Project	Loan | Technical Assistance	On-going	2024	292
5	Central Asia Regional Economic Cooperation Corridors 1 and 6 Connector Road (Aktobe-Kandyagash) Reconstruction Project	Loan	On-going	2019	167

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
6	CAREC Corridors 1 and 6 Connector Road (Aktobe-Makat) Reconstruction Project	Loan	Completed	2016	240
7	CAREC Corridor 2 (Mangystau Oblast Section) Investment Program - Tranche 2	Loan	Completed	2012	371
8	CAREC Corridor 3 (Shymkent-Tashkent Section) Road Improvement Project	Loan	Completed	2012	85
9	CAREC Transport Corridor 1 (Zhambyl Oblast Section) Investment Program - Tranche 4	Loan	Completed	2011	112
10	CAREC Corridor 1 (Taraz Bypass) Project	Loan	Completed	2011	85
11	CAREC Transport Corridor 1 (Zhambyl Oblast Section) Investment Program - Tranche 3	Loan	Completed	2010	173
12	CAREC Corridor 2 (Mangystau Oblast Sections) Investment Program - Tranche 1	Loan	Completed	2010	283
13	CAREC Transport Corridor 1 (Zhambyl Oblast Section) Investment Program - Tranche 2	Loan	Completed	2009	187
14	CAREC Transport Corridor 1 (Zhambyl Oblast Section) Investment Program - Tranche 1	Loan	Completed	2008	225
15	Almaty-Bishkek Regional Road Rehabilitation	Loan	Completed	2000	52

Source: Prepared by the JICA Study Team based on information from the ADB website

(3) World Bank (WB)

Although the World Bank (WB) had limited involvement in Kazakhstan's transport sector in recent years, in November 2024, the Board approved its first co-financing road rehabilitation project with AIIB. The project overview is as follows.

Table 3-29 The Project Overview

Project Name	TRACE（Transport Resilience and Connectivity Enhancement Project）
Section / Length	Jezkazgan–Karagandy section, approx. 498 km (part of the Caspian Sea route) The purpose of rehabilitating this section is to strengthen the connectivity and resilience of the Caspian Sea route.
Implementation Organization	JSC "National Company "KazAvtoZhol"
Expected Completion Date	2032 (plan)
Loan Amount	WB: USD 650 million AIIB: USD 650 million Government of Kazakhstan: USD 229 million

Source: Based on the TRACE approval project document

Other transport projects by the World Bank are shown below.

Table 3-30 WB's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Almaty Railway Bypass（IFC）	Loan	Pending Approval	(2025)	50
2	South West Roads Project: Western Europe - Western China international transit corridor (CAREC-1b & 6b) Project	Loan	Completed	2009	2,125
3	East-West Roads Project (Almaty – Khorgos Section): Western Europe-Western Europe-Western China International Transit Corridor (CAREC 1b) Project	Loan	Completed	2009	1,068

*Scheduled for approval in 2025. A loan of USD 50 million is planned from IFC, and support of USD 254 million is under consideration from other donors.

Source: Prepared by the JICA Study Team based on information from the WB website

(4) Other Donors

Regarding other donors, support is being provided by EBRD, IsDB, and AIIB, all in the form of loan projects. The project list is presented below.

Table 3-31 Assistance by Other Donors in the Transport Sector

No.	Project	Donor	Scheme	Current Status	Approval Year	Project Cost
1	Reconstruction of M-32: Aktobe - Karabutak-Ulgaisyn	AIIB	Loan	Proposed	2025	450 Mil USD
2	Almaty Railway Bypass	AIIB	Loan	Approved	2025	150 Mil USD
3	Aktobe Regional Roads	EBRD	Loan	Ongoing	2025	232.6 Bil KZT
4	Kyzylorda - Zhezkazgan Road Reconstruction (A17)	EBRD	Loan	Ongoing	2025	96.9 Bil KZT
5	Kyzylorda Bypass Road	IsDB	Loan	Ongoing	2024	85 Mil USD
6	BAKAD – Big Almaty Ring Road	EBRD	Loan	Ongoing	2020	135(585*) Mil USD
7	Co-financing with EBRD: BAKAD	IsDB	Loan	Ongoing	2020	100 M USD
8	Co-financing with ADB: CAREC Transport Corridor 1 (Zhambyl Oblast Section) Investment Program	IsDB	Loan	Completed	2010	414 M USD

* The total project cost amounts to USD 585 million, including additional loans of USD 100 million from the Bank of China and USD 25 million from PGGM.

Source: Prepared by the JICA Study Team based on information from the EBRD, IsDB, and AIIB websites.

The following shows the project sites in the transport sector by each donor.



The number in the 'Alphabet–Number' format corresponds to the project number in Table 3-27 - Table 3-31.

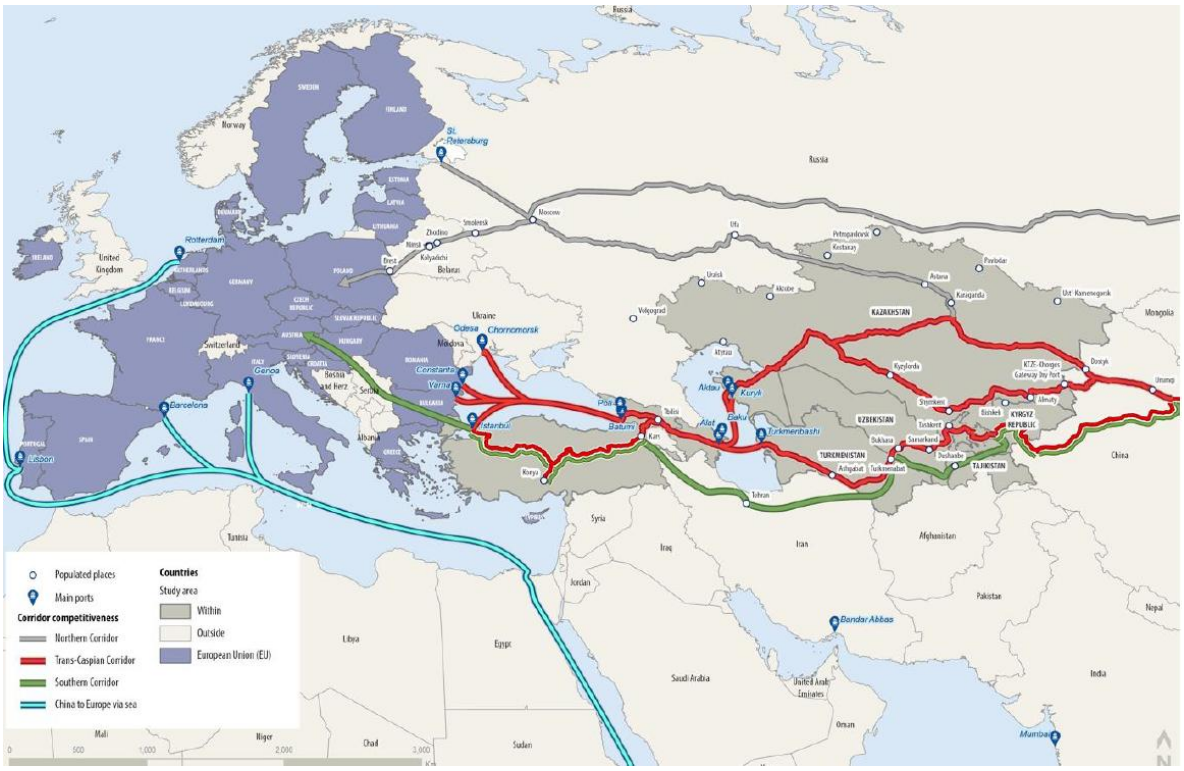
Source: JICA Survey Team

Figure 3-17 Location Map of the Transport Projects by Each Donor in Kazakhstan

3.5.2.3 Relation to the Trans-Caspian Corridors (Middle Corridor)

Following the economic sanctions imposed by major developed countries on Russia in response to its invasion of Ukraine in February 2022, international attention has increased on the Trans-Caspian Corridors—especially the Middle Corridor. Traditionally, logistics between Asia and Europe primarily relied on routes passing through Russia. However, there is growing development of multimodal transport routes (rail, road, maritime, etc.) connecting Central Asia and the Caucasus to Europe, bypassing Russia.

This route aligns with China's Belt and Road Initiative (BRI), and the Shanghai Cooperation Organization (SCO) has historically supported railway network development between China and Central Asia. Simultaneously, the European Union (EU) has promoted the Transport Corridor Europe-Caucasus-Asia (Transport Corridor Europe Caucasus Asia) program to develop international corridors across Central Asia and the Caucasus.



Source: Sustainable transport connections between Europe and Central Asia

Figure 3-18 Trans-Caspian Corridors

The development status of the Trans-Caspian Corridors is summarized below.

Table 3-32 The Development Status of the Trans-Caspian Corridors

No	Item	Details	Source
1	Section (Middle Corridor) *Focus on Central Asia and the Caucasus	Horgos (China) – Almaty (Kazakhstan) – Shymkent (Kazakhstan) – Aktau Port (Kazakhstan) – Caspian Sea – Baku (Azerbaijan) – Poti Port (Georgia) – Black Sea – to Turkey and Europe ・ Mainly multimodal transport (rail and maritime), with some road transport ・ Part of China's Belt and Road Initiative ・ Linked to the TRACECA program corridor	EBRD Report（2023）
2	Current Logistics Status	・ As of April 2025, the TIR* cross-border road route from Shenyang through Kazakhstan to Uzbekistan started operation (approx. 10 days required) *TIR = UN-approved custom system enabling cross-border truck transport without transshipment, reducing time and cost. ・ Currently, it remains more time and high cost than Russian routes.	JETRO
3	Logistics Hubs (Only those in Central Asia and the Caucasus)	・ Dostyk (Kazakhstan) / Alashankou (China), Altynkol (Kazakhstan) / Khorgos (China): Transshipment points for China-Kazakhstan rail, Khorgos Gateway dry port in operation ・ Aktau Port (Kazakhstan): Japan to provide customs equipment through grant aid ・ Baku (Azerbaijan): Rail connections to port completed ・ Poti Port (Georgia): Japan to provide customs equipment through grant aid	JETRO
4	Infrastructure Development	・ In Nov. 2024, WB approved TRACE as the first co-financing with AIIB in Kazakhstan, including road upgrades and flood prevention between Jezkazgan–	WB

No	Item	Details	Source
		Karagandy (Total USD 1.35 billion) ・ In June 2024, China, Uzbekistan, and the Kyrgyz Republic signed an intergovernmental agreement on CKU Railway (approximately 500 km; Kashgar–Osh–Andijan; total investment USD 5 billion) ・ In June 2024, Hyundai Motor Group and UTY signed a contract for high-speed 42 KTX (Korea Train Express) wagons for Tashkent-Bukhara (590 km), the scheduled Bukhara-Khiva (430 km), and Miskin-Nukus (196 km). (applox USD195.7 million) ・ In May 2024, the Anaklia Deep-Sea Port (Georgia) project was awarded to the China-Singapore consortium ・ In April 2025, the EU–Central Asia Summit pledged €3 billion for transport infrastructure and mining investment ・ In March 2024, BTK (Baku–Tbilisi–Kars) railway modernization was completed, increasing 5times transport capacity from 1million tons. ・ In Jan. 2024, the EU announced €10 billion investment in rail and port infrastructure in Central Asia and the Caucasus	The Nihon Keizai Shimbun James Town Foundation JETRO JETRO
	Priority Infrastructure Development between Kazakhstan and Uzbekistan *all is listed as a mid-term plan)	・ Road construction of a direct 140 km route between Kyzylorda and Uchquduq to shorten the current indirect 1,200 km route, with BCP (Border crossing point) development ・ Railway upgrade between Beyneu and Nukus: Modernization of 75 km of track near the Uzbekistan-Kazakhstan border to improve transportation of logistics and passengers.	EBRD report（2023）
5	Future Potential	・ The route can serve as an alternative to current Russia routes, establishing a stable logistics connection from Europe to Central and East Asia ・ Corridor development must be accompanied by both infrastructure and institutional reforms (e.g., customs modernization), leading to substantial domestic and regional economic growth.	ADB institute report
6	Challenges	・ A large number of transit countries (China, Kazakhstan, Azerbaijan, Georgia, etc.), requiring multimodal transfers, could cause delays and increased cost. Different regulations and procedures create complex operations ・ Undeveloped rail infrastructure network, aging lines, and wagon shortages ・ Bottlenecks at the China–Kazakhstan border (especially during holidays) → BCPs under development (private sector investment) ・ Caspian maritime transport is affected by weather, lacking stability. ・ Track gauge differences between China and Kazakhstan → time-consuming bogie exchanges required → potential for introducing China's variable-gauge trains. ・ Some sections of the road are single-lane (in the Aktobe Region, Kazakhstan), which may cause constraints in logistics capacity if the logistics volume increases.	The Nihon Keizai Shimbun EY Global MLIT Railway-pressnet.com Railway-pressnet.com
7	Japan's Activities	・ Japan's Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is conducting demonstration surveys on the route: Japan–China–Kazakhstan–Azerbaijan–Georgia–Europe ・ Since around 2022, Japanese logistics companies have proposed the use of the Caspian route (in contrast to unstable Suez Canal or Cape of Good Hope alternatives).	MLIT The Nihon Keizai Shimbun



Direct trains between China and Kazakhstan require bogie exchange near the border due to different rail gauges.
Source : Railway-pressnet.com

Figure 3-19 Direct Train between China and Kazakhstan

3.5.3 Kyrgyz Republic

3.5.3.1 High-level Plan

Kyrgyzstan has developed the long-term National Development Strategy of the Kyrgyz Republic for 2018-2040 as its high-level development plan. Key initiatives in the transport sector are outlined as follows.

Table 3-33 Key Initiatives in the Transport Sector

Measure	Details
Freedom of Transportation and Elimination of Isolation	• Establishment of a north–south railway network • Resolving the issue of disconnected transport networks
Strengthening International Connectivity	• Establishment of an international freight corridor (China–Kyrgyz–Uzbekistan)
Transport Infrastructure Development	• Construction/rehabilitation of 550 km of roads per year (including 200 km of local roads) • Development of a high-quality international and domestic road network
Integration of Multimodal Transport	• Development of logistics centers and establishment of an intermodal system (rail–road–air integration)
PPP-Based Development	• Active introduction of public-private partnerships (PPPs) for road, railway, and infrastructure development
Transition to Environmentally Friendly Transport	• Rail electrification and promotion of electric vehicles
Hub Development for Air Cargo	• Positioning Manas Airport as a hub for transit cargo between Europe and Asia
Utilization of Unmanned Aviation and Satellite Technology	• Application of drones and satellites in agriculture, tourism, and border management • Development of national-level digital infrastructure
Securing Road Maintenance Budget	• Trial implementation of a toll road system to secure budgets for maintenance and equipment procurement
Utilization of Local Resources and Labor	• Use of domestic resources (e.g., sand, stone) and local labor for road construction

Specific projects include the rehabilitation of the OBI (Osh–Batken–Isfana) Road and the planned construction of the CKU Railway.

3.5.3.2 Current Development by Major Donors

The main donors supporting the transport sector in Kyrgyzstan include the Government of Japan (JICA), ADB, WB, EBRD, and China. The support provided by key donors is as follows.

(1) Government of Japan (JICA)

Japan's assistance in the transport sector was a wide range of activities, such as grant aid for bridge replacement, avalanche countermeasures, road maintenance, and airport equipment, technical cooperation for road/bridge/tunnel maintenance and rehabilitation, and the Japanese ODA Loan for road rehabilitation. The project list is presented below.

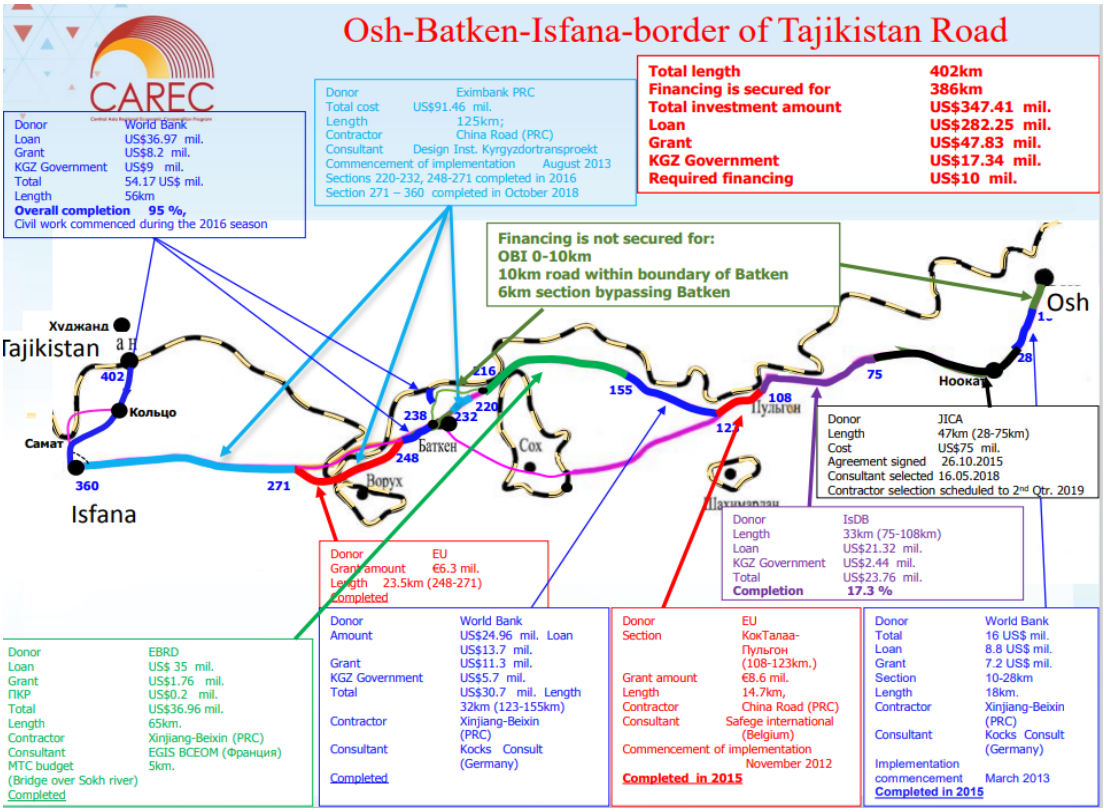
Table 3-34 Japan's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year *	Project Cost (100 million JPY)
1	The Project for the Improvement of Equipment for Road Maintenance and Pavement in Batken	Grant Aid	Completed	2023	7
2	The Project for the Protection from Ground Blizzard on Bishkek-Osh Road	Grant Aid	Completed	2021	10.33
3	The Project for the Reconstruction of the Urmaral River Bridge on the Talas-Taraz Road	Grant Aid	Completed	2019	17.85
4	The Project for Avalanche Protection on Bishkek-Osh Road	Grant Aid	Completed	2017	42.88
5	The Project for Improvement of Workshops for Road Maintenance Equipment	Grant Aid	Completed	2017	4.41
6	Project for Capacity Development for Road Disaster Prevention Management	Technical Cooperation	Completed	2016～2019	-
7	International Main Roads Improvement Project	Yen Loan	Completed	2015	119.15
8	The Project for the Improvement of Equipment at the Manas International Airport	Grant Aid	Completed	2015	16.3
9	The Project for Improvement of the Equipment for Road Maintenance in Osh, Jalal-Abad, and Talas Oblasts	Grant Aid	Completed	2014	24.91
10	The Project for Reconstruction of Kok-Art River Bridge on the Bishkek-Osh Road	Grant Aid	Completed	2013	11.96
11	The Project for Capacity Development for Maintenance Management of Bridges and Tunnels	Technical Cooperation	Completed	2013～2016	-
12	The Study on Improvement of Urban Transportation in Bishkek City	Technical Cooperation	Completed	2011～2013	-

No.	Project	Scheme	Current Status	Approval Year *	Project Cost (100 million JPY)
13	The Project for Improvement of the Equipment for Road Maintenance in Issyk-Kul and Chui Oblasts	Grant Aid	Completed	2010	9.74
14	The Project for Reconstruction of Bridges in Chui Oblast	Grant Aid	Completed	2009	6.35
15	The Project for the Capacity Development of Road Maintenance in the Kyrgyz Republic	Technical Cooperation	Completed	2008～2011	-

**For technical cooperation, the project duration is indicated.*
Source: Prepared by the JICA Study Team based on information from the JICA website

In southern Kyrgyzstan's Osh region, which borders Uzbekistan and Tajikistan, Japan is supporting the development of the OBI road. This includes rehabilitation of certain sections under the "International Main Roads Improvement Project " (Yen Loan) and implementation of disaster prevention measures on the Bishkek – Osh route.



Source: CAREC Corridors Implementation Progress and Priority Actions 2020-2030 (2019)
(Currently subject to change)

Figure 3-20 OBI Road Rehabilitation

(2) Asian Development Bank (ADB)

According to the Kyrgyz Country Partnership Strategy (2023–2027) by the ADB, the overall policy in

the transport sector focuses on improving access to domestic and international markets, promoting social inclusion, encouraging tourism, and reducing trade costs through the development of transport infrastructure and logistics. Specifically, in the road sector, the focus is on rehabilitation and maintenance of roads and in the rail sector, institutional reforms are identified as a prerequisite before infrastructure development. The Almaty–Bishkek road, which connects Kyrgyz with Kazakhstan, is positioned as a strategically important route for promoting tourism and trade. Kyrgyzstan is also expected to strengthen its role as a transit country connecting China and Europe. Infrastructure support is based on collaboration with the CAREC Program, and design standards will account for climate resilience, including flood, inundation, and erosion countermeasures. The project list is presented below.

Table 3-35 ADB's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Almaty-Bishkek Economic Corridor Regional Improvement of Border Services Project	Grant / Loan	Proposed		37
2	Issyk-Kul Ring Road Improvement Project (Barskoon-Karakol Section)	Grant / Loan	Approved	2024	110
3	Central Asia Regional Economic Cooperation Corridors 1 and 3 Connector Road Project	Grant / Loan	Ongoing	2015	176
4	CAREC Transport Corridor I (Bishkek-Torugart Road) Project 3 - Additional Financing	Grant / Loan	Completed	2014	15
5	Central Asia Regional Economic Cooperation Corridor 3 (Bishkek-Osh Road) Improvement Project, Phase 4	Grant / Loan	Completed	2013	100
6	CAREC Transport Corridor I (Bishkek-Torugart Road) Project 3	Loan	Completed	2011	55
7	CAREC Regional Road Corridor Improvement Project (Supplementary)	Loan	Completed	2010	23
8	CAREC Transport Corridor I (Bishkek-Torugart Road) Project 2	Grant / Loan	Completed	2009	50
9	CAREC Transport Corridor 1 (Bishkek-Torugart Road) Project 1	Grant	Completed	2008	20
10	Southern Transport Corridor Road Rehabilitation Project	Loan / Technical Assistance	Completed	2004	34
11	Third Road Rehabilitation	Loan	Completed	2001	40
12	Almaty-Bishkek Regional Road Rehabilitation	Loan / Technical Assistance	Completed	2000	5

Source: Prepared by the JICA Study Team based on information from the ADB website

(3) World Bank (WB)

According to the Kyrgyz Country Partnership Framework (2024–2028), the objective of transport infrastructure development is to improve trade and market access through enhanced regional connectivity. WB's support for the transport sector is premised on coordination with the Central Asia Regional Links Program (CARs), and the project modalities are all based on a combination of loan and grant assistance. The project list is presented below.

Table 3-36 WB's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Third Phase of the Central Asia Regional Links Program (CARs-3)	Loan/ Grant	Completed	2018	55
2	Central Asia Road Links (CARs-1)	Loan / Grant	Completed	2014	45
3	National Road Rehabilitation (Osh-Batken-Isfana)	Loan / Grant	Completed	2010	10

Source: Prepared by the JICA Study Team based on information from the WB website

(4) Other Donors

Regarding other donors, support is provided by institutions such as EBRD, IsDB, the Export–Import Bank of China, and EBRD. The projects are either loan-based or a combination of loan and grant. The list of these projects is presented below.

Table 3-37 Assistance by Other Donors in the Transport Sector

No.	Project	Donor	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Osh Electric Public Transport	EBRD	Loan	Ongoing	2024	14.7
2	Issyk-Kul Ring Road Improvement Project	EBRD	Loan	Ongoing	2022	44.2
3	KTJ climate resilient rail infra	EBRD	Loan + Grants	Ongoing	2022	8
4	Reconstruction of the Issyk-Kul Ring Road Project*2	ACG(*2)	Loans (co-financing)	Ongoing	2021	128
5	Suusamyr-Talas-Taraz Road Reconstruction - Phase IV (km 104.6-197.6)	IsDB / SFD / OPEC Fund	Loans (co-financing)	Ongoing	2019	50
6	Alternative North - South Road - Phase 2	China Eximbank	Government Concessional Loan (GCL) + PBC	Ongoing	2015	112
7	Alternative North - South Road - Phase 1	China Eximbank	Preferential Buyer's Credit (PBC)	Ongoing	2013	399.9
8	Bishkek - Osh Road Rehabilitation - Phase IV	EFSD (*3)(EDB)	Loan (co-financed with ADB)	Ongoing	2013	60

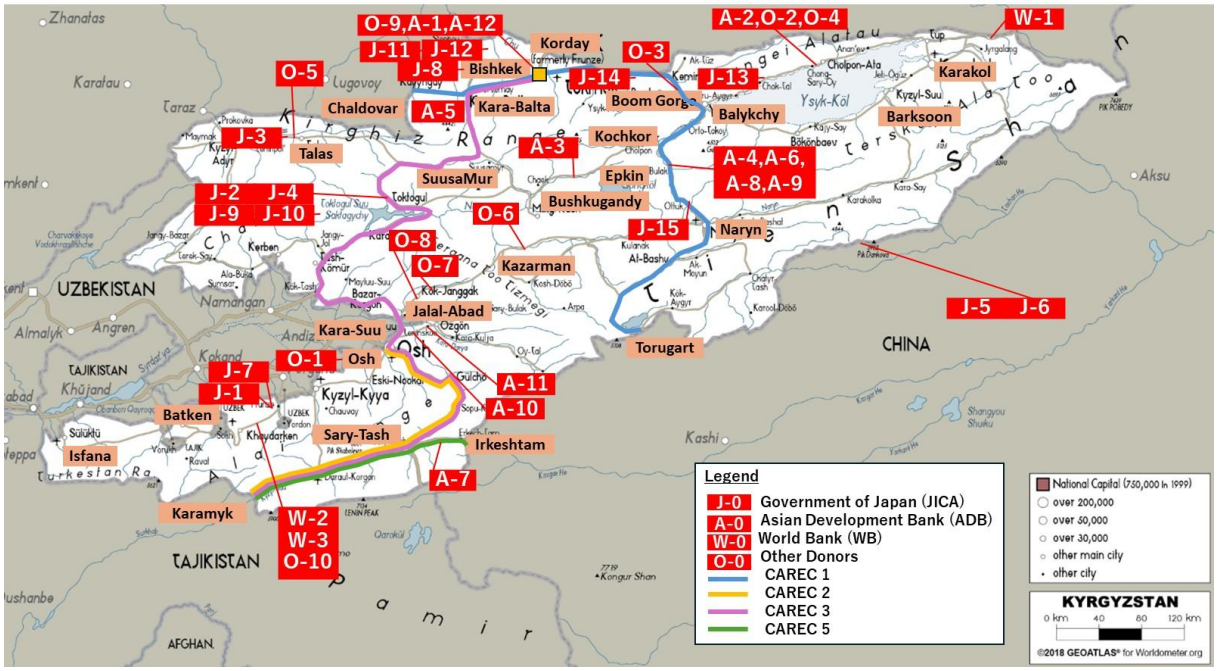
No.	Project	Donor	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
9	Bishkek Public Transport Project (trolleybus)	EBRD	Loan	Completed	2011	10
10	Osh-Isfana Road Upgrading Project	EBRD	Loan (co-financing)	Ongoing	2009	35

*"Additionally, an investment grant of EUR 3 million is planned from the EBRD Stakeholder Special Fund (SSF)."

*"The Arab Coordination Group (ACG) comprises the Islamic Development Bank (IsDB), Saudi Fund for Development (SFD), OPEC Fund for International Development (OFID), and Kuwait Fund for Arab Economic Development (KFAED)."

Source: Prepared by the JICA Study Team based on information from the websites of each donor

The following shows the project sites in the transport sector by each donor.



The number in the 'Alphabet–Number' format corresponds to the project number in Table 3-35 - Table 3-37.

Source: JICA Survey Team

Figure 3-21 Location Map of the Transport Projects by Each Donor in Kyrgyzstan

3.5.3.3 CKU Railway (China–Kyrgyz–Uzbekistan Railway) Development Status

In June 2024, China, Uzbekistan, and Kyrgyzstan signed an intergovernmental agreement to construct the CKU Railway, a roughly 500 km line connecting Kashgar, Osh, and Andijan. This route is part of China's Belt and Road Initiative. Within Uzbekistan, the route continues westward from Andijan to Tashkent, south to Samarkand and Karshi, then through Termez at the Afghan border, where it connects with the Trans-Afghan Corridor—opening access to markets in South Asia, the Middle East, sssssand even Europe.

To the west of Uzbekistan, it can link via Turkmenistan, Iran, and Turkey, offering connectivity to Europe.

On December 27, 2024, a groundbreaking ceremony was held in Toshkuchu village, Jalal-Abad Region, Kyrgyzstan. The event was attended by Kyrgyz President Sadyr Japarov, Chairman of China's National Development and Reform Commission Zheng Shanjie, and Uzbekistan's First Deputy Minister of Trade and Investment Khodjaev. Following the ceremony, plans have been made for the establishment and organization of the joint venture company, design work, environmental impact assessment (EIA), as well as land acquisition and resettlement procedures. Construction within the Kyrgyz territory is expected to begin by July 2025. The construction period has been announced as six years. The outline of the CKU Railway construction is as follows.

Table 3-38 Overview of CKU Railway Construction

Total Length	Approx. 486 km (311.75 km in Kyrgyz territory)
Scope	China: Construction of New Railway Lines within Its Territory Kyrgyz:18 stations, 81 bridges, 41 tunnels in the Kyrgyz Territory (*Various figures have been reported) Uzbekistan: Upgrade of Existing Railway Lines
Investment	Approx. USD 4.7 billion The breakdown is as follows: ・Approx. USD 2.35 billion: Low-interest loans from China ・Approx. USD 2.35 billion: Investments from participating countries based on the following equity shares: - China: approx. USD 1.2 billion - Kyrgyz: approx. USD 573 million - Uzbekistan: approx. USD 573 million
Shareholding Structure	A project company will be jointly established by the three countries: China Railways: 51% Kyrgyz Railways: 24.5% Uzbekistan Railways: 24.5%

Source: Based on information from the Eurasian Research Institute, The Jamestown Foundation, and The Diplomat

Although the CKU Railway was initially planned to follow the shortest and most economical southern route (Kashgar–Irkeshtam–Sary-Tash–Osh–Andijan), as shown in Figure 3-22 as of October 2024, construction is scheduled to take place along the northern route (Kashgar–Torugart–Osh–Andijan), which utilizes the existing railway network within Kyrgyzstan and contributes to regional connectivity.



Source: Created based on an image by Geopolitical Intelligence Services AG (as of October 2024)

Figure 3-22 CKU Railway Planned Route and Its Accessibility to Europe and South Asia

3.5.3.4 Border Dispute between Kyrgyzstan and Tajikistan

In March 2025, Kyrgyzstan and Tajikistan finalized the delimitation of nearly 1,000 kilometers of their national border and signed a border treaty.

The borders, originally drawn during the Soviet era, remained largely undefined after the USSR's collapse and have frequently been a source of conflict. Disputes over water resources and arable land have been ongoing for decades. However, large-scale clashes between civilians and military forces occurred in southern Kyrgyzstan along the border in 2021 and 2022, resulting in numerous casualties.

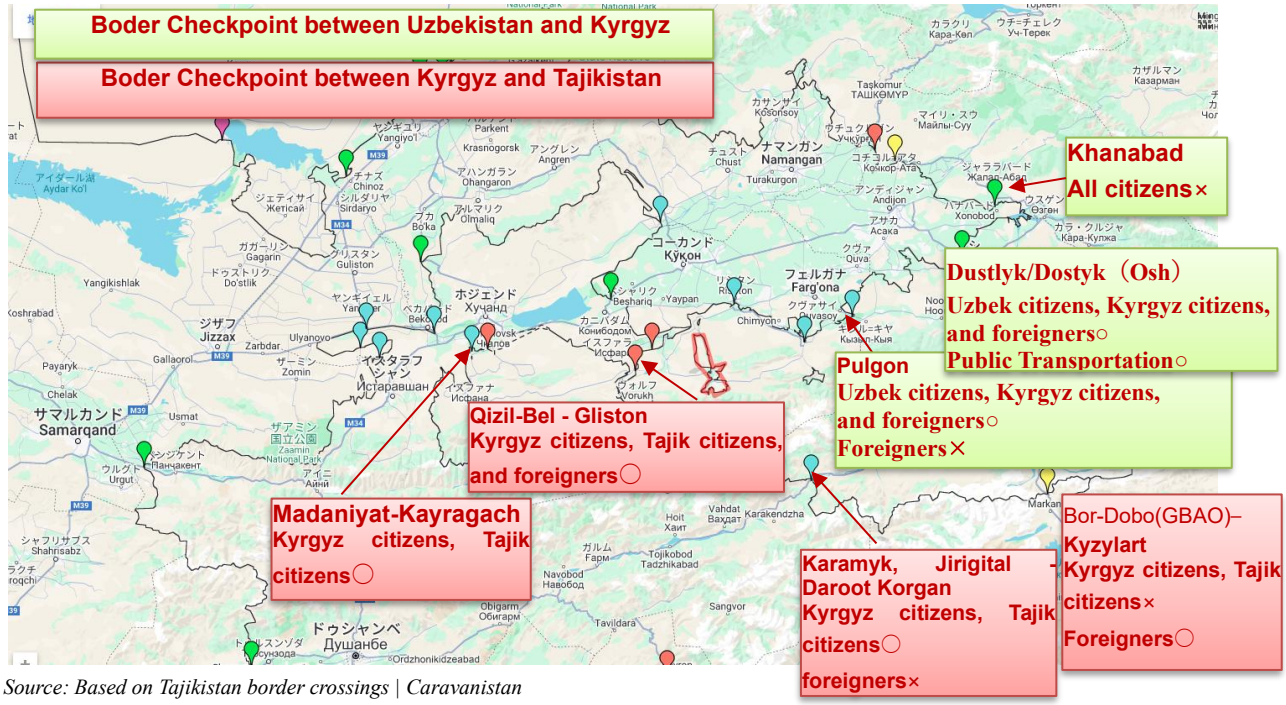
As part of the latest agreement, the two countries signed not only the border protocol but also two supplementary agreements concerning road construction and access to water and energy facilities.

The border checkpoints that were reopened as a result of this treaty are shown in Table 3-39.

Table 3-39 Reopened Border Checkpoints as a Result of the Treaty

No.	Border Checkpoint	Passage Allowed
1	Qizil-Bel–Guliston	Kyrgyz citizens, Tajik citizens, and foreigners
2	Madaniyat–Kayragach	Kyrgyz citizens, Tajik citizens, and foreigners
3	Bor-Dobo–Kyzylart	Only foreigners are allowed to pass

The map below shows the operational status of border checkpoints between Kyrgyzstan–Tajikistan.



Source: Based on Tajikistan border crossings | Caravanistan

Figure 3-23 Operational Status of Border Checkpoints（As of April 2025）

3.5.4 Republic of TajikistanHigh-Level Plan: National Development Strategy of the Republic of Tajikistan for the Period up to 2030

Tajikistan developed the long-term National Development Strategy of the Republic of Tajikistan for the period up to 2030 in 2016. The strategic objective for the transport sector is to support Tajikistan in overcoming geographical isolation and enhance its role as a transit country both regionally and internationally. The development of the transport sector is intended to improve domestic economic productivity, promote rural development, and strengthen the country's competitiveness in international trade.

The main measures are shown in Table 3-40.

Table 3-40 Main Measures in Tajikistan

Measure	Details
1. Construction and Rehabilitation of Transport Infrastructure	• Modernization of domestic roads, bridges, tunnels, and railways • Promotion of regional and international trade • Reduction of customs costs and improvement of mobility and safety
2. Development of Transit Corridors	• Development of cross-regional transport routes (connecting CIS countries to Afghanistan, Pakistan, and India) • Promotion of multimodal transport (land, rail, air) to support multilateral trade
3. Development of Regional and Air Transport	• Expansion of regional airports and small-scale aviation networks to ensure access to all areas • Public access to transportation services.
4. Sustainability of the Transport Sector	• Transport policies with reduced environmental and health impacts • Implementation of low-carbon and advanced technology-based operations and management systems

As of 2016, when the strategy was developed, road infrastructure achievements included the construction and rehabilitation of approximately 2,000 km of roads, 240 bridges, and 31.5 km of tunnels. However, railway development has been slow. The strategy targets the construction of 132 km of new railway lines and the modernization of aging infrastructure by 2030.

For Tajikistan, which is rich in mineral resources and relies heavily on agricultural exports, railway development is a priority sector. The strategy also includes plans for a comprehensive transport network integrating roads, railways, aviation, and telecommunications. Tajikistan aims to fulfill its role as a transit country linking CIS countries to sea access points through Afghanistan to Pakistan and India. Simultaneously, the country seeks to serve as a hub for East-West and North-South international logistics, boosting exports of agricultural, mineral, and light industrial products to drive economic growth.

3.5.4.1 Current Development by Major Donors

Donors supporting Tajikistan's transport sector include Japan (JICA), ADB, WB, EBRD, IsDB, China, Iran, and the OPEC Fund. Outlines of support by major donors are as follows.

(1) Government of Japan (JICA)

Japan's support for Tajikistan's transport sector covers a wide range of projects/surveys, including road rehabilitation projects connecting Tajikistan with Afghanistan, grant aids for road maintenance equipment and airport facilities, and technical cooperations for road, bridge, and disaster management. There are no records of concessional loan assistance to date. The project list is presented below.

Table 3-41 Japan's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year *	Project Cost (100 million JPY)
1	Project for Capacity Development for Bridge Management	Technical Cooperation	Completed	2021～2024	-
2	The Project for the Rehabilitation of the Kizilkala-Bokhtar Section of the Dushanbe-Bokhtar Road	Grant Aid	Completed	2019	32.32
3	The Project for Improvement of Dushanbe International Airport (Phase 2)	Grant Aid	Completed	2017	3.56
4	The Project for Capacity Development for Road Disaster Management in the Republic of Tajikistan	Technical Cooperation	Completed	2017～2020	-
5	The Project for Improvement of Equipment for Road Maintenance in Sughd Region and the Eastern Part of Khatlon Region	Grant Aid	Completed	2016	19.92
6	Project for Improvement of Air Navigation Services in Tajikistan	Technical Cooperation	Completed	2016～2018	-
7	The Project for Improvement of Dushanbe International Airport	Grant Aid	Completed	2014	19.14
8	The Project for Improvement of Road Maintenance	Technical Cooperation	Completed	2013～2016	-
9	The Project for Improvement of Equipment for Road Maintenance in the Khatlon Region and the Districts of Republican Subordination	Grant Aid	Completed	2013	13.44
10	The Project for the Rehabilitation of Kurgan Tyube - Dusti Road （Phase 2）	Grant Aid	Completed	2011	18.89
11	The Project for the Improvement of Dusty-Nizhniy Pyandzh Road（Phase 2）	Grant Aid	Completed	2009	13.24
12	The Project for Rehabilitation of Kurgan Tyube - Dusti Road	Grant Aid	Completed	2008	34.32
13	The Project for the Improvement of Dusty-Nizhniy Pyandzh Road	Grant Aid	Completed	2006	5.95

**For technical cooperation, the project duration is indicated.*
Source: Prepared by the JICA Study Team based on information from the JICA website

Since 2024, a preparatory study for providing cargo inspection equipment (grant aid) has been underway. The preparatory survey is being conducted to enhance connectivity along the Caspian Sea route by installing large-scale X-ray inspection equipment for railway cargo at the customs office of Spitamen Railway Station, located near the Uzbekistan border in northern Sughd Province. This initiative aims to strengthen both anti-smuggling enforcement and trade facilitation by improving customs inspection capabilities and expediting customs clearance procedures.



Source: Based on the Turkish railway journal and review

Figure 3-24 Railway Map Connecting Railway Station Spitamen and the Five Central Asian Countries (Uzbekistan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan)

(2) Asian Development Bank (ADB)

According to the Tajikistan Country Partnership Strategy (2021–2025) by ADB, the strategy for the transport sector in Tajikistan adopts a multi-dimensional approach aimed at sustainable growth and regional integration. This involves not only enhancing infrastructure connectivity but also advancing institutional reforms, digitalization, and the promotion of public-private partnerships (PPPs). By strengthening connections with neighboring Central Asian countries, Tajikistan aims to boost tourism and export opportunities for its agricultural products. Its role as a transit country with international transport corridors carries significant importance for driving economic growth. The project list is presented below.

Table 3-42 ADB's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Green Corridor Demonstration Project	Grant / Loan	Ongoing	2024	87
2	Road Network Sustainability Project	Grant	Ongoing	2020	111

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
3	Central Asia Regional Economic Cooperation Corridors 2, 3, and 5 (Obigarm-Nurobod) Road Project	Grant / Loan	Ongoing	2019	96
4	Central Asia Regional Economic Cooperation Corridors 2, 5, and 6 (Dushanbeâ€- Kurgonteppa) Road Project	Grant / Loan	Ongoing	2016	155
5	Central Asia Regional Economic Cooperation Corridors 3 and 5 Enhancement Project	Grant	Closed	2013	70
6	Central Asia Regional Economic Cooperation Corridor 6 (Ayni-Uzbekistan Border Road) Improvement Project	Grant / Loan	Closed	2012	100
7	CAREC Corridor 3 (Dushanbe-Uzbekistan Border) Improvement Project	Grant	Closed	2011	120
8	Dushanbe-Kyrgyz Border Road Rehabilitation Project, Phase II (TAJ)	Grant /Loan	Closed	2005	50
9	Dushanbe-Kyrgyz Border Road Rehabilitation Project (Phase I)	Loan	Closed	2003	15

Source: Prepared by the JICA Study Team based on information from the ADB website

(3) World Bank (WB)

According to the World Bank Country Partnership Framework (2021–2023), the World Bank has been working in the transport sector in coordination with CARs. The Bank is focusing on road rehabilitation in Sughd Province in northern Tajikistan—part of the Fergana Valley and bordering Uzbekistan and Kyrgyzstan. The program also includes support for securing infrastructure maintenance funding and enhancing operational efficiency. The project modalities are either grant-based or a combination of loan and grant assistance. The project list is presented below.

Table 3-43 WB's Assistance in the Transport Sector

No.	Project	Scheme	Current Status	Approval Year	Project Cost (Million.USD)
1	Central Asia Regional Links Program - Phase 4 (CARs-4)	Grant	Ongoing	2020	131
2	Central Asia Road Links - Tajikistan (CARs-2)	Loan / Grant	Completed	2015	45

Source: Prepared by the JICA Study Team based on information from the WB website

In Tajikistan, as in Kyrgyz, projects are being implemented under the CARs Program, with the focus area being the Sughd Region, which borders Uzbekistan's Fergana area. Currently, under the CARs-4 program, the World Bank is providing assistance aimed at improving the disaster resilience and safety

of road infrastructure in Sughd Province and enhancing the trade environment. The outline of the road rehabilitation project is as follows.

Table 3-44 Outline of Central Asia Regional Links Program － Phase 4 (CARs-4)

Total Length	Approx. 50km
Sections	①Bekabad（Uzbekistan border） → ②Kurkat 12.3km ③Dehmoy → ④Gafurov 21.9km ④Gafurov → ⑤Histevarz 6.3km ⑥Kuchkak → ⑦Kanibadam 10km
Funding （Grant）	IDA: USD 131 million Program for Asia Connectivity and Trade Trust Fund: USD 1 million

The locations ①–⑦ are shown on the map below.

Source: Based on the World Bank Project Appraisal Document

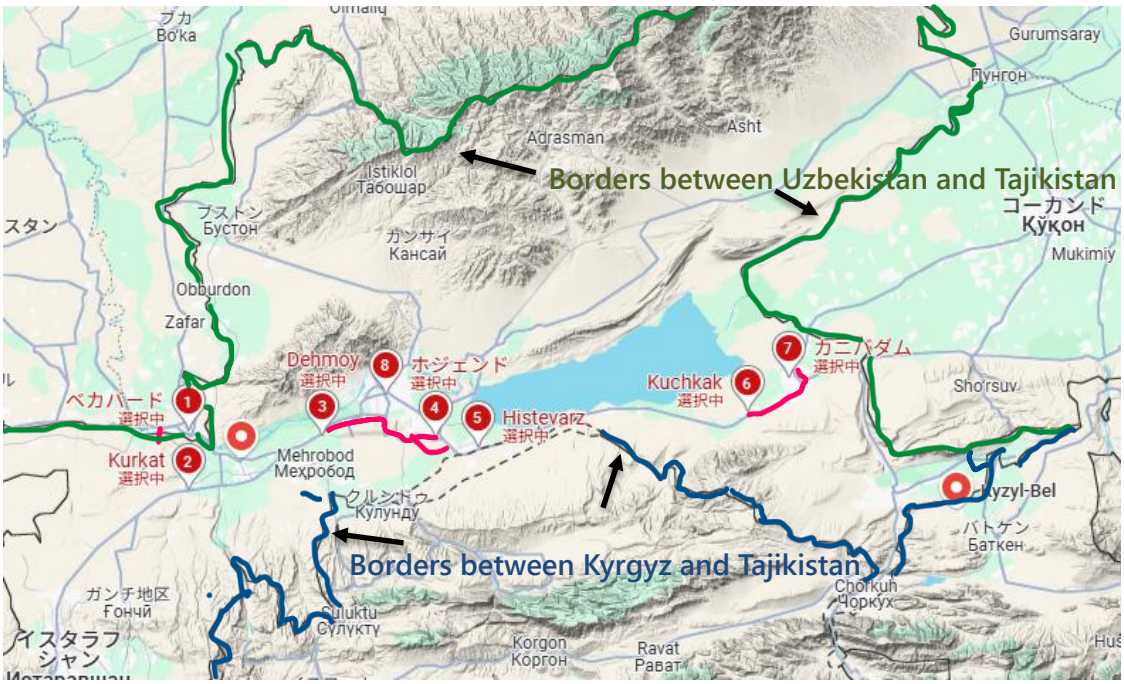


Figure 3-25 Road Sections under Projects in Sughd Province in the Framework of the CARs-4 Program

Under the CARs-4 Program, bridge and tunnel construction, as well as avalanche and rockfall prevention measures, are being implemented in the area surrounding Barsem village along the Pamir Highway in the Gorno-Badakhshan Autonomous Region (GBAO), which borders China, Kyrgyzstan, and Afghanistan.

(4) Other Donors

The status of support for trunk roads connecting neighboring countries and traversing Tajikistan in all directions is shown below. The development of the CAREC economic corridors, mainly led by ADB, is steadily progressing.

Table 3-45 Overview of the Main Roads Connecting with Neighboring Countries

No.	Section	CAREC Corridor No	International Financial Institutions
1	①Dushanbe-②Karamic (Kyrgyz border)	3,5	ADB, OPEC Fund, EBRD, AIIB
2	① Dushanbe-③Chanak (Uzbek border)	6	China Exim Bank, Iran, Pakistan
3	④Ayni-⑤Panjakent (Uzbek border)	6	ADB, OPEC Fund
4	①Dushanbe-⑥Tursunzoda (Uzbek border)	3	ADB, EBRD, AIIB
5	①Dushanbe-⑦Nijniy Panj (Afghan border)	5,6	JICA, ADB
6	①Dushanbe-⑧Kulma (China border)	-	IsDB, China Exim Bank, OPEC Fund, OPEC Fund, Agha Khan Fund, Saudi Fund, Kuwait Fund

The locations ①–⑧are shown on the map below.



Source: MOT, The Republic of Tajikistan

Figure 3-26 Sections of Main Roads Rehabilitated by Different Donors

3.5.4.2 Other Roads Connecting to the Uzbekistan Border

The southern Khatlon Province borders Afghanistan to the south and Uzbekistan to the west.

Khatlon is the region with the highest agricultural output in Tajikistan. The development of international

corridors is extremely important for the country's economic growth, as it expands opportunities for exporting agricultural products to overseas markets.

Since 2023, the MOT of the Republic of Tajikistan has requested international support for the rehabilitation of a road extending south from Bokhtar, the provincial capital of Khatlon, through Aivaj near the Afghan border, and westward to the Uzbekistan border.

Table 3-46 Overview of the Road Section

Total Length	Approx. 175km
Structure	Bridges: 27 bridges with a total length of 674 m Culverts: 147 culverts with a total length of 2,881 m
Estimated Project Cost	Around USD 236 million (Excludes demolition of existing structures and land acquisition costs)
Current Status	In August 2023, the Government of Tajikistan formally requested AIIB to support the project. AIIB responded with an offer of USD 2 million for project preparation; however, due to high interest rates, the agreement was not finalized. The Tajik government has since formally requested the Kuwait Fund for financial support to

Source： Based on interviews with the MOT

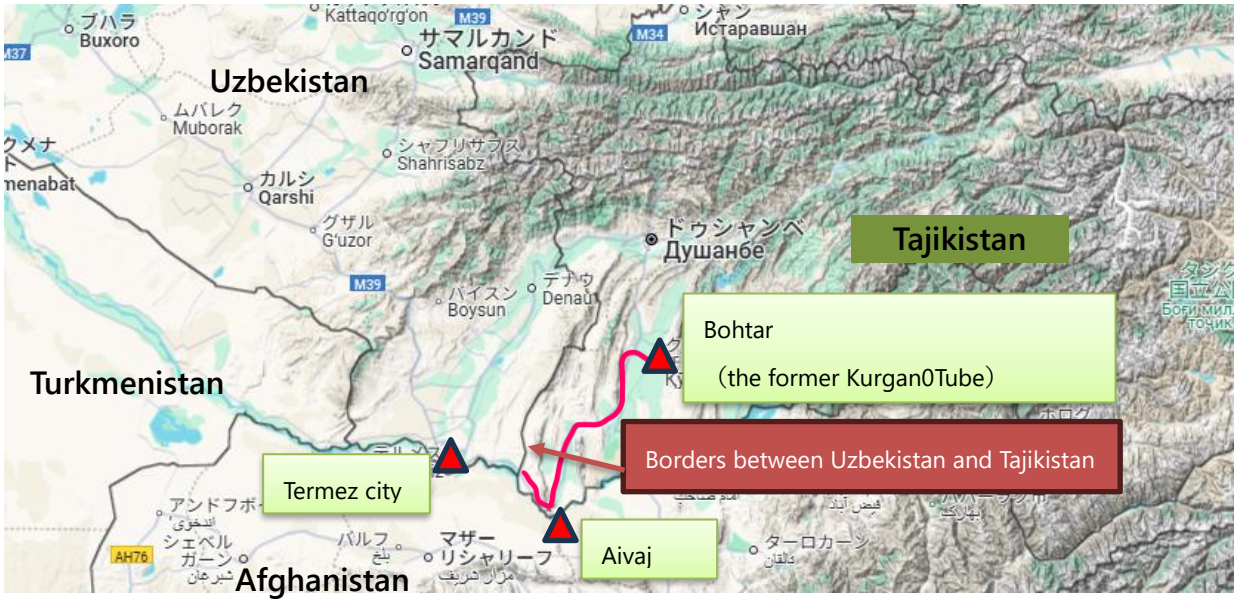


Figure 3-27 Bokhtar–Uzbekistan Border Road Section

3.5.5 Islamic Republic of Afghanistan

3.5.5.1 Status of Transport Sector Support

Following the collapse of the Ashraf Ghani administration in August 2021 and the establishment of the Taliban regime (Islamic Emirate of Afghanistan), the international community has not officially recognized the new government. As a result, international organizations and bilateral donors have limited their support to basic humanitarian needs (such as health, education, and food) through channels like the United Nations. The currently available information is summarized below:

(1) Government of Japan (JICA)

Japan's assistance to Afghanistan in the transport sector has primarily focused on urban road

improvement and airport facility upgrades. Two projects are particularly relevant to the Trans-Afghan Route discussed later. The "Mazar-e-Sharif City Ring Road Development Project" in the northern region (JPY 1.75 billion) was based on an exchange of notes in 2010, and one section of the project involved the improvement of a road leading to Uzbekistan.

Kabul–Jalalabad Road Improvement (JPY 9.57 billion): Funded through a contribution to ADB, this project plans to improve the road connecting Kabul to Peshawar, a major city in northwestern Pakistan. It aimed to support Afghanistan's economic self-reliance by enhancing its role as a logistical hub, while also contributing to stabilization through job creation.

(2) Asian Development Bank (ADB)

As of 2021, ADB's cumulative support for Afghanistan's transport sector totaled USD 2.684 billion, accounting for 41.1% (as of April 2024 in the FACT SHEET of Afghanistan) of ADB's assistance portfolio in the country.[2]. Most of this support was allocated to road infrastructure, with a total of 21 projects implemented.

In 2017, ADB supported the preparation of the Transport Sector Master Plan (2017–2036). While the feasibility of this plan has diminished under the current Taliban regime, the required scale of infrastructure investment remains informative. The total estimated investment needed for the transport sector was approximately USD 25.9 billion, with over 90% allocated to road and rail infrastructure, and also including development of border facilities and logistics hubs. This reflects Afghanistan's previously envisioned role as a regional transit country.

Table 3-47 Transport Sector Support Breakdown

Sector	Amount ($ million)	Share (%)
Railways	11,176	43.1
Roads	13,000	50.2
Urban transport	853	3.3
Airports	568	2.2
Trade facilitation	300	1.2
Total	**25,897**	**100.0**

Source: Transport Sector Master Plan Update (2017-2036)

(3) World Bank (WB)

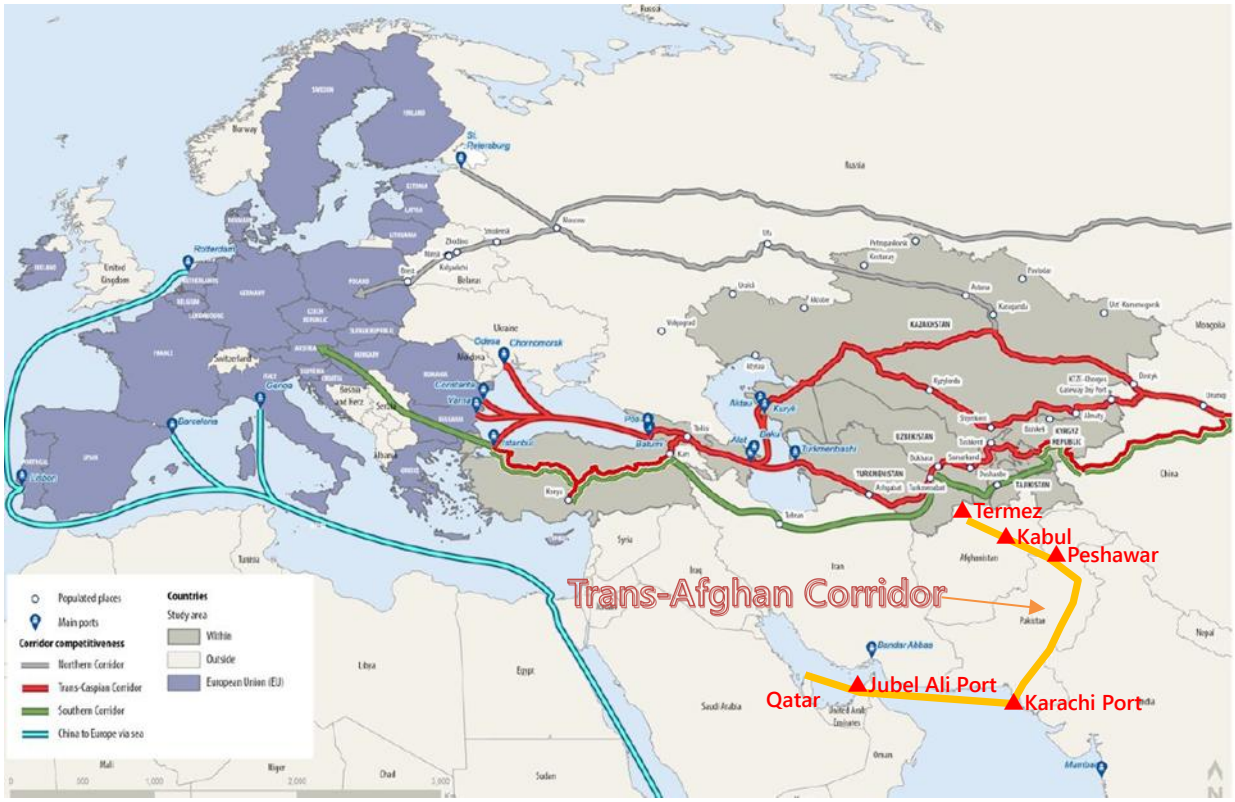
As of 2021, the World Bank had implemented 12 projects in Afghanistan's transport sector, with a total investment of around USD 1.638 billion. The focus areas included urban and rural road improvements, customs capacity building, and trade facilitation.

[2] Excerpt from the Afghanistan FACT SHEET published in April 2024.

3.5.5.2 Trans-Afghan Corridor and Its Relevance to Afghanistan

Trans-Afghan Corridor refers to a multimodal transport route connecting Central Asia to Pakistan's Karachi Port via Uzbekistan and Afghanistan using a combination of rail, road, and sea transport.

Termez (Uzbekistan) and Hairatan (Afghanistan) are border towns equipped with cargo terminals and rail links. These facilities were developed largely in response to the need for efficient delivery of UN humanitarian aid to Afghanistan and have since gained strategic importance in regional logistics.



Source : Based on Sustainable transport connections between Europe and Central Asia

Figure 3-28 Trans-Afghan Corridor

The development status of the Trans-Caspian Corridors is summarized below.

Table 3-48 Development Status of the Trans-Afghan Corridor

№	Item	Details	Source
1	Section Relation to CAREC Corridors	Route Example: Termez (Uzbekistan) – Kabul (Afghanistan) – Peshawar (Pakistan) – Karachi (Pakistan) Mainly road transport, with some railway sections. The route shown is one example. According to CAREC Corridors: • CAREC 6: Termez – Hairatan – Mazar-e-Sharif • CAREC 2: Mazar--Sharif – Kunduz • CAREC 5: Kunduz – Kabul – Karachi	
2	Current Logistics Situation	• Handles logistics such as automobile parts, machinery, food products, pharmaceuticals, and agricultural goods from Japan, China, and Southeast Asian countries. • to the Taliban regime, the route was mainly used for transporting UN humanitarian aid.	JETRO
3	Logistics Hubs	• Termez: Hosts the TERMEZ CARGO CENTRE and several	TERMEZ

№	Item	Details	Source
		private logistics companies. • Port of Karachi: Key maritime gateway to Central Asia; highly strategic. As of 2023, the transfer of operations to the UAE was under consideration due to Pakistan's economic crisis. • Jebel Ali Port (UAE): The largest multimodal hub in the Middle East, connecting road, sea, air, and rail transport.	CARGO CENTRE Nikkei JETRO
4	Infrastructure Development	• The road from Hairatan (near the Uzbek border) to Kabul is asphalt-paved. • Year-round truck transport is possible from Hairatan to Mazar-e-Sharif. • The Mazar-e-Sharif to Kabul segment passes through mountainous areas and is weather-sensitive. (As of October 2024, the Salang Tunnel section is closed for repairs.) • The railway line is in place between Termez – Hairatan – Mazar-e-Sharif, with a rail bridge between Termez and Hairatan (USD 165 million grant by ADB in 2009). Connections to Herat, Tajikistan, and Pakistan were also considered at the time. • In February 2025, Uzbekistan, Afghanistan, and Pakistan signed a railway construction agreement (Termez – Mazar-e-Sharif – Logar – Kharlachi section). • There is an existing rail line between Peshawar and Karachi.	Logistics Cluster JETRO Japan Maritime News ADB
5	Future Potential	• Maritime transport linking Karachi Port with Jebel Ali (UAE) and Qatar is under consideration, enhancing global connectivity. • Kazakh and Pakistani logistics companies are conducting a pilot trucking project from Pavlodar SEZ (Kazakhstan) to Karachi Port. • Western routes from Uzbekistan can connect via Turkmenistan to the Caspian Sea, while northern routes connect via Kazakhstan to the Caspian, leading to the Caucasus, Black Sea, Turkey, and Europe.	South Asian Voices Globalink
6	Challenges	• Natural Conditions: Heavy reliance on road transport. The mountainous stretch between Termez and Kabul is highly vulnerable to weather disruptions, especially around the Salang Tunnel (100 km north of Kabul). • Massive Capital Requirements: Estimated total cost of the railway between Termez – Mazar-e-Sharif – Peshawar is around USD 5 billion for a total length of approximately. 600km. • Technical Issues in Rail Construction: Different rail gauges in Uzbekistan, Afghanistan, and Pakistan necessitate cargo transfer at borders → leading to longer transport times and higher infrastructure costs. (Use of free-gauge trains from China is under consideration.) • Geopolitical Risk ①: The Taliban regime remains unrecognized, making it difficult to secure funding from international financial institutions. • Geopolitical Risk ②: Domestic instability and tensions between Afghanistan and Pakistan.	Logistics Cluster South Asian Voices
7	Japan's Activities	• The Ministry of Land, Infrastructure, Transport and Tourism (MLIT) is conducting a demonstration survey (2024: Bishkek – Bukhara – Karachi – Tokyo)[3]. Travel time to Karachi: ~30 days.	MLIT

[3] Although the original plan was to use the Termez–Kabul–Karachi route, it was changed to Bukhara–Turghundi–Chaman due to ongoing road repairs on part of the route during the pilot test.

№	Item	Details	Source
		• The route is heavily dependent on land transport, with limited cargo capacity, but railway development could greatly enhance its potential. • Due to conflict zones, insurance coverage remains a significant concern for logistics operators.	
	Others	• In October 2023, the Taliban regime participated in the Belt and Road Forum. Discussions were held regarding the potential development of copper mines in eastern Afghanistan by China, raising the possibility of Chinese support for railway infrastructure development.	Reuters

3.5.6 Development Status of Neighboring Countries Contributing to Connectivity with Uzbekistan

While the development statuses of Kazakhstan, the Kyrgyz Republic, Tajikistan, and Afghanistan are summarized above, all except Afghanistan have identified the enhancement of connectivity with neighboring countries and economic development as top priorities in their national development plans, transport strategies, and strategy papers by major international financial institutions.

In addition to road and railway development, the improvement of infrastructure, such as border crossing facilities and logistics centers, is considered essential for expanding exports of domestic agricultural and industrial products and for increasing domestic employment.

Moreover, for Central Asian countries, the development of international logistics corridors—such as the Caspian Sea route, which connects East Asia (including Japan and China) with Europe, and the Trans-Afghan route, which provides access from Central Asia to South Asia and the Middle East—is not only a matter of transport infrastructure. It also requires improvements in "soft" aspects, such as the unification and digitalization of customs procedures and institutional reforms.

As landlocked countries, Central Asian states are expected to serve as transit hubs for logistics, and their ability to function effectively as logistics corridors is a critical precondition for their own economic growth.

The following table outlines the development status of road infrastructure in neighboring countries that connect to priority projects shown in Table 7-1 Priority Project List in Chapter 7.

Table 3-49 Development Status of Road Infrastructure in Neighboring Countries

Neighboring Countries	Priority Project№ in Uzbekistan * Corresponds to Project No. in Table 7-1	Development Status
1 Kazakhstan	-	1-1 There is no road connected to the priority project.
2 Kyrgyz	2-1 RO-1	2-1-1 The road connects to Osh, the capital of the southern region of Kyrgyzstan. Among the Bishkek–Osh highway segments, the Bishkek–Kara-Balta section (52.5 km) in the northern region, corresponding to CAREC Corridor 3, and the Jalal-Abad–Madaniyat section (67 km) in the southern direction, were

Neighboring Countries	Priority Project№ in Uzbekistan * Corresponds to Project No. in Table 7-1	Development Status
		rehabilitated with co-financing from ADB and EBRD, ADB grants, and contributions from the Kyrgyz government (totaling approximately USD 190 million), and were completed in September 2024. JICA implemented grant aid projects such as the "Project for the Protection from Ground Blizzard on Bishkek-Osh Road," the "Project for Avalanche Protection on Bishkek-Osh Road," the "Project for Improvement of the Equipment for Road Maintenance in Osh, Jalal-Abad and Talas Oblasts," and the "Project for Reconstruction of Kok-Art River Bridge on the Bishkek-Osh Road." 2-1-2 The OBI Road, which extends southwest from Osh and connects to Tajikistan (see Figure 3-20), has been rehabilitated with support from JICA, WB, IsDB, EU, EBRD, and the Export-Import Bank of China. The total investment for the rehabilitation amounts to approximately USD 384 million.
	2-2 RO-7	2-2-1 This road connects to Kyzyl-Kiya on the Kyrgyz side, which is traversed by the OBI Road. The development status of this section is as described above in Section 2-1-2.
3 Tajikistan	3-1 RO-6	3-1-1 This road connects to Kanibadam on the Tajikistan side. The approximately 10 km section west of Kanibadam is part of the 50 km road rehabilitation project supported by the World Bank under the CARs program, with a total cost of approximately USD 131 million (see Table 3-44).
	3-2 RO-3	3-2-1 This road connects to Panjakent on the Tajikistan side and corresponds to CAREC Corridor 6. The approximately 113 km section east of Panjakent was rehabilitated with co-financing from ADB and the OPEC Fund (approximately USD 115 million) and was completed in December 2016.
4 Afghanistan	-	4-1 There is no road connected to the priority project.

4 CANDIDATE PROJECTS

4.1 Road Sector

To prepare the longlists and shortlists, the Survey Team requested that CR propose candidate projects. The road projects proposed by CR are presented in Table 4-1 and Figure 4-1.

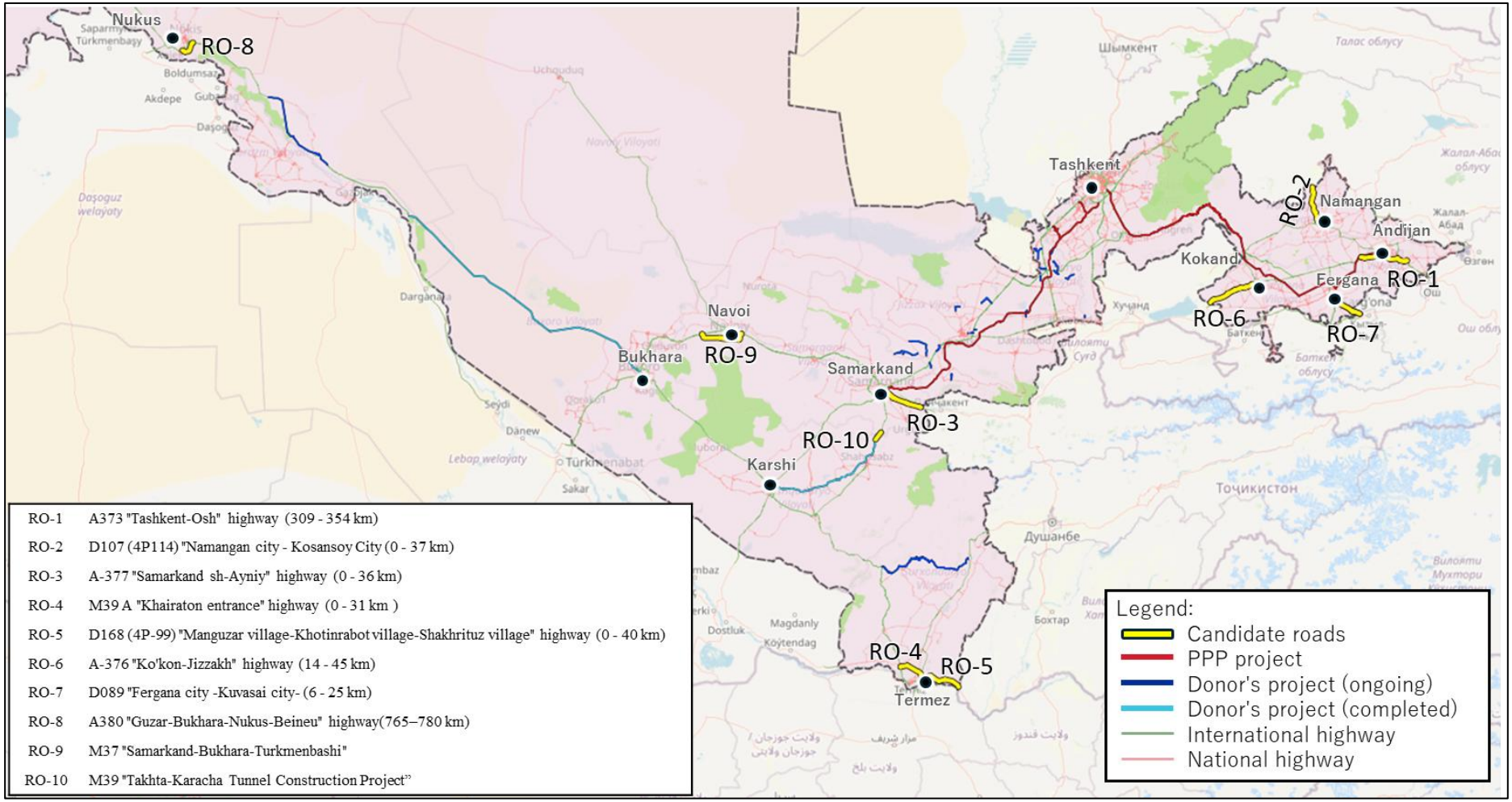
Table 4-1 Candidate Projects in Road Sector

No.	Project Name	Road Category	Project Contents	Length	Traffic Volume (Veh/day)	State
RO-1	A373 "Tashkent-Osh" highway (309 - 354 km)	A: International (CAREC, TRACECA, Caspian Sea Route)	Rehabilitation	45km	25,000	Andijon
RO-2	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)	D: National	Rehabilitation + Road Expansion (Widening)	37km	19,551	Namangan
RO-3	A-377 "Samarkand Ayniy" highway (0 - 36 km)	A: International (CAREC, TRACECA)	Rehabilitation + Road Expansion (Widening)	36km	22,000-25,000	Samarkand
RO-4	M39 A "Khairaton entrance" highway (0 - 31 km)	M: International (CAREC, TRACECA)	Rehabilitation	31km	5,950	Surkhandarya
RO-5	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 40 km)	D: National	Rehabilitation	40km	5,155	Surkhandarya
RO-6	A-376 "Ko'kon-Jizzakh" highway (14 - 45 km)	A: International (CAREC, TRACECA)	Rehabilitation + Road Expansion (Widening)	31km	17,467	Fergana
RO-7	D089 "Fergana city - Kuvasai city- (6 - 25 km)	D: National	Rehabilitation + Road Expansion (Widening)	19km	32,600	Fergana
RO-8	A380 "Guzar-Bukhara-Nukus-Beineu" highway (765–780 km)	A: International (CAREC, TRACECA)	New construction	15km	7,004	Karakalpakstan
RO-9	M37 "Samarkand-Bukhara-Turkmenbashi"	M: International (CAREC, TRACECA, Caspian Sea Route)	New construction	43km	26,600	Navoiy
RO-10	M39 "Takhtaqoracha Tunnel Construction Project"	M: International (CAREC, TRACECA)	New construction	11km	11,789	Samarkand Kshkadarya

NOTE: ‣Descriptions of candidate projects are shown in Appendix-1.

‣The road classifications “M” and “A,” used for international roads, are based on the abbreviations of “Mezhdunarodny” (International) and “Avtomagistral” (Highway), respectively. However, both classifications are currently defined as international roads, and there is no clear distinction between them.

Source: JICA Survey Team



Source: JICA Survey Team

Figure 4-1 Location Map of Candidate Projects in the Road Sector

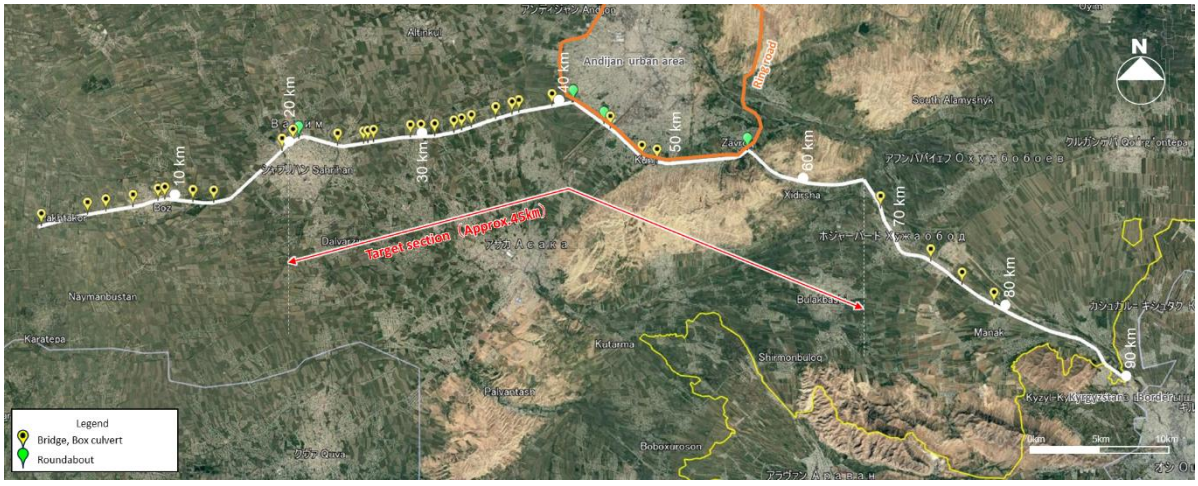
4.1.1 RO-1: A373 "Tashkent-Osh" Highway (309 - 354 km)

RO-1 is an International Road (A373) connecting Tashkent to the Andijan-Kyrgyzstan border. This road is 4-6 lanes road located in the flat terrain of the Fergana Basin in eastern Uzbekistan.

The project consists of the rehabilitation of the existing road. While the adjoining sections before and after the target section have undergone pavement repair and are in good condition, the target section remains in comparatively poor condition, with certain segments exhibiting low serviceability. Additional issues include unconstructed sections of the median strip and insufficient safety for crossing pedestrians. Through this project, it is expected that smoother traffic flow will be secured, including for trucks transporting import and export cargo, thereby enhancing connectivity with Kyrgyz, as well as improving safety for both vehicles and pedestrians through the strengthening of safety facilities.

The traffic volume is approximately 25,000veh/day, and the traffic demand is very high. In terms of people's flow, it is the trunk road for movement between Fergana basin and Tashkent. In terms of logistics, the road is used by many trucks for imports and exports in the Fergana basin, and for the transportation of fruits and textiles, cottons, etc. In terms of the road network, the road connects to Andijan Ring Road, the terminus of the planned PPP project (Tashkent-Andijan). It is also on the route of the CAREC corridor and TRACECA corridor (Transport Corridor Europe-Caucasus-Asia), which are planned international corridors. On the border of Kyrgyz, there is Osh city, and Osh is on the route of the Kyrgyz BO road and OBI road, which are being supported by JICA.

This route is a major artery leading to the Karasu border (Kyrgyz), with substantial freight transport from surrounding industrial zones and agricultural areas. In the future, cross-border trade with Kyrgyz and the expansion of the distribution sphere across the Fergana Valley are expected to increase transit and customs-cleared international logistics flows.



Source: JICA Survey Team

Figure 4-2 Location Map of RO-1



West of Ring Road (42km)



East of Ring Road (65km)



Ring Road (55km)



Kyrgyz Border (90km)

Source: JICA Survey Team

Figure 4-3 Road and Roadside Condition of RO-1

4.1.2 RO-2: D107 (4P114) "Namangan City - Kosansoy City (0 - 37 km)

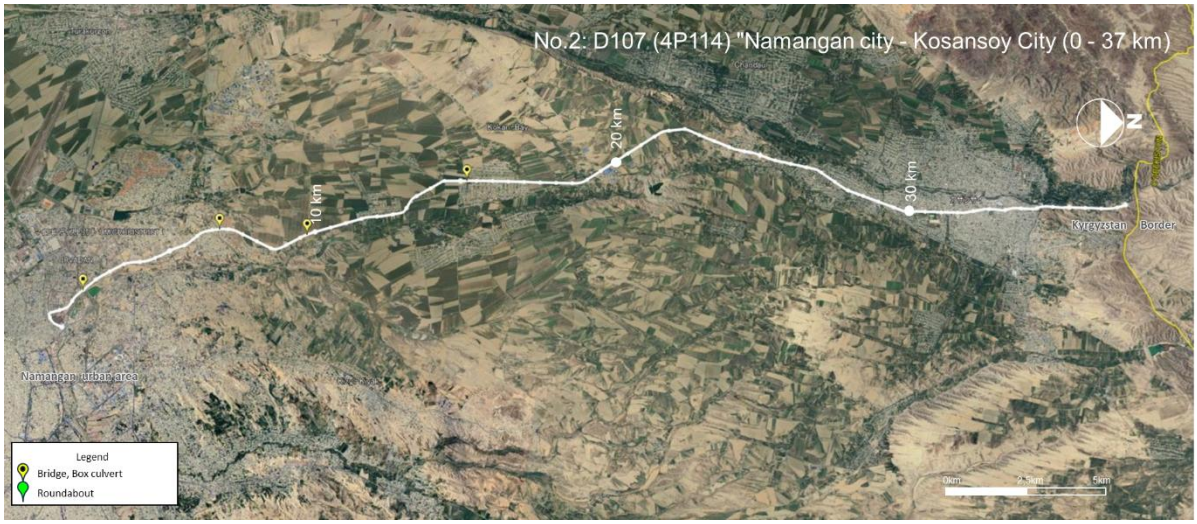
RO-2 is a National Road (D107(4P114)) connecting the Namangan-Kyrgyzs Border. This road is a 2-4 lane road located in the relatively flat Fergana basin in eastern Uzbekistan.

The project consists of the widening and rehabilitation of the existing road. In particular, the suburban sections exhibit poor pavement conditions, including segments with low serviceability. Although traffic demand is high, the road capacity is not yet critically constrained. Through this project, smoother traffic flow is expected to be secured, including the enhancement of connectivity with Kyrgyz, as a result of improved pavement conditions. It should be noted, however, that the effectiveness of road widening is expected to remain marginal at this stage.

The traffic volume is approximately 19,551veh/day, and the traffic demand is high. In terms of people's flow, it is the road for movement around Namangan city commute. In terms of logistics, the road is used by trucks for daily and agricultural products, and the amount of cargo is few.

As a regional connector road, it supports small-scale logistics between Fergana and Namangan. The demand for short-distance transport of agricultural products and daily necessities is expected to remain stable, while road improvements may promote more efficient inter-municipal logistics.

In terms of road network, the road connects to the Kyrgyz border, but the road standards of the Kyrgyz side are low, and the use of trucks and other vehicles for international transportation is limited.



Source: JICA Survey Team

Figure 4-4 Location Map of RO-2



Urban Section (0km)



Urban Section (32km)



Suburban Section (25km)



Kyrgyz Border

Source: JICA Survey Team

Figure 4-5 Road and Roadside Condition of RO-2

4.1.3 RO-3: A-377 "Samarkand Ayniy" Highway (0 - 36 km)

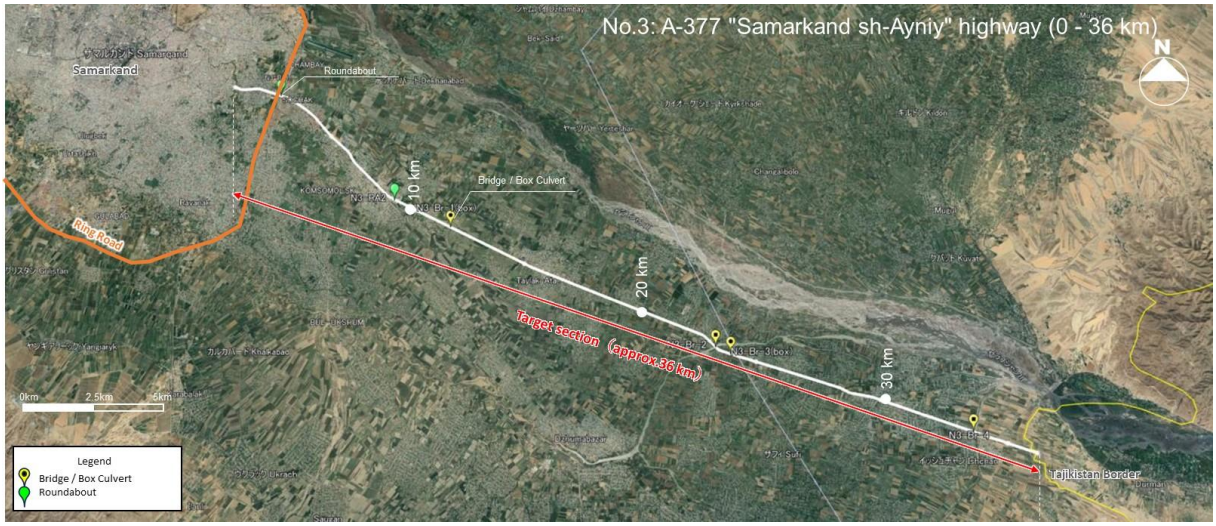
RO-3 is an International Road (A377) connecting the Samarkand-Tajikistan border. This road is a 2-4 lane road is located in flat terrain.

The project consists of the widening and rehabilitation of the existing road. The target section, particularly the two-lane segments, exhibits poor pavement conditions and low serviceability. Furthermore, given the current traffic capacity, there is a strong need to expand the road to four lanes. Through this project, it is expected that smoother traffic flow will be secured, including for vehicles such as trucks transporting import and export cargo, thereby enhancing connectivity with Tajikistan. In addition, the strengthening of safety facilities is expected to improve safety for both vehicles and pedestrians.

The traffic volume is approximately 22,000-25,000 vehicles/day, and the traffic demand is high. In terms of people flow, it is the trunk road for tourists' movement between Samarkand and Tajikistan. In terms of logistics, the road plays a key role in transporting coal from Tajikistan, as well as handling tourism-related and small-lot cargo, making it highly significant for both tourism and trade.

This route serves as a strategic tourism axis connecting Samarkand—one of Uzbekistan's largest tourist cities—with the Jartepa border crossing to Tajikistan. According to pre-pandemic tourism statistics, approximately 2 million tourists visited the Samarkand region annually. Based on the national tourism promotion strategy, the government aims to expand the number of international visitors to 12 million by 2030, which is about twice the number recorded in 2019. Samarkand is designated as a core focus area within this strategy, and an increase in tourist flows from the Tajikistan side via this route is anticipated. In particular, since 2023, mutual visa relaxation and joint tourism promotion between the two countries have progressed, which is expected to further increase travel demand along this corridor.

In terms of the road network, the road connects to the Samarkand Ring Road, the terminus of the planned PPP project (Tashkent-Samarkand). It is also on the route of the CAREC corridor and TRACECA, which are planned international corridors.



Source: JICA Survey Team

Figure 4-6 Location Map of RO-3



Suburban Section (12km)



Urban Section (32km)



Suburban Section (20km)



Tajikistan Border

Source: JICA Survey Team

Figure 4-7 Road and Roadside Condition of RO-3

4.1.4 RO-4: M39 "Khairaton Entrance" Highway (0 - 31 km)

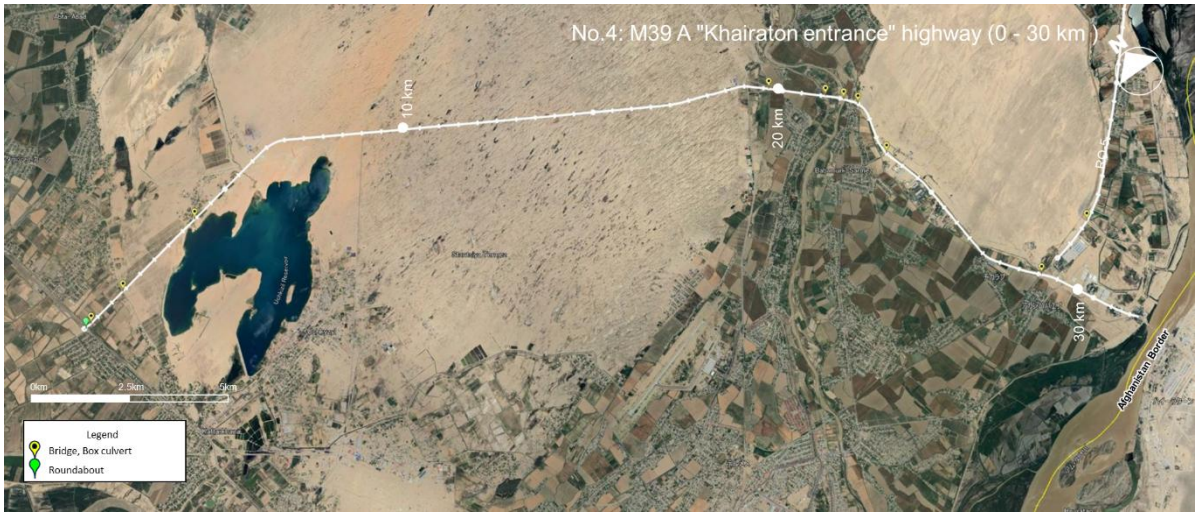
RO-4 is an International Road (M39) connecting Kaftarhana to -Afghanistan border. This road is 4 4-lane road and located in the flat terrain in southern Uzbekistan.

The project consists of the rehabilitation of the existing road. Certain segments of the target road exhibit poor pavement conditions and low serviceability. Through this project, smoother traffic flow is expected to be secured, including for vehicles such as trucks transporting import and export cargo, thereby enhancing connectivity with Afghanistan.

The traffic volume is approximately 5,950 vehicles/day, and the traffic demand is medium. In terms of people flow, it is the road for the Afghan border people flow (workers and aid workers). In terms of

logistics, the road is used by trucks mainly for construction materials to Afghanistan. As bilateral logistics liberalization progresses, transit traffic and imports from Afghanistan are expected to increase.

In terms of road network, the part of this road is on the route of the CAREC corridor and TRACECA, which are planned international corridors.



Source: JICA Survey Team

Figure 4-8 Location Map of RO-4



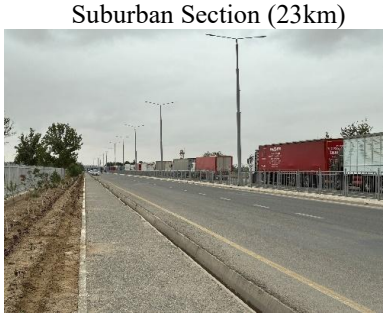
Suburban Section (3km)



Suburban Section (23km)



Suburban Section (20km)



Afghanistan Border

Source: JICA Survey Team

Figure 4-9 Road and Roadside Condition of RO-4

4.1.5 RO-5: D168 (4P-99) "Manguzar Village-Khotinrabot Village-Shakhrituz Village" Highway (0 - 40 km)

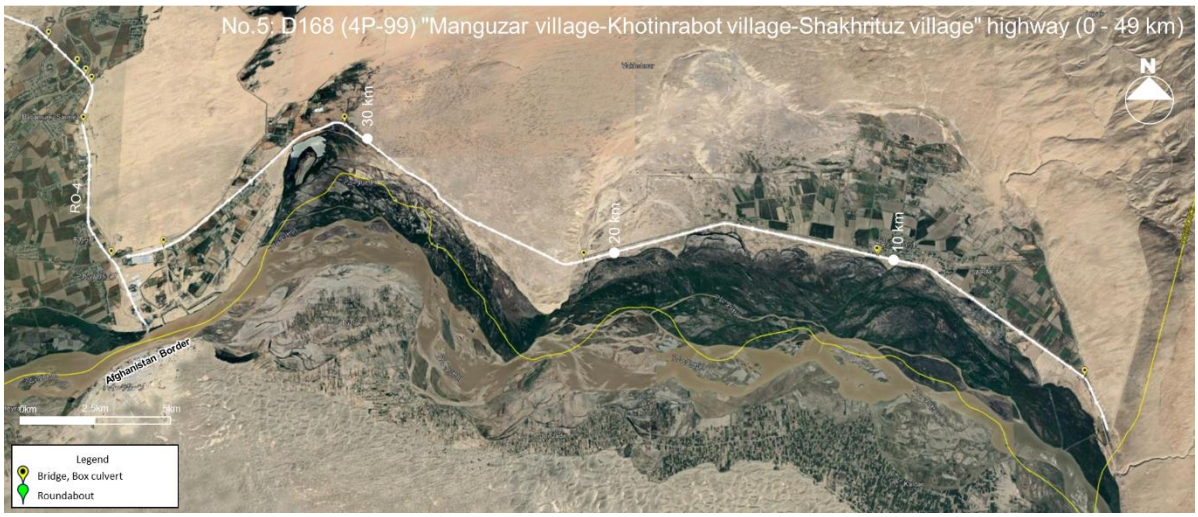
RO-5 is a National Road (D168(4P99)) connecting the Afghanistan border to – Tajikistan border. This road is 2-lane road located in the flat terrain in southern Uzbekistan.

The project consists of the rehabilitation of the existing road. Some segments of the target road are in

poor pavement condition, with significantly low serviceability. This project is expected to ensure smoother traffic flow, including cross-border traffic with Afghanistan, through pavement improvement.

The traffic volume is approximately 5,155veh/day, and the traffic demand is medium. In terms of people flow, it is the road for the Afghan border people flow (workers and aid workers). In terms of logistics, the road is used by trucks mainly for construction materials to Afghanistan.

This is an inland connector road, responsible for medium-distance logistics between cities and districts (e.g., rice, wheat, and construction materials). Strengthened agricultural productivity in the surrounding region is anticipated to increase shipment volumes, enhancing its role in agricultural freight transport.



Source: JICA Survey Team

Figure 4-10 Location Map of RO-5



Suburban Section (12km)



Suburban Section (31km)



Suburban Section (15km)



Suburban Section (39km)

Source: JICA Survey Team

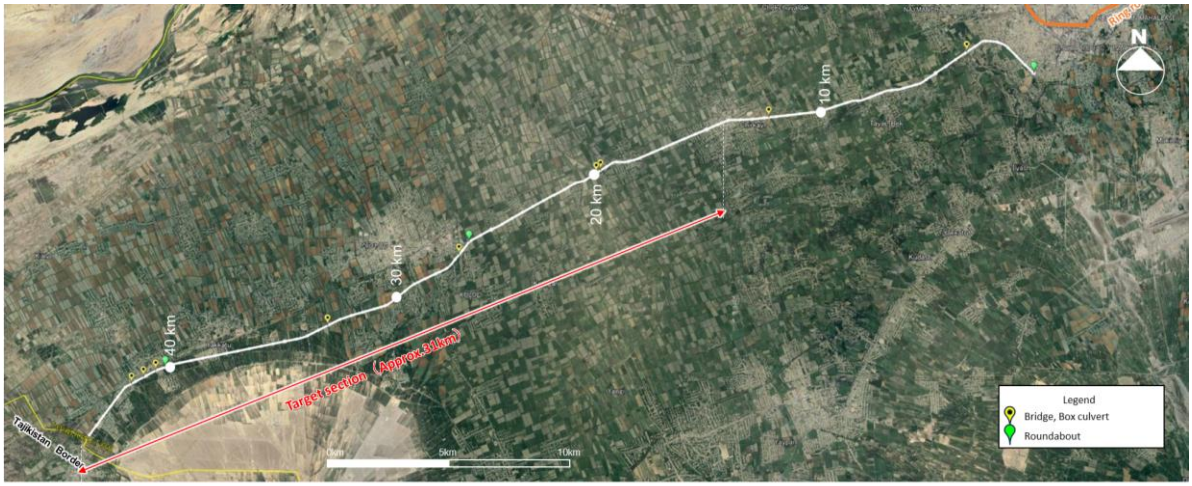
Figure 4-11 Road and Roadside Condition of RO-5

4.1.6 RO-6: A-376 "Ko'kon-Jizzakh" Highway (14 - 45 km)

RO-6 is an International Road (A376) connecting Kokand-Tajikistan border. This road is 2-4 lanes road located in the flat terrain of the Fergana Basin in eastern Uzbekistan.

The project consists of the widening (from two lanes to four lanes) and rehabilitation of the existing road. Pavement conditions in urban and suburban areas are relatively good; however, the pavement from the urban outskirts to the border shows noticeable damage. This project is expected to secure smoother traffic flow for cross-border traffic, including tourism and commercial traffic along the road, through road widening and pavement improvement, thereby enhancing connectivity with Tajikistan.

The traffic volume is approximately 17,467veh/day, and the traffic demand is high. In terms of people flow, it is a route for long-distance buses, businessman, etc. In terms of logistics, the road is used by trucks for daily and agricultural products, and the amount of cargo is few. In terms of road network, the road is also on the route of the CAREC corridor and TRACECA, which are planned international corridors. The other side of border of Tajikistan, there is Khodjent city, and it also connect to Jizzah in Uzbekistan.



Source: JICA Survey Team

Figure 4-12 Location Map of RO-6



Suburban Section (24 km)



Suburban Section (44 km)



Suburban Section (33 km)

Source: JICA Survey Team

Figure 4-13 Road and Roadside Condition of RO-6

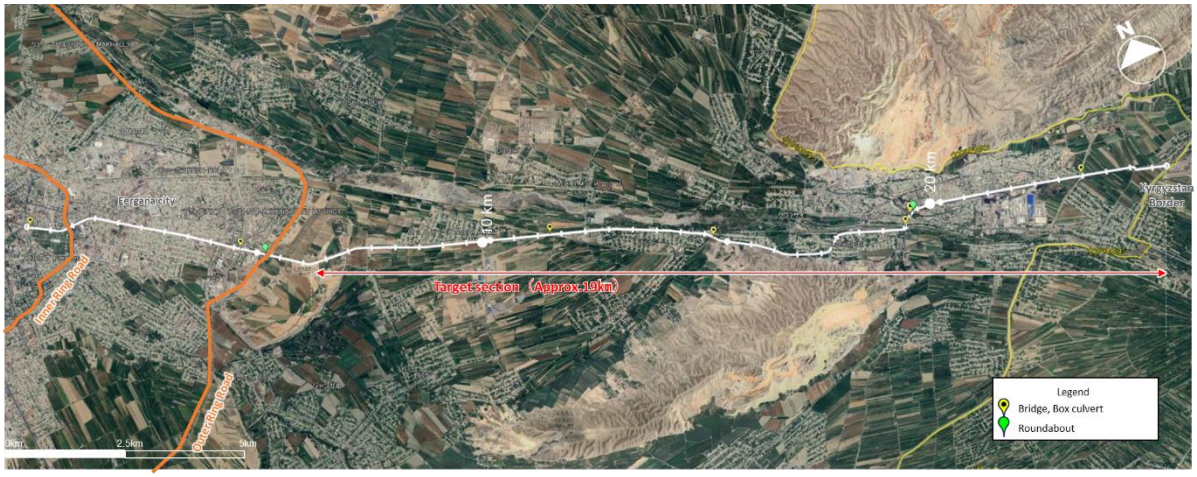
4.1.7 RO-7: D089 "Fergana City -Kuvasai City- (6 - 25 km)

RO-7 is a National Road (D089) connecting the Fergana-Kyrgyz border. This road is 2-4 lanes road located in the flat terrain of the Fergana Basin in eastern Uzbekistan.

The project consists of the widening (from two lanes to four lanes) and rehabilitation of the existing road. While the western sections of the target road are in good pavement condition, the target section exhibits poor pavement conditions and low serviceability. This project is expected to ensure smoother traffic flow, including for vehicles such as trucks transporting import and export cargo, through road widening and pavement improvement, thereby enhancing connectivity with Kyrgyz.

The traffic volume is approximately 32,600veh/day, and the traffic demand is very high. In terms of people flow, it is a route of movement for inter-city trips and between the Kyrgyz border. In terms of logistics, the road is used by many trucks for importing vegetables and fruits, exporting textiles, and transporting coal. As mutual trade with Kyrgyz expands, further increases are anticipated.

In terms of road network, on the border of Kyrgyz, there is Kyzyl-Kyya city, and Kyzyl-Kyya is on the route of the Kyrgyz OBI road, which is being supported by JICA. The pavement condition on the Kyrgyz side of the border is asphalt (a four-lane road), with a high volume of heavy vehicle traffic, similar to the Uzbekistan side (Fergana). The pavement shows no major cracks or potholes, only minor surface cracking, and is in relatively good condition.



Source: JICA Survey Team

Figure 4-14 Location Map of RO-7



Urban Section (5 km)



Suburban Section (23 km)



Suburban Section (11 km)



Kyrgyz Border

Source: JICA Survey Team

Figure 4-15 Road and Roadside Condition of RO-7

4.1.8 RO-8: A380 "Guzar-Bukhara-Nukus-Beineu" Highway (765–780 km)

RO-8 is an International Road (A380) connecting Guzar-Bukhara-Nukus- the Kazakhstan border. This road is 4-lane road and located in the flat terrain in northwestern Uzbekistan.

The project consists of the construction of a new bypass road around the urban area. Although current road capacity is not critically constrained, hearings from CR indicate that congestion occurs in the city during certain times of the day. This project is expected to alleviate congestion on the existing road by diverting through traffic away from the city center.

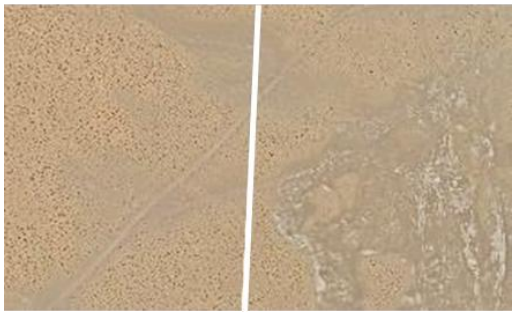
The traffic volume of existing roads is approximately 7,004veh/day, and the traffic demand is medium.

In terms of people flow, it is the road for the inter-city and border people flow. In terms of logistics, the road is used by trucks for transporting crude oil and mineral products and serves as a role of international logistics route. In terms of the road network, the road is also on the route of the Caspian Sea route (Tashkent-Samarkand-Navoiy-Bukhara-Kazakhstan border). This road links to major corridors and serves a complementary role for both intercity and cross-border connections. As a bypass and shortcut route to improve the efficiency of international logistics, truck traffic is expected to remain active.



Source: JICA Survey Team

Figure 4-16 Location Map of RO-8



Suburban Section (10 km)



Bridge in Suburban Section (16 km)



Suburban Section (13km)

Source: Google Earth

Figure 4-17 Road and Roadside Condition of RO-8

4.1.9 RO-9: M37 "Samarkand-Bukhara-Turkmenbashi"(147-190km)

RO-9 is an International Road (M39) connecting Samarkand -Bukhara- border. This road is 4 lanes road and located in the flat terrain in southwestern Uzbekistan.

T The project consists of the construction of a new bypass road around the urban area. While current traffic capacity is not critically constrained, hearings from CR indicate that congestion occurs in the city during certain times of the day. Through this project, congestion on the existing road is expected to be reduced by diverting through traffic away from the city center.

The traffic volume of existing roads is approximately 26,600 veh/day, and the traffic demand is very high. In terms of people's flow, it is the road for the inter-city and tourist flow. In terms of logistics, the road plays a role of an international logistics route. In terms of the road network, the road is also on the route of the Caspian Sea route (Tashkent-Samarkand-Navoiy-Bukhara-Kazakhstan border). As a domestic logistics road, it functions as a collection and distribution route for agricultural products (grains and fruits) in the Kashkadarya region. Under the national food security strategy, improvements in distribution efficiency are expected, and transport volumes may rise with the introduction of cold chain facilities.



Source: JICA Survey Team

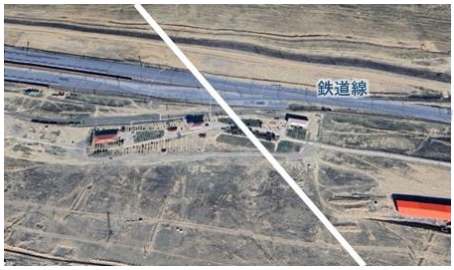
Figure 4-18 Location Map of RO-9



Railway Crossing (6 km)



Suburban Section (20 km)



Railway Crossing (22 km)

Source: Google Earth

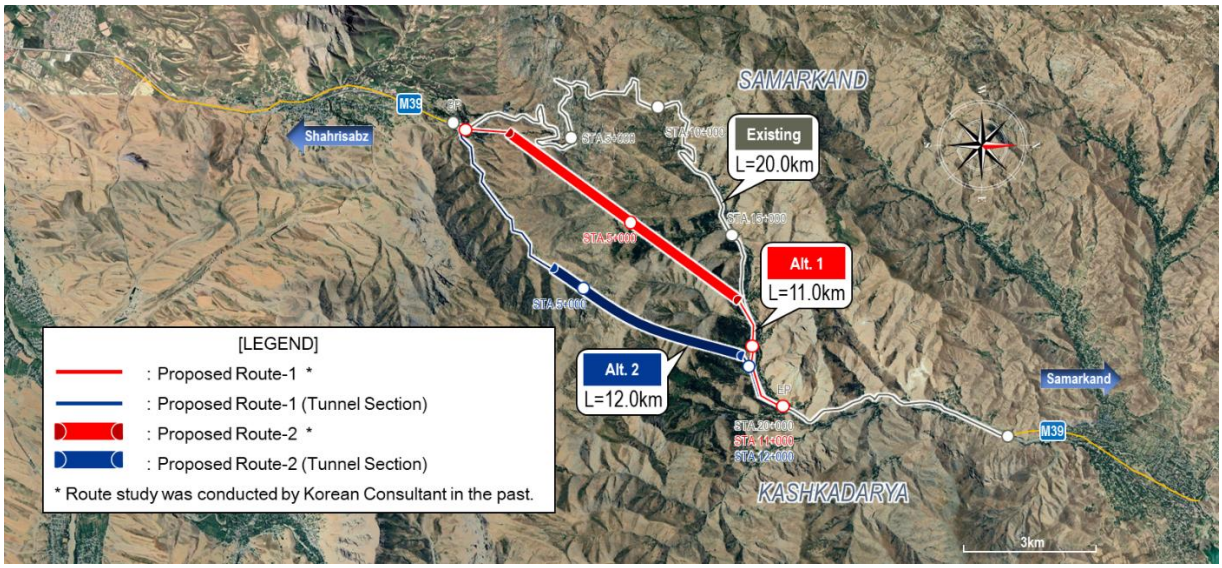
Figure 4-19 Road and Roadside Condition of RO-9

4.1.10 RO-10: M39 "Takhtaqoracha Tunnel Construction Project"

The project consists of a new mountain tunnel bypass on the international M39 highway, connecting Yanakishlak to Kishylk, south of Samarkand. The existing M39 road has numerous rockfall-prone sections, with rockfall incidents occurring almost annually. Furthermore, the route includes steep gradients and sharp curves over mountain passes. This project is expected to secure safer traffic flow by avoiding hazardous sections and improving the road alignment.

The project section is a two-lane road that passes through the mountainous area (Takhtaqoracha Pass). The traffic volume is 11,789 vehicles per day, and there is a large flow of people, including tourists, intercity commuters, and commuters to Samarkand. This road is a part of the international road (M39) and is expected to play a major role in the transportation of mixed logistics, supplies, agricultural products, etc. However, due to the tough road alignment conditions of the existing road, such as steep gradients and sharp curves, the passage of cargo over 12 tons, large trucks, trailers, buses, and microbuses (with more than 8 passengers) has been restricted, which is a bottleneck in logistics.

The location map on the candidate project (RO-10) is shown in Figure 4-20.



Source: JICA Survey Team

Figure 4-20 Location Map of RO-10

4.2 Bridge Sector

In preparing the long and shortlists, candidate project proposals were requested from CR. The bridge projects proposed by CR (number of bridges to be replaced/major repairs) are shown in the table and figure.

The project consists the replacement or major rehabilitation of aging or severely damaged bridges. Many of these bridges, if left unmaintained, pose a high risk of deck collapse or complete structural failure. In fact, as noted in Section 3.4.1, based on the information obtained in this survey alone, eight incidents of bridge collapse, including partial failures, have been confirmed between 2024 and July 2025. The implementation of this project is expected to ensure safe and comfortable passage for both vehicles and pedestrians, as well as to reduce the risk of sudden traffic restrictions resulting from bridge collapse incidents.

Based on a nationwide bridge inspection, these bridges were classified into three conditions (three-level evaluation system: (1) in good condition, (2) in need of minor repair, and (3) in need of replacement/major repair). The situation is urgent, but no budgetary measures have been taken, including those of other donors. In addition to bridges in severely damaged condition, many bridges constructed under old standards applied during the former Soviet era (~1991) were also included. The proposed candidate projects in the bridges sector are shown in Table 4-2, Table 4-3, Figure 4-21 and Figure 4-22.

Table 4-2 Proposed Candidate Projects in the Bridge Sector

Road Type	No. of Bridges	By Bridge Length	
		Less than 100m	100m or more
International Road	15 Bridges	12 Bridges	3 Bridges
National Road	35 Bridges	32 Bridges	3 Bridges
Other Road	55 Bridges	51 Bridges	4 Bridges
Total	105 Bridges	95 Bridges	10 Bridges

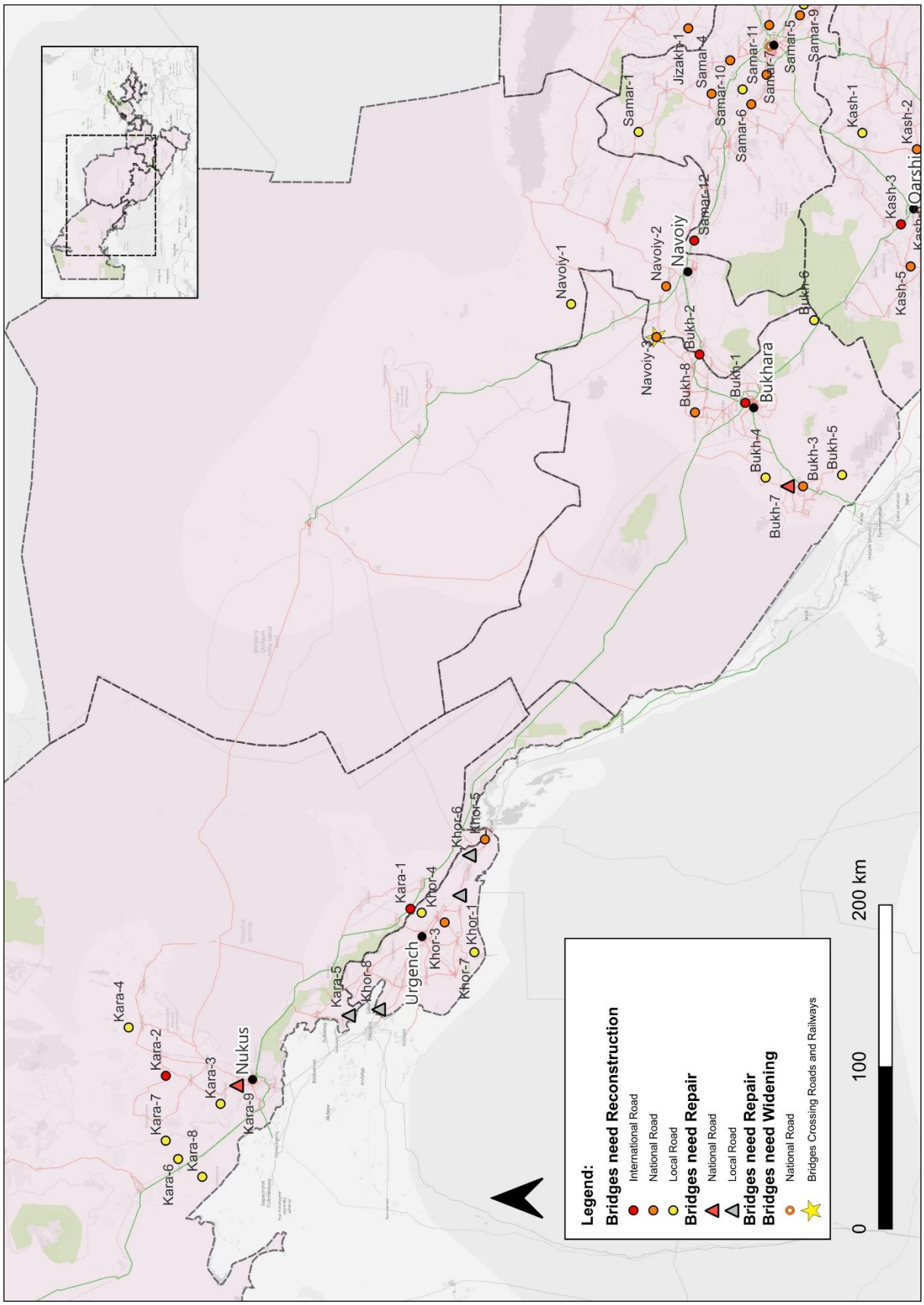
Source: JICA Survey Team

Table 4-3 Proposed Candidate Projects in the Bridge Sector (Region-by-Region Summary)

No.	Region	No. of Bridges	By Road Type		
			International Road	National Road	Other Road
1	Karakalpakstan	9	1 (CAREC, TRACECA)	2	6
2	Andijan	7	1 (CAREC, TRACECA, Caspian Sea Route)	2	4
3	Bukhara	8	2 (CAREC, TRACECA, Caspian Sea Route)	3	3
4	Jizakh	9	1 (CAREC, TRACECA)	3	5
5	Kashkadarya	9	1 (CAREC, TRACECA)	2	6
6	Navoiy	3	0	2	1
7	Namangan	6	0	3	3
8	Samarkand	12	1 (CAREC, TRACECA, Caspian Sea Route)	7	4
9	Surkhandarya	8	0	1	7
10	Syrdarya	8	4 (CAREC, Caspian Sea Route)	0	4
11	Tashkent	10	2 (CAREC, TRACECA, Caspian Sea Route)	5	3
12	Fergana	8	1 (CAREC, TRACECA, Caspian Sea Route)	3	4
13	Khorezm	8	1 (TRACECA)	2	5

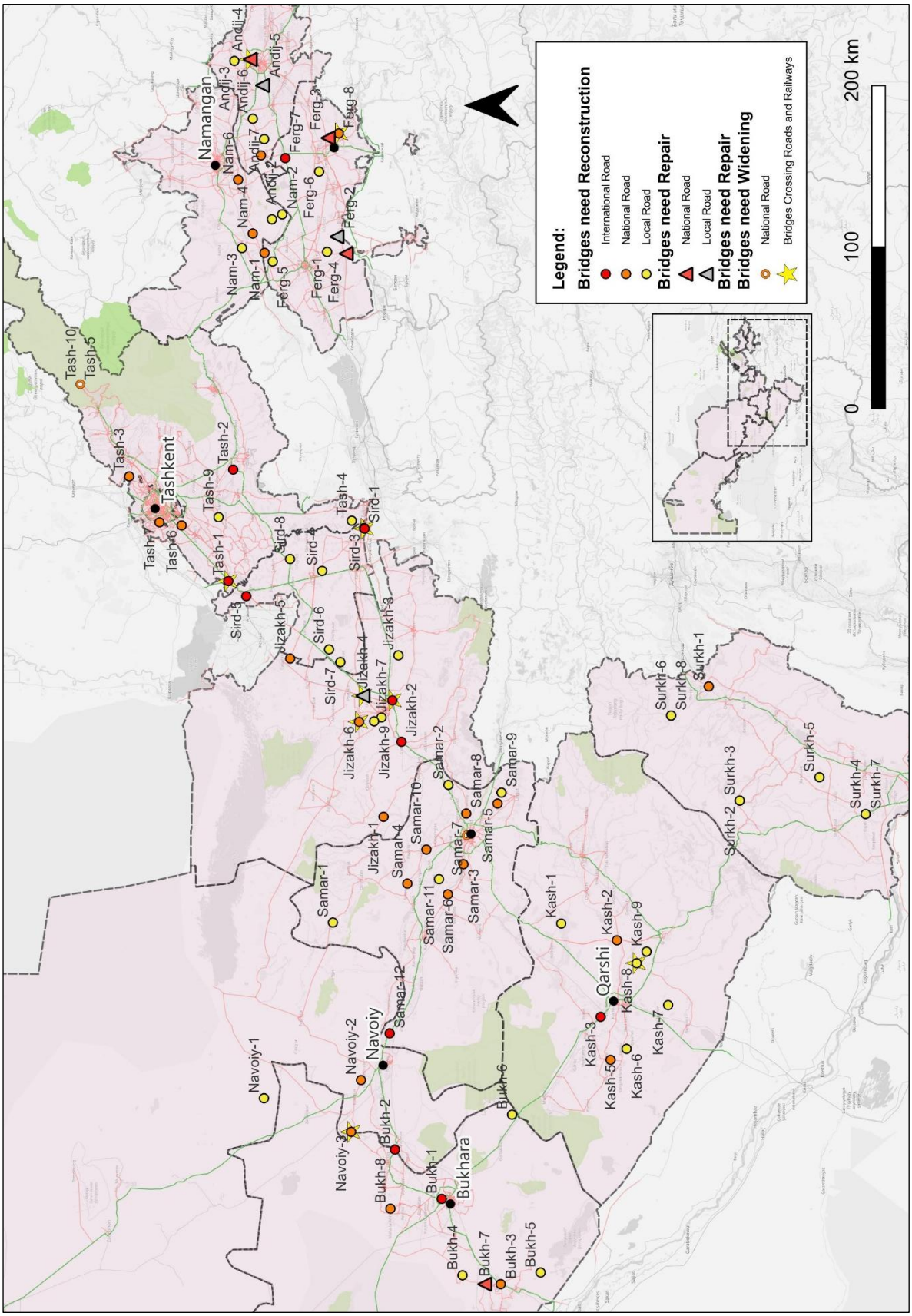
NOTE: Descriptions of candidate projects are shown in Appendix 1.

Source: JICA Survey Team



Source: JICA Survey Team

Figure 4-21 Location Map of Candidate Projects in the Bridge Sector (1/2)



Source: JICA Survey Team

Figure 4-22 Location Map of Candidate Projects in the Bridge Sector (2/2)

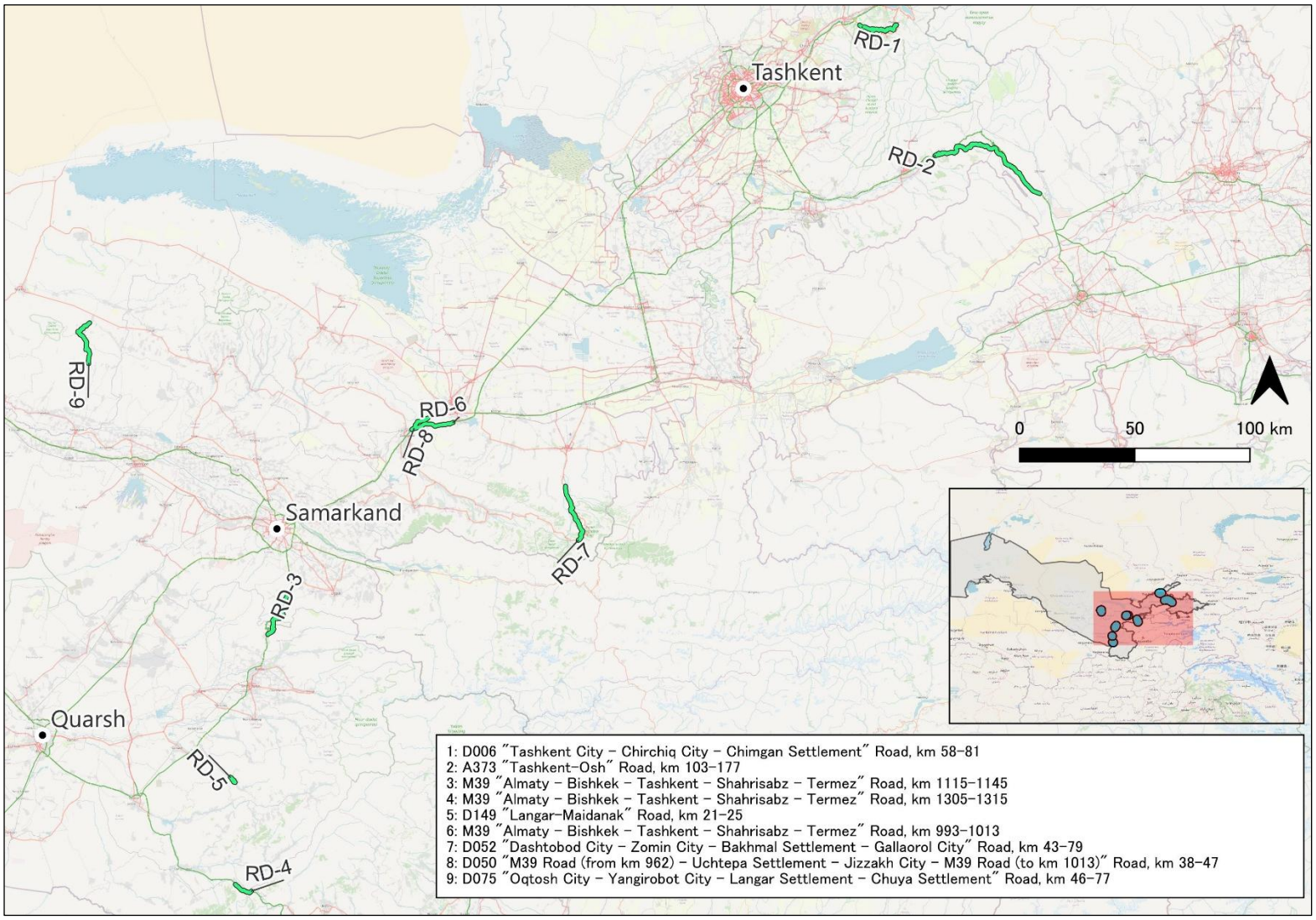
4.3 Road Disaster

The candidate projects proposed by CR are presented in Table 4-4 and Figure 4-23. The disaster risk areas (locations) for each candidate project have been determined based on site reconnaissance, interviews with CR staff, past study reports, etc.

Table 4-4 Candidate Road Disaster Projects

No.	Projects	Mountain Pass	Road Class	Lenth	Traffic Volume (Vehicles/day)
RD-1	D006 (58-81km Post) "Tashkent-Chirchiq-Chimgan"	Chimgan Pass	D: National	23km	3,880
RD-2	A373 (103-177km Post) "Tashkent-Osh"	Kamchik Pass	A: International (CAREC, TRACECA, Caspian Sea Route)	74km	24,279
RD-3	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"	Takhtaqoracha Pass	M: International (CAREC, TRACECA)	30km	11,789
RD-4	M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"	Chak-Chak Pass	M: International (CAREC, TRACECA)	10km	13,263
RD-5	D149 (21-25 km Post) "Langar-Maidanak"	Langar-Maidanak Pass	D: National	4km	4,607
RD-6	M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"	Saykhan Pass	M: International (CAREC, TRACECA)	20km	40,000-45,000
RD-7	D052 (43-79 km Post) "Dashtobod-Zomin- Bakhmal-Gallaorol"	—	D: National	36km	9,000-10,000
RD-8	D050 "M39 (38-47km Post) Uchtepa Settlement – Jizzakh City	—	D: National	9km	9,000-11,000
RD-9	D075 (46-77 km Post)"Oqtosh-Yangirobot–Langar–Chuya"	Langar-Khatirchi Pass	D: National	31km	1,300-1,500

NOTE: Descriptions of candidate projects are shown in Appendix 1.



Source: JICA Survey Team

Figure 4-23 Location Map on Candidate Road Disaster Projects

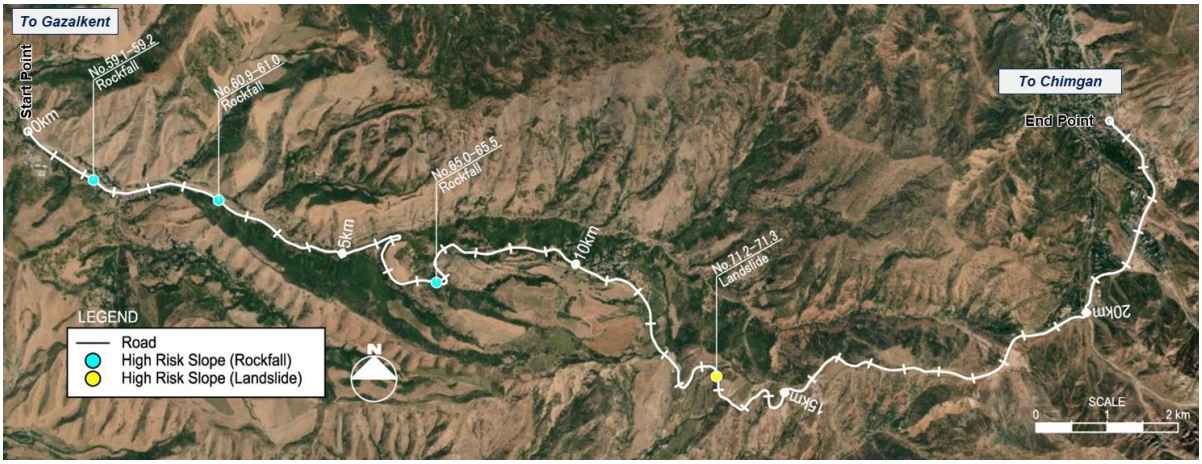
4.3.1 RD-1: D006 (58-81km Post) "Tashkent-Chirchiq-Chimgan"

It is a national highway D006 (two-lane road) approximately 23 km long that connects Gazalkent and Chimgan and passes through mountainous areas. There are several hazardous sections of rockfalls where the road is close to the steep slope.

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is approximately 3,880 vehicles per day, and this road is mainly used by tourists visiting the mountain climbing areas and resort facilities and distributing tourist-related materials and food, and beverages. And it is located in a nature reserve area (National Park).

The location map on the candidate project (RD-1), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-24, Figure 4-25 and Table 4-5.



Source: JICA Survey Team

Figure 4-24 Location Map on Candidate Project (RD-1)



Rockfall Slope (59.1 to 59.2km)



Landslide Slope (71.2 to 71.3km)

Source: Prepared by JICA Survey Team based on Google Earth

Figure 4-25 Status of Hazardous Slopes (RD-1)

Table 4-5 Expected Countermeasures for Hazardous Slopes (RD-1)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
59.1-59.2km	100	20	Rockfall	Rockfall Net
60.9-61.0km	100	20	Rockfall	Rockfall Net
65.0-65.4km	400	15	Rockfall	Rockfall Net
71.2-71.3km	100	200	Landslide	Anchor + Drainage Work

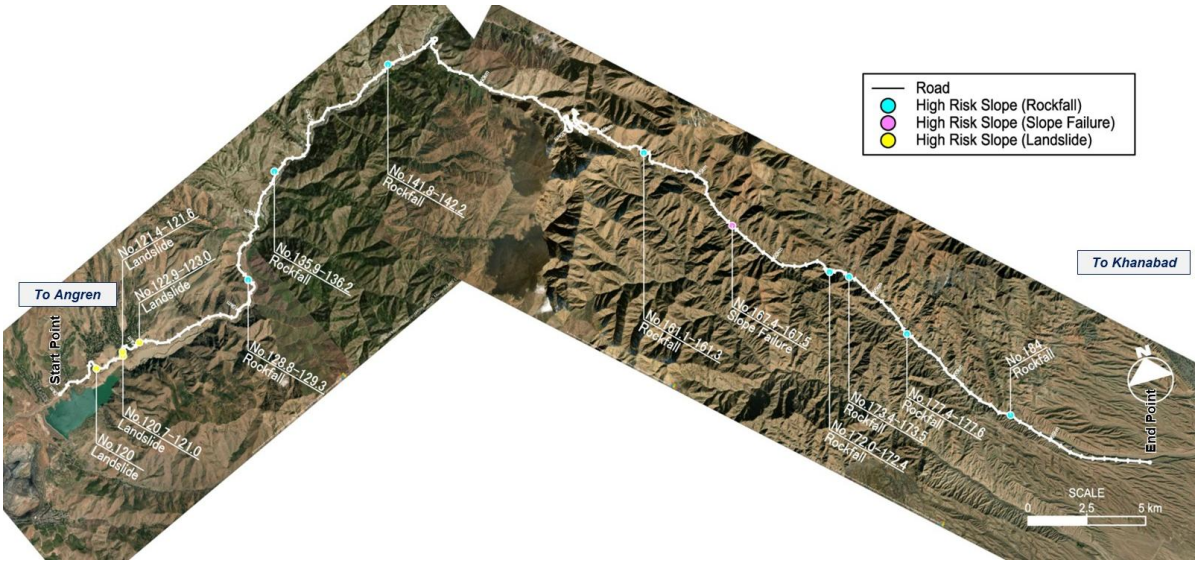
4.3.2 RD-2: A373 (103-177km Post) "Tashkent-Osh"

It is an international road, A373 (four-lane road) that connects Angren mine to Khanabad and passes through mountainous areas (the Kamchik Pass) at an altitude of about 2,000m, and there are many hazardous slopes of landslide and rockfall. Rockfalls and landslides have occurred every year and have caused road closures.

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is 24,279 vehicles per day, and this road is an important route connecting the Fergana Basin and Tashkent for logistics, commuting, etc. In terms of logistics, it is the main international road for domestic and international logistics, with many trucks transporting fruits, textile products, cotton, etc.

The location map on the candidate project (RD-2), the status of hazardous slopes of landslides, and expected countermeasures for hazardous slopes are shown in Figure 4-26, Figure 4-27 and Table 4-6.



Source: JICA Survey Team

Figure 4-26 Location Map on Candidate Project (RD-2)



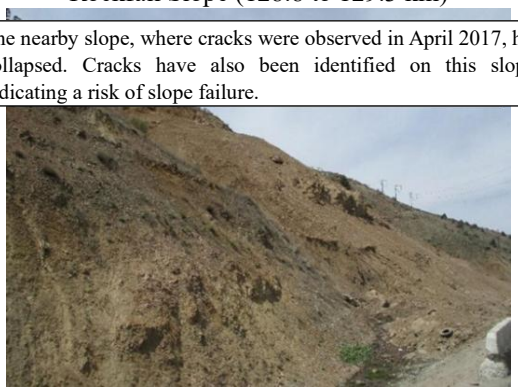
Landslide Slope (123.0km)



Rockfall Slope (128.8 to 129.3 km)



Rockfall Slope (135.9 to 136.2km)



Rockfall Slope (167.4 to 167.5km)

Source: Report on the Study for Formulation of Capacity Development Project for Landslide Prevention on the Tashkent-Osh Road at Kamchik Pass

Figure 4-27 Status of Hazardous Slopes (RD-2)

Table 4-6 Expected Countermeasures for Hazardous Slopes (RD-2)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
120.0 km	100	200	Landslide	Anchor + Steel Pipe Pile + Drainage Work
120.7-121.0 km	250	100	Landslide	Anchor + Steel Pipe Pile + Drainage Work + Cutting Work
121.4 -121.6 km	150	80	Landslide	Anchor + Steel Pipe Pile + Drainage Work
122.9 -123.0 km	60	80	Landslide	Drainage Work + Cutting Work
128.8 -129.3 km	500	20	Rockfall	Rockfall Net
135.9 -136.2 km	250	85	Rockfall	Rockfall Net
141.8 -142.2 km	360	20	Rockfall	Rockfall Net + Rock Fence
161.1 -161.3 km	200	50	Rockfall	Cutting Work (Carried out by CR)
167.4 -167.5 km	100	40	Slope Failure	Concrete Framework
172.0 -172.4 km	400	23	Rockfall	Rock Removal Work + Rockfall Net
173.4 -173.5 km	100	40	Rockfall	Rock Removal Work + Rockfall Net
177.4 -177.6 km	250	20	Rockfall	Rock Removal Work + Rockfall Net
184.0 km	50	40	Rockfall	Rockfall Net

4.3.3 RD-3: M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"

It is an international road, M39 (two-lane road) that connects Yanakishlak, located south of Samarkand, to Kishylk and passes through a mountainous area (Takhtaqoracha Pass) with many hazardous slopes of

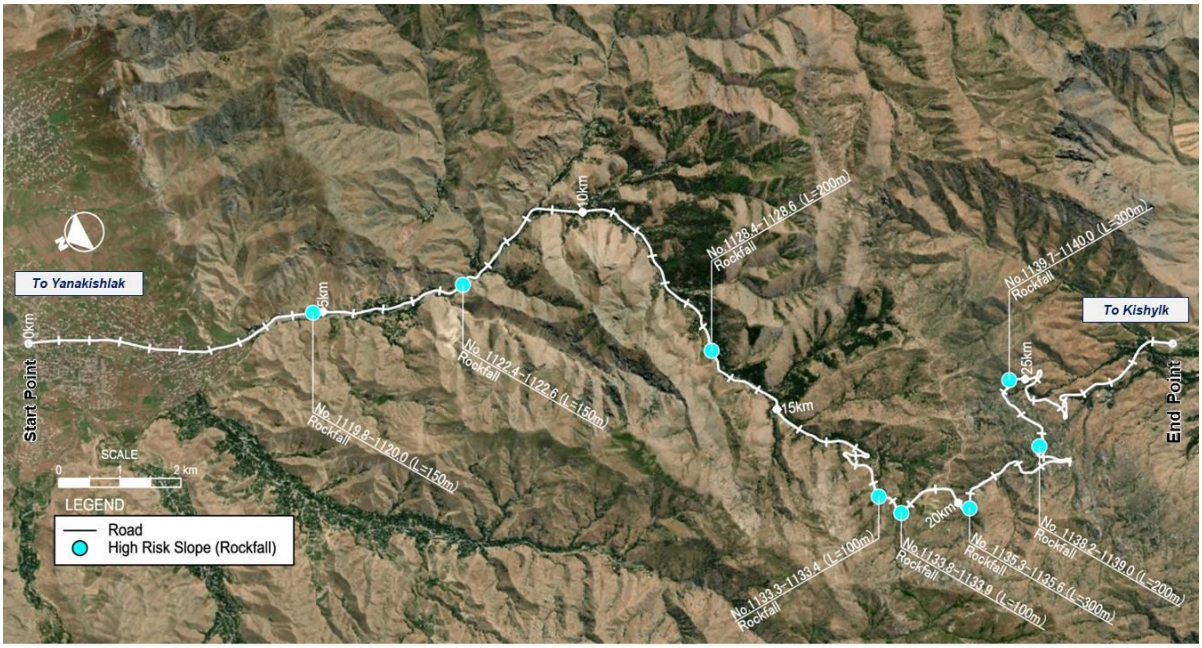
rockfall where rockfalls have occurred every year (In 2024, rockfall incidents resulted in casualties.).

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is 11,789 vehicles per day, and there is a large flow of people, including tourists, intercity commuters, and commuters to Samarkand. It is part of an international logistics route on the Caspian Sea route and plays a major role in the transportation of supplies, agricultural products, etc.

The location map on the candidate project (RD-3), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-28, Figure 4-29 and Table 4-7.

In addition, the project area is currently considering a new bypass road with a mountain tunnel (RO-10) as an existing road improvement project, and Korean and French consultants have previously conducted a preliminary study on tunnel routing (see Figure 4-20). The study calls for the construction of a long tunnel along the steep mountain road section crossing the Takhtaqoracha Pass (hereafter referred to as the Takhtaqoracha Pass Tunnel Project), which would allow for the avoidance of the high-risk slopes of rockfall. However, only preliminary studies have been conducted for the Takhtaqoracha Pass Tunnel Project, and even if the project progresses smoothly, it is expected to take more than 10 years for the tunnel to be operational. Even after the tunnel is operational, the existing road will remain an important alternative route to the tunnel, and therefore, slope countermeasures are highly necessary for the existing road (M39) in the Takhtaqoracha Pass.



Source: JICA Survey Team

Figure 4-28 Location Map on Candidate Project (RD-3)



Rockfall Slope (1124.4 to 1124.5km)



Rockfall Slope (1128.4 to 1128.6km)



Rockfall Slope (1133.3 to 1133.4km)



Rockfall Slope (1133.8 to 1133.9km)

Source: JICA Survey Team

Figure 4-29 Status of Hazardous Slopes (RD-3)

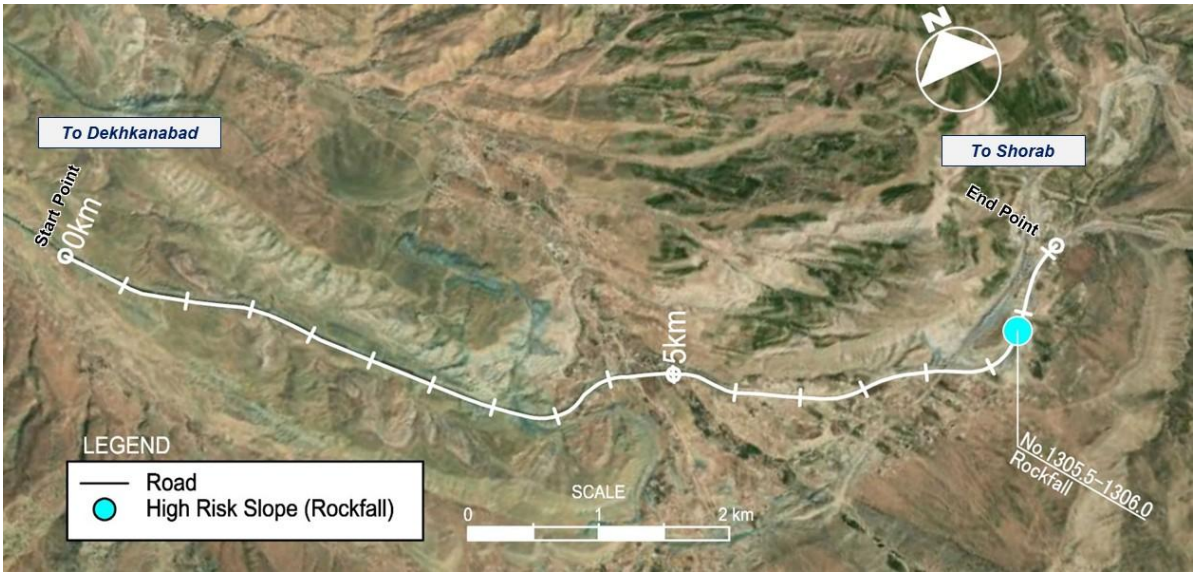
Table 4-7 Expected Countermeasures for Hazardous Slopes (RD-3)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
1121.8-1122.0km	150	20	Rockfall	Rockfall Net
1128.4-1128.6km	200	12	Rockfall	Rockfall Net
1133.3-1133.4km	100	20	Rockfall	Rockfall Net
1133.8-1138.9km	100	20	Rockfall	Rockfall Net
1135.3-1135.6km	300	20	Rockfall	Rockfall Net
1138.2-1138.4km	200	20	Rockfall	Rockfall Net
1139.7-1140.0km	300	24	Rockfall	Rockfall Net

4.3.4 RD-4: M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"

It is an international road, M39 (two-lane road) that connects Dekhkanabad, located southwest of Guzar, to Shorab and passes through hilly areas with a hazardous slope of rockfall. The traffic volume is 13,263 vehicles per day. This road is mainly used for travelling between mountain areas and transporting light freight, supplies, agricultural products, etc.

The location map on the candidate project (RD-4), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-30, Figure 4-31 and Table 4-8.



Source: JICA Survey Team

Figure 4-30 Location Map on Candidate Project (RD-4)



Rockfall Slope (1305.5 to 1306.0km)



Rockfall Slope (1305.5 to 1306.0km)

Source: Prepared by JICA Survey Team based on Google Earth

Figure 4-31 Status of Hazardous Slopes (RD-4)

Table 4-8 Expected Countermeasures for Hazardous Slopes (RD-4)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
1305.5-1306.0km	400	20	Rockfall	Rockfall Net

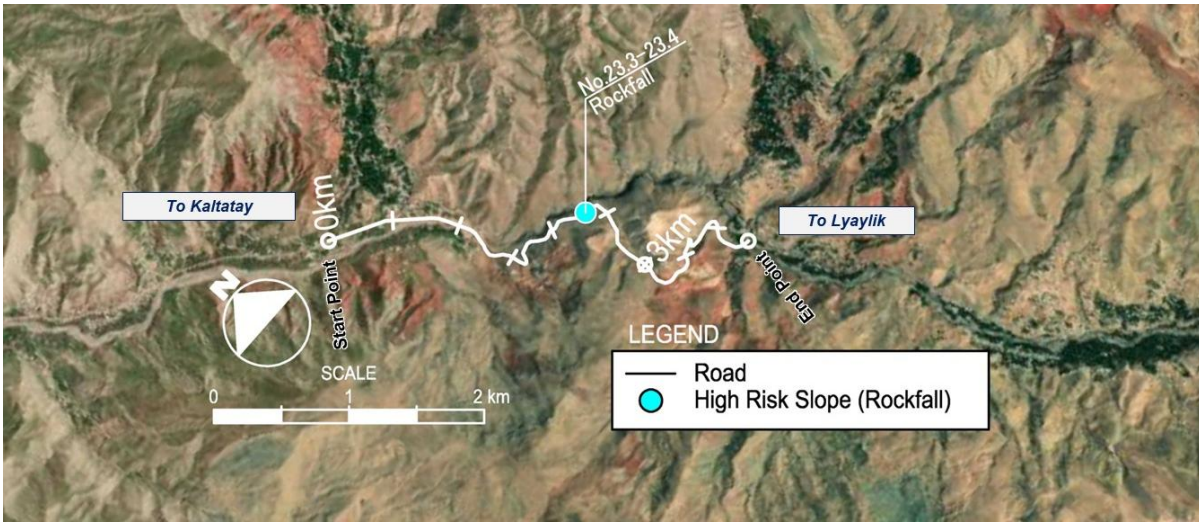
4.3.5 RD-5: D149 (21-25 km Post) "Langar-Maidanak"

It is a national highway D149 (two-lane road) that connects Kaltatay, located northeast of Guzar, to Lyaylik and passes through hilly areas with a hazardous slope of rockfall.

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is 4,607 vehicles/day, and this road is mainly used for daily traveling between settlements and for small-scale logistics of agricultural products.

The location map on the candidate project (RD-5), the status of hazardous slopes of landslides, and expected countermeasures for hazardous slopes are shown in Figure 4-32, Figure 4-33 and Table 4-9.



Source: JICA Survey Team

Figure 4-32 Location Map on Candidate Project (RD-5)



Rockfall Slope (23.3-23.4km)



Rockfall Slope (23.3-23.4km)

Source: Prepared by JICA Survey Team based on Google Earth

Figure 4-33 Status of Hazardous Slopes (RD-5)

Table 4-9 Expected Countermeasures for Hazardous Slopes (RD-5)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
23.3-23.4km	100	20	Rockfall	Rockfall Net

4.3.6 RD-6: M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"

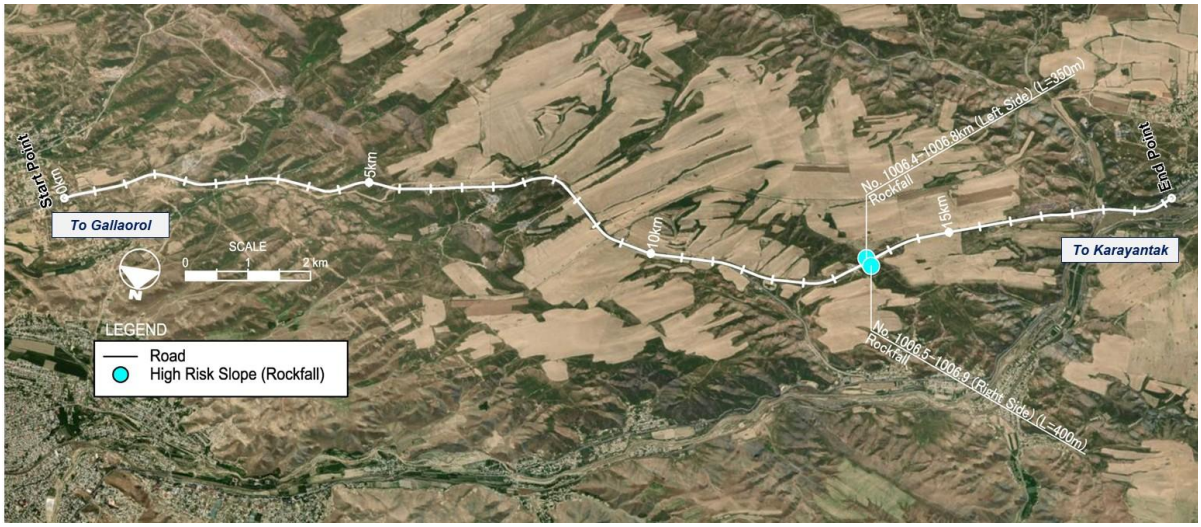
It is an international road M39 (four-lane road) that connects Gallaorol to Karayantak. There are hazardous slopes of rockfall in some sections.

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is approximately 40,000 to 45,000 vehicles per day. It is an international road

connecting major cities, and there is a large flow of people for business, commuting, etc. In terms of logistics, it is part of the Caspian Sea route, and is an important route for the transportation of industrial products, agricultural products, etc.

The location map on the candidate project (RD-6), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-34, Figure 4-35 and Table 4-10.



Source: JICA Survey Team

Figure 4-34 Location Map on Candidate Project (RD-6)



Rockfall Slope (1006.4 to 1006.9km)



Rockfall Slope (1006.5 to 1006.9km)



Rockfall Slope (1006.4 to 1006.8km)



Rockfall Slope (1006.4 to 1006.8km)

Source: JICA Survey Team

Figure 4-35 Status of Hazardous Slopes (RD-6)

Table 4-10 Expected Countermeasures for Hazardous Slopes (RD-6)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
1006.4-1006.8km (Left)	350	20	Rockfall	Rockfall Net
1006.5-1006.9km (Right)	400	20	Rockfall	Rockfall Net

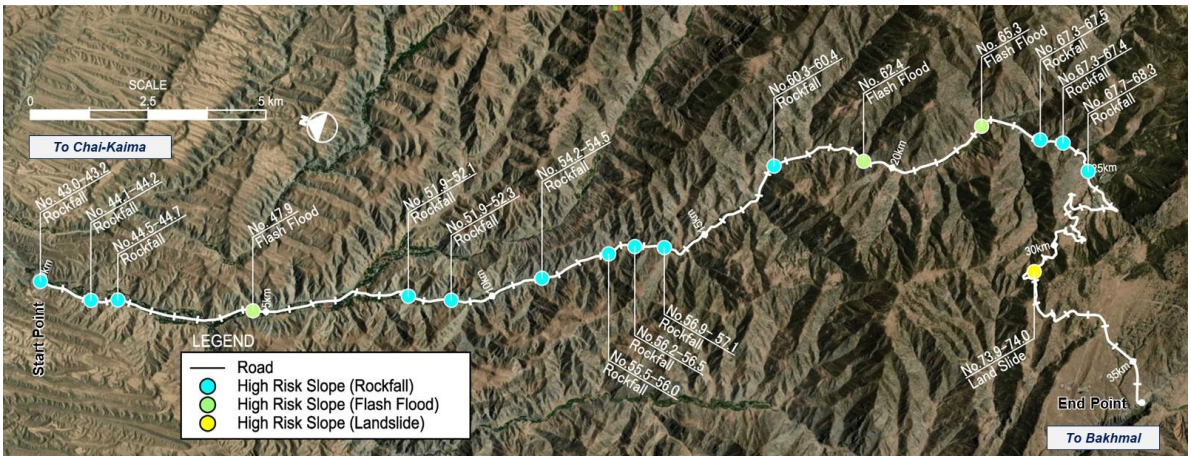
4.3.7 RD-7: D052 (43-79 km Post) "Dashtobod-Zomin- Bakhmal-Gallaorol"

It is a national highway D52 (two-lane road) that connects Chai-Kaima to Bakhmal and passes through steep mountainous areas with many hazardous sections of rockfall and debris flow (flash flood).

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is approximately 9,000 to 10,000 vehicles per day. This road is mainly used for tourists travelling to Zaamin Nature Park and resort areas and for transporting regional goods such as agricultural produce and local goods. This road is located in a nature reserve area (National Park).

The location map on the candidate project (RD-7), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-36, Figure 4-37 and Table 4-11.



Source: JICA Survey Team

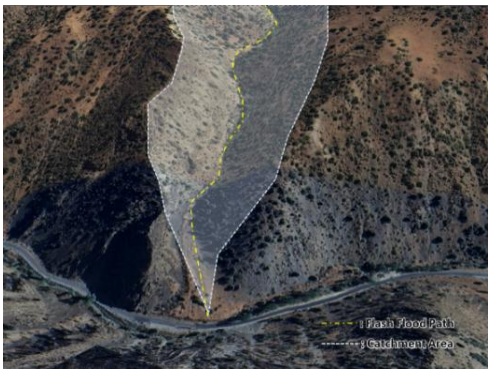
Figure 4-36 Location Map on Candidate Project (RD-7)



Debris Flow (Flash Flood) Slope (47.9km)



Rockfall Slope (56.9 to 57.1km)



Debris Flow (Flash Flood) Slope (62.4km)



Landslide Slope (73.9 to 74.0km)

Source: Prepared by JICA Survey Team based on Google Earth

Figure 4-37 Status of Hazardous Slopes (RD-7)

Table 4-11 Expected Countermeasures for Hazardous Slopes (RD-7)

Station No.	Hazardous Area			Disaster Types	Expected Countermeasures
	L (m)	B or H (m)	Place		
43.0-43.2km	200	3	—	Rockfall	Rock Fence
44.1-44.2km	150	20	—	Rockfall	Rockfall Net
44.5-44.7km	150	3	—	Rockfall	Rock Fence
47.9km	—	—	2	Flash Flood	Sabo Dum
51.0-51.7km	700	3	—	Rockfall	Rock Fence
51.9-52.1km	250	3	—	Rockfall	Rock Fence
54.2-54.5km	250	3	—	Rockfall	Rock Fence
55.5-56.0km	500	20	—	Rockfall	Rockfall Net
56.2-56.5km	300	20	—	Rockfall	Rockfall Net
56.9-57.1km	150	20	—	Rockfall	Rockfall Net
60.3-60.4km	100	3	—	Rockfall	Rock Fence
62.4km	—	—	1	Flash Flood	Sabo Dum
65.3km	—	—	1	Flash Flood	Sabo Dum
66.5-66.8km	300	3	—	Rockfall	Rock Fence
67.3-67.5km	150	20	—	Rockfall	Rock Net
67.7-68.3km	600	20	—	Rockfall	Rock Net
73.9-74.0km	50	50	—	Landslide	Anchor + Drainage Work

4.3.8 RD-8: D050 "M39 (38-47km Post) “Uchtepa Settlement-Jizzakh City”

It is a national highway D50 (two-lane road) that connects Gallaorol to Jizzakh and passes through hilly areas with several hazardous slopes of rockfall.

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is approximately 9,000 to 10,000 vehicles per day. There is a lot of traffic for intercity

travel and commuting, and this road plays an important function for domestic logistics via Jizzakh and as an alternative route of the international road M39 which functions for a large amount of distribution of goods and daily necessities.

The location map on the candidate project (RD-8), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-38, Figure 4-39 and Table 4-12.



Source: JICA Survey Team

Figure 4-38 Location Map on Candidate Project (RD-8)



Rockfall Slope (39.4 to 39.5km)



Rockfall Slope (42.9 to 43.2km)



Rockfall Slope (45.0 to 45.2km)



Rockfall Slope (45.7 to 45.85km)

Source: JICA Survey Team

Figure 4-39 Status of Hazardous Slopes (RD-8)

Table 4-12 Expected Countermeasures for Hazardous Slopes (RD-8)

Station No.	Hazardous Area		Disaster Types	Expected Countermeasures
	L (m)	B or H (m)		
38.8-38.9km	100	10	Rockfall	Rockfall Net
39.4-39.5km	100	20	Rockfall	Rockfall Net
42.9-43.2km	300	20	Rockfall	Rockfall Net
44.8-45.0km	170	20	Rockfall	Rockfall Net
45.0-45.2km	200	20	Rockfall	Rockfall Net
45.7-45.9km	200	20	Rockfall	Rockfall Net

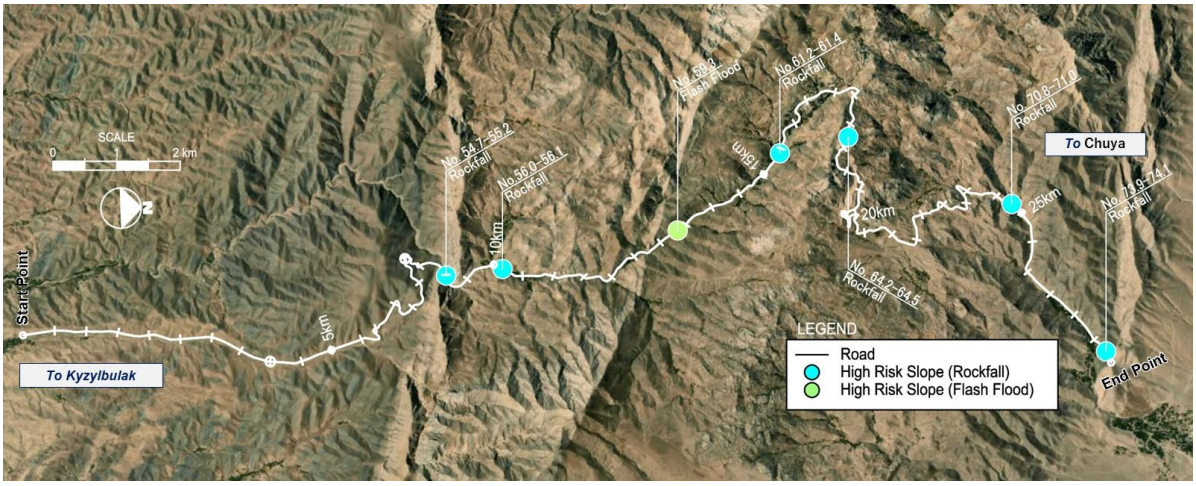
4.3.9 RD-9: D075 (46-77 km Post)"Oqtosh-Yangirobot–Langar–Chuya"

It is a national highway D75 (two-lane road) that connects Kyzylbulak to Chuya and passes through steep mountainous areas with many hazardous slopes with rockfall and debris flow (flash flood).

The project involves implementing slope protection measures along the existing road to address rockfalls, landslides, and other slope-related hazards. These measures are expected to ensure safer traffic conditions.

The traffic volume is approximately 1,300 to 1,500 vehicles per day. Most of the traffic is from rural mountain areas and tourists to the historical city in Nurata and for transporting logistics of local agricultural products, etc.

The location map on the candidate project (RD-8), the status of hazardous slopes of landslides and expected countermeasures for hazardous slopes are shown in Figure 4-40, Figure 4-41 and Table 4-13.



Source: JICA Survey Team

Figure 4-40 Location Map on Candidate Project (RD-9)



Rockfall Slope (54.7-55.2km)



Rockfall Slope (56.0-56.1km)



Rockfall Slope (59.3km)



Rockfall Slope (51.2-61.4km)

Source: JICA Survey Team

Figure 4-41 Status of Hazardous Slopes (RD-9)

Table 4-13 Expected Countermeasures for Hazardous Slopes (RD-9)

Station No.	Hazardous Area			Disaster Types	Expected Countermeasures
	L (m)	B or H (m)	Place		
54.7-55.2km	450	20	—	Rockfall	Rock Fence
56.0-56.1km	70	20	—	Rockfall	Rock Fence
59.3km	—	—	1	Flash Flood	Sabo Dum
61.2-61.4km	150	3	—	Rockfall	Rock Fence

Station No.	Hazardous Area			Disaster Types	Expected Countermeasures
	L (m)	B or H (m)	Place		
64.2-64.5km	300	20	—	Rockfall	Rock Fence
70.8-71.0km	150	20	—	Rockfall	Rock Fence
73.9-74.1km	200	20	—	Rockfall	Rock Fence
54.7-55.2km	450	20	—	Rockfall	Rock Fence
56.0-56.1km	70	20	—	Rockfall	Rockfall Net

4.4 Railway Projects

Of the 14 projects proposed by UTY, five (5) are candidate railway projects (see Table 4-14), excluding the nine projects for which the financing source has already been decided. The following is an overview of the five projects.

In common with all the candidate projects below, there is a possibility that the loan amount may be reduced by co-financing with other institutions or by dividing the scope by sections or facilities, instead of implementing the entire section with a Japanese ODA Loan. For reference, in the Pap-Namangan-Andijan electrification project, USD 80 million (45%) is provided by ADB and USD 97.45 million (55%) by the Government of Uzbekistan. The Bukhara-Misken-Urgench-Khiva electrification project is being financed by AIIB with USD 108 million (24%), ADB with USD 162 million (36%), and the governments of CAREC member countries with USD 175.65 million (40%).

Table 4-14 Candidate Railway Projects

No.	Projects	Scope	Length
RW-1	Construction of electrified railway along the "Samarkand-Urgut" route	Double-tracking	Approx. 50km
RW-2	Construction of electrified railway along the "Tashkent-Parkent" route	Double-tracking	Approx. 40km
RW-3	Electrification of Navoi-Uchkuduk railway line	Electrification of Existing Line	Approx. 300km
RW-4	Construction of second electrified railway line Tashkent-Angren	Double-tracking	Approx. 100km
RW-5	Construction of the second track of electrified high-speed railway line on Navoi-Bukhara section	Construction of New Railway	Approx. 90km

NOTE: Descriptions of candidate projects are shown in Appendix-1.

4.4.1 Construction of Electrified Railway along the "Samarkand-Urgut" Route

The project involves the construction of a new single-track electrified railway line of approximately 50 km, connecting Samarkand, the second-largest city in Uzbekistan, to its suburban area, Urgut. The population of Urgut is 545,700 (2023, National Statistics Committee of the Republic of Uzbekistan). In addition, a Free Economic Zone (FEZ) has been established in Urgut. The construction of this new railway line is expected to increase commuter demand and enhance intercity connectivity in the area.

In addition to stations at Jomboy, Samarkand, Tayloq, and Urgut, there will also be a stop on the border with Tajikistan at Jartepa. The specific alignment is unknown, but it will traverse the 4R-238 highway

and the Zarafshan River from the MAN plant.

Temiryo'l Loyihasi LLC, a subsidiary of UTY, is designing the line, and civil engineering work was started by a subsidiary of UTY in March 2025, but details are unknown.[1]

The primary service for this line is expected to be the “Električka,”(suburban train) which will stop at each station to transport passengers in the suburbs of the city. However, the existing “Electrycirca” trains operating in the suburbs of Tashkent are limited to approximately 4 services per day in each direction and are considered inconvenient.

The cost of the project is assumed to be USD 619.5 million, based on the Pap-Angren Electrified Railway Construction Project, 124 km, USD 1,536.6 million[2], which is proportional to the distance.



Source ：JICA Survey Team

Figure 4-42 Left Hand Side：“Električka” Right Hand Side: Time Table



Figure 4-43 Samarkand-Urgut Passing Points

[1] uz24 https://uz24.uz/uz/articles/urgut-25-3-2
[2] Implementation Completion Report Review
http://documents1.worldbank.org/curated/en/331221619195606129/pdf/Uzbekistan-Pap-Angren-Railway.pdf

4.4.2 Construction of Electrified Railway along the “Tashkent-Parkent” Route

The project involves the construction of a new single-track electrified railway line of approximately 23.8 km, connecting Tashkent, the capital city, to its suburban area, Parkent. The population of Parkent is 175,200 (2023, National Statistics Committee of the Republic of Uzbekistan). The construction of this new railway line is expected to strengthen short-distance commuting and support tourism-related transport.

The line passes through a hilly terrain with bridges and tunnels. There will be two stations with siding track along the line, but the details of the alignment are not yet known. “Električka” will mainly run on the line.

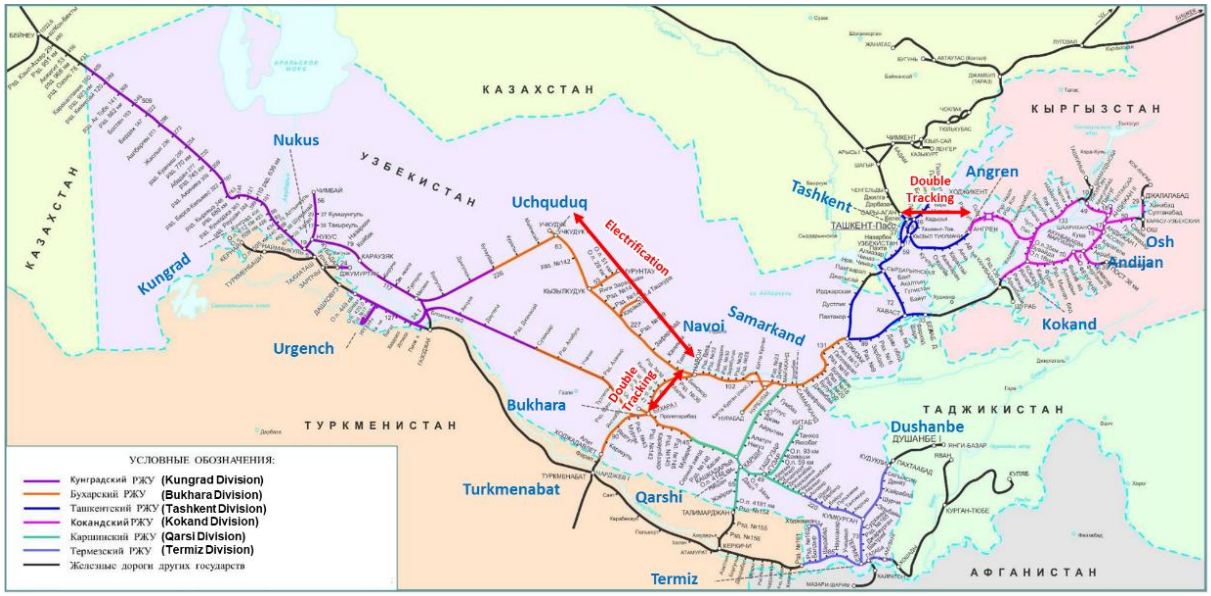
Civil works have started in January 2025 by UTY and its subsidiaries.

The cost is estimated at USD 495.6 million, calculated proportionally to the distance based on the Pap-Angren Electrified Railway Construction Project (124km, USD 1,536.6 million).



Figure 4-44 Tashkent-Parkent Passing Points

4.4.3 Electrification of Navoi-Uchkuduk Railway Line



Source ：UTY modified by JICA Survey Team

Figure 4-45 Map of Whole UTY Line

The project involves to electrify the existing single-track from Navoi, the capital of Navoi Region and an industrial city focused on mining, to Uchkuduk, an active producer of rare metals and uranium. Navoi Mining and Metallurgy Combinat (NMMC) produces 700-750 tU of uranium annually in Uchikduk. In addition, gold and silver mines, such as Muruntau and Zarafshan, are scattered along the line. Muruntau mine is said to be the second largest gold deposit in the world, producing approximately 1,700,000 ounces of gold in 2022. Navoi Power Plant is also located along the line and has an industrial siding as well as aforementioned mines.

Currently, there is no passenger traffic; freight trains operating 16 to 20 times per day (10 pairs per day). As mentioned above, the cargoes transported are uranium, rare metals, gold and silver ore, and due to their heavy weight, electrification could improve transportation efficiency and be a more environmentally friendly means of transportation. In addition, the entire route from Navoi to Tashkent is electrified, and when this section is electrified, electric locomotives can be operated in an integrated manner, which will also improve locomotive operating efficiency.

The electrification system will be AC 25,000 V, same as other sections of the line, and the project scope may also include track improvement and upgrading of the signalling system. The project is currently in the planning and feasibility study stages, and construction has not yet begun.

The cost is assumed to be USD 366 million, which is proportional to the distance, based on CAREC Corridor 2 (Pap-Namangan-Andijan Railway) Railway Electrification Project, 145.1 km, USD 177.45 million[3].

[3] CAREC HP https://www.carecprogram.org/?project=carec-corridor-2-pap-namangan-andijan-railway-electrification-project



Figure 4-46 Important Points of Navoi-Uchqduq Section

4.4.4 Construction of Second Electrified Railway Line Tashkent- Angren

The project involves to convert the existing single-track electrified section from the capital Tashkent to Angren, about 100 km east, to double-track electrification. This is part of the route to Fergana region and to Kyrgyz. The section from Angren to Pap and Andijan is over steep mountain passes in the 2000-meter-high West Tien Shan Mountains. Thus, double-tracking of this section is not easy, costly, and time-consuming. Unless further double-tracking in the direction of Pap is realized, double-tracking this section will not improve the line capacity for international transportation though this section is designated as CAREC corridor 2 and long-distance transportation to the Fergana Valley.

However, the presence of the Angren Power Plant and a number of factories along the line, all of which have industrial sidings, will greatly contribute to Uzbekistan's domestic demand for freight transport and to the demand for passengers in the suburbs.

At the time the survey team boarded the train, freight trains were waiting at all stations, and it is assumed that trains are already set to full track capacity.

Currently, there are 32 passenger trains per week, all of which are long distance trains to Andijan, with no suburban trains.

Although currently in the planning FS phase and construction has not started, according to a presidential resolution effective October 10, 2023, Almalyk Mining & Metallurgy Combinat (Almalyk GOK) is also responsible for the project and Akhangran freight terminal project.

The company mines and refines copper, gold, silver, molybdenum, and zinc. Annual production is approximately 148,500 tons of copper, 17 tons of gold, 196 tons of silver, and 110,000 tons of zinc.

The cost for the project is assumed to be USD 1,239 million, which is proportional to the distance, based

on Pap-Angren electrified Railway Construction Project, 124km, USD 1,536.6 million.



Figure 4-47 Important Points of Tashkent-Angren Section



Source: JICA Survey Team

Figure 4-48 Freight Train in Tashkent-Angren Section



Source: JICA Survey Team

Figure 4-49 Industrial Sidings

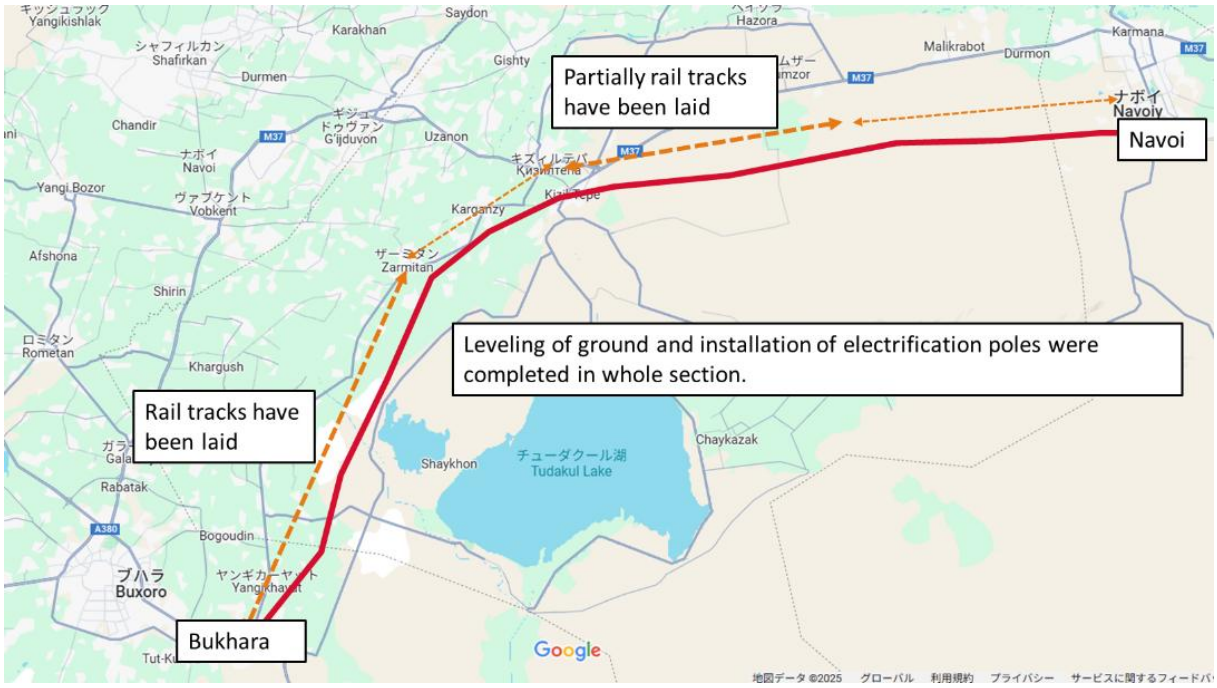
4.4.5 Construction of Second Track of Electrified High-speed Railway Line on Navoi -Bukhara Section

The project involves to double-tracking of the existing 92.3 km single-track electrified section from Navoi to Bukhara. This section is the most important corridor in Uzbekistan, running from Tashkent to Samarkand, Navoi, Bukhara, and Urgench, and the number of trains is expected to increase due to the double-tracking, which will greatly contribute to the expansion of passenger transportation. It is also called for in Uzbekistan 2030. Currently, about 70 passenger trains are operated per week, 28 of which are high-speed train, “Afrosiyob”.

It may also contribute to the connectivity with Turkmenistan and Kazakhstan since it is designated as CAREC corridor 2.

Currently, UTY itself is carrying out construction, civil, track installation and electrification work are already underway on some sections. According to TransLogistica[4], Civil works for 55.6 km have been completed, including 47 km of track installation.

The cost is assumed to be USD 400, which is proportional to the distance, based on Pap-Angren electrified Railway Construction Project, 124km, USD 1,536.6 million, excluding the portion that is completed.



Source: Observing by JICA Survey Team

Figure 4-50 Implementation Progress

[4] Trans Logistica https://trans.uz/en/news/construction-of-the-second-electrified-high-speed-railway-on-the-navoi-bukhara-section-starts#:~:text=Line%202%20of%20the%20,structures%20and%203%20maintenance%20buildings



With track and pole



Only with pole



Track installment

Source: JICA Survey Team

Figure 4-51 Construction Status

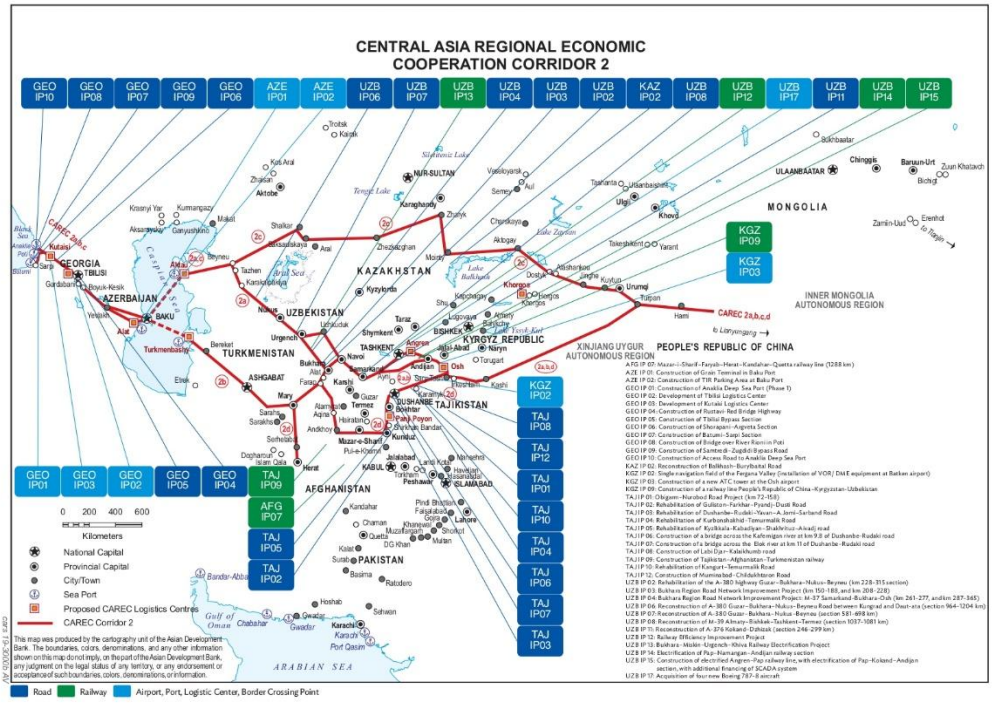
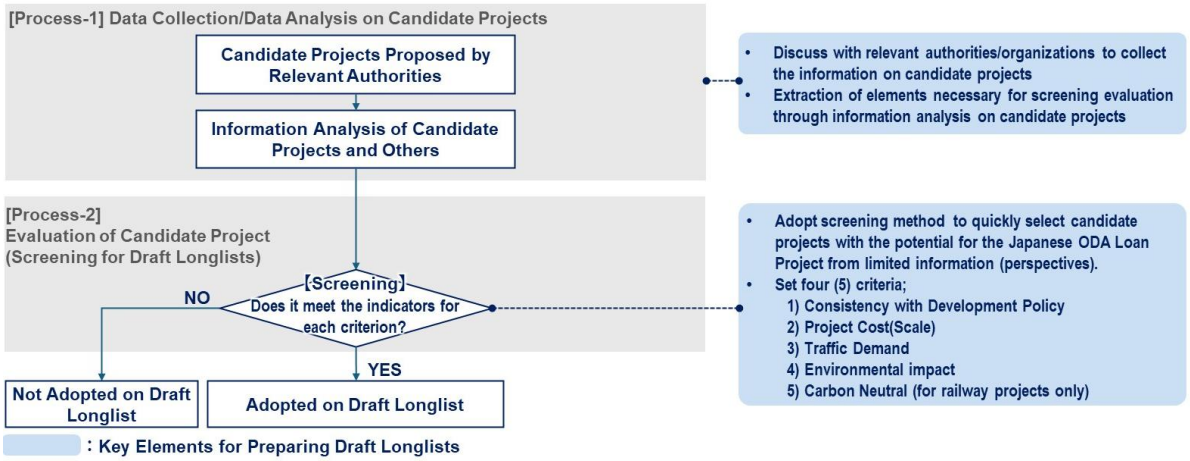


Figure 4-52 CAREC Corridor 2

5 PREPARATION OF DRAFT LONGLIST

5.1 Policy for Preparing Draft Longlist

Based on the analysis of information collected during the survey, draft longlists of candidate projects with potential for the Japanese ODA Loan Project were prepared. They were prepared for three subsectors (road/bridge, road disaster, and railway) following the process shown in Figure 5-1. The policy for preparing the draft longlists is as follows:



Source: JICA Survey Team

Figure 5-1 Preparation Process of Draft Longlists

PROCESS-1: Data Collection/Data Analysis on Candidate Projects

To select candidate projects for the draft longlists, which list the potential projects for Japanese ODA Loan Projects, information on the candidate projects is collected through discussions with relevant authorities and organizations. Based on this, the information required for screening evaluation to prepare the draft longlists, such as project scope, project area, surrounding environment, project scale, etc., is analyzed and extracted.

PROCESS-2: Evaluation of Candidate Projects (Screening for Draft Longlists)

In the draft longlist, a maximum of 30 road and bridge projects, 15 railway projects, and road disaster projects are selected. At the draft longlist stage, the selection is carried out using a screening method based on macro-level criteria to identify projects that have potential as yen loan projects.
The criteria include: (1) policy-level significance of the route, (2) traffic demand, (3) appropriateness of the project scale, and (4) environmental considerations.

Projects that meet all the indicators specified for each criterion below are selected as candidate projects for inclusion in the draft longlist.

5.2 Criteria and Indicator

5.2.1 Consistency with Development Policy

Numerical targets for national development in Uzbekistan were approved by Presidential Decree dated September 11, 2023 (No. UP-158). The implementation of the "Uzbekistan Strategy 2030" and the achievement of its numerical targets have been set as a priority task for all state agencies and organizations. The transport development policy is related to the goals of No. 53, No. 91, and No. 92 of the Uzbekistan Strategy 2030. The evaluation was conducted based on whether each project met the "target efficiency indicators to be achieved by 2030" in Goals No. 53, No. 91, and No. 92.

Table 5-1 Development Policy of Transportation and Transport in Uzbekistan Strategy 2030

No.	Goals	Efficiency Indicators to be Achieved by 2030
II. Establishing the Well-being of the People through Sustainable Economic Growth		
53	Advancement of international transport and logistics networks in Uzbekistan/ Improvement of potential in domestic transport systems	Road construction and repair/rehabilitation of 56,000 km Increase the proportion of electrified railways (to reach 65%) Increase in domestic transit freight transport volume (achieving 16 million tons) Construction of new high-speed railways between "Tashkent and Samarkand" and between "Samarkand, Navoi, and Bukhara" Increase in passenger transport capacity on the high-speed railways (achieving 2.5 times the passenger transport capacity)
V. Consistent and Continuous Policy based on the Principle of "Safe and Peace-Oriented Nation"		
91	Raising the level of practical cooperation in the Central Asia region	Free movement of citizens in the Central Asian countries Gradual achievement of the flow of goods, services, and capital without artificial restrictions Continuing efforts to create a common tourist space Developing a multifaceted and mutually beneficial relationship with Afghanistan Providing close support to Afghanistan's economic recovery Contributing to the realization of Afghanistan's transport and transit potential.
92	Developing mutually beneficial relationships with relevant countries, expanding international cooperation, and connecting to global production and supply chains	Further expanding existing relations with countries in South Asia, the Middle East, and Africa. Establishing mutually beneficial cooperation in new, promising areas Developing transport and logistics corridors that will open up opportunities for Uzbekistan to penetrate global markets

Source: Presidential Decree dated September 11, 2023 (UP-158)

5.2.2 Traffic Demand

5.2.2.1 Roads, Bridges, and Road Disaster Prevention

For the evaluation of traffic demand in road, bridge, and road disaster prevention projects, Uzbekistan's road classification system, as shown in Table 5-2, was used. Among these classifications, the top two classes with high route importance (in terms of traffic significance)— international roads and national highways—were selected as candidate projects for the longlist.

Table 5-2 Road Classification in Uzbekistan

Category	Road Classification
M / A	International Roads
D / P	National Highways
K / V	Local Roads

Source: JICA study team

5.2.2.2 Railways

Double-tracking and electrification projects were selected for the longlist based on whether the current number of passenger trains is 14 or more per week, although freight transportation is currently UTY's primary business, there is no timetable for the freight trains, so the evaluation is based on the current number of passenger trains only. Here, the criterion of 14 trains per week is used, assuming that a minimum level of service is maintained with two passenger trains per day.

Navoi－Uchquduq section is currently a freight-only line and does not meet the above criteria. Nevertheless, it has been retained on the longlist due to the presence of approximately 10 freight trains per day, the abundance of mineral resources such as uranium and copper along the route, and the expectation of significant future demand.

5.2.3 Project Cost

An Evaluation was conducted to determine whether the project cost of each candidate project is approximately 20 billion JPY (140 million USD), which is the average level of Japanese ODA loan projects in Uzbekistan to date.

The project costs are estimated by following the conditions in 5.2.3.1 to 5.2.3.4 .

5.2.3.1 Cost Estimation Methodology for Road Projects

Road project costs were estimated using unit prices derived from past road construction projects in Uzbekistan, as collected by the Road Commission (See Table 5-3).

The cost of bridges in the road projects is estimated by unit costs of bridge projects (see Table 5-4).

Table 5-3 Unit Prices for Road Construction

Pavement	Unit Price			Unit
	2Lane	4Lane	6Lane	
Asphalt	1.00	1.50	2.00	million USD/km
Concrete	1.30	2.50	3.70	

Source: Prepared by JICA survey team based on the results of interviews with CR

Table 5-4 Unit Prices for Bridge/Box Construction

Type of Structure	Unit Price	Unit
Bridge and overpass	0.002	million USD/m
Box culvert	0.001	

Source: Prepared by JICA survey team based on the results of interviews with CR

5.2.3.2 Cost Estimation Methodology for Bridge Projects

Bridge Project costs were estimated based on the bridge inventory sheets collected from CR.

5.2.3.3 Cost Estimation Methodology for Disaster Prevention Project

Road disaster project costs were estimated based on the information from past JICA survey projects.

Table 5-5 Unit Prices for Countermeasures for Road Disaster

Disaster Type	Countermeasures	Unit Cost
Rockfall	Rock Net	340 USD/m^2
	Rock Fence (H=3m)	6,500 USD/m
Landslide	Anchor + Drainage	1,655,000 USD/m^2
Debris flow	Sabo dam	1,380,000 USD/place

Source: JICA Survey Team

5.2.3.4 Cost Estimation Methodology for Railway Project

Railway project costs are estimated based on the information from past survey projects.

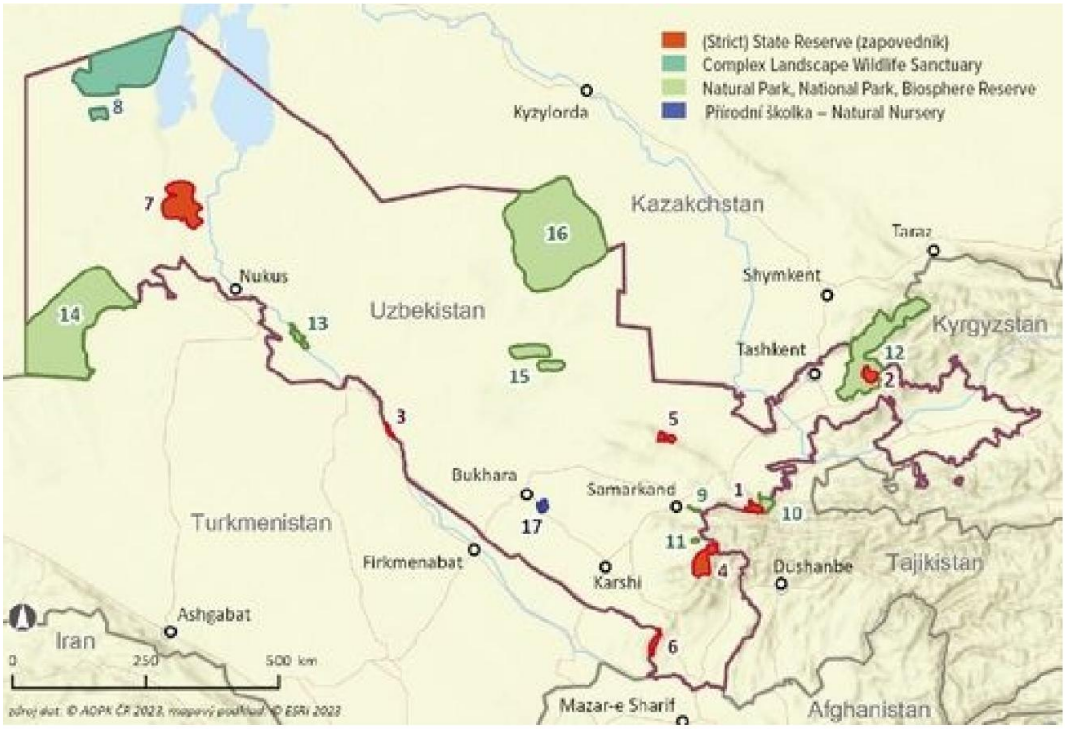
Table 5-6 Unit Prices for Project Type

Project Type	Unit Price	
Electrification	1.22	million USD/km
Double-tracking	12.39	

Source: JICA Survey Team

5.2.4 Environmental Impact

The projects selected for the longlist were those not located within the environmental protection areas shown in Figure 5-2.



Source: The Nature Conservation Journal 「Nature Conservation in Uzbekistan」

Figure 5-2 Protected Areas in Uzbekistan

5.3 Screening of Candidate Projects

5.3.1 Road Projects

The screening results for proposed projects in the road sector are presented in Table 5-7.

Table 5-7 Screening Result (Road Projects)

No.	Project Name	Criteria			Screening Results (OK or NG)
		Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
RO-1	A373 "Tashkent-Osh" highway (309 - 354 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 125 million USD Road Classification: A (International Road)	Not located in a nature conservation area	OK
RO-2	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 65 million USD Road Classification: D (National Highway)	Not located in a nature conservation area	OK
RO-3	A-377 "Samarkand sh-Ayniy" highway (0 - 36 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 60 million USD Road Classification: A (International Road)	Not located in a nature conservation area	OK
RO-4	M39 A "Khairaton entrance" highway (0 - 30 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 75 million USD Road Classification: M (International Road)	Not located in a nature conservation area	OK

No.	Project Name	Criteria			Screening Results (OK or NG)
		Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
RO-5	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 40 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 45 million USD Road Classification: D (National Highway)	Not located in a nature conservation area	OK
RO-6	A-376 "Ko'kon-Jizzakh" highway (14 - 45 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 55 million USD Road Classification: A (International Road)	Not located in a nature conservation area	OK
RO-7	D089 "Fergana city - Kuvasai city- (6 - 25 km)	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 35 million USD Road Classification: D (National Highway)	Not located in a nature conservation area	OK
RO-8	A380 "Guzar-Bukhara-Nukus-Beineu" highway (765–780 km)	Complies with the Uzbekistan Strategy 2030 (Goal No. 53)	Project cost: approx. 80 million USD Road Classification: A (International Road)	Not located in a nature conservation area	OK
RO-9	M37 "Samarkand-Bukhara-Turkmenbashi"(147-190km)	Complies with the Uzbekistan Strategy 2030 (Goal No. 53)	Project cost: approx. 145 million USD Road Classification: M (International Road)	Not located in a nature conservation area	OK
RO-10	M39 " Takhtaqoracha Tunnel Construction Project"	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	Project cost: approx. 262 million USD ※It is possible to limit the amount to US$140 million through Phased disbursement of the loan. Road Classification: M (International Road)	Not located in a nature conservation area ※Due to the presence of a national park near the project site, special consideration is required when considering bypass routes.	OK

Source: JICA Survey Team

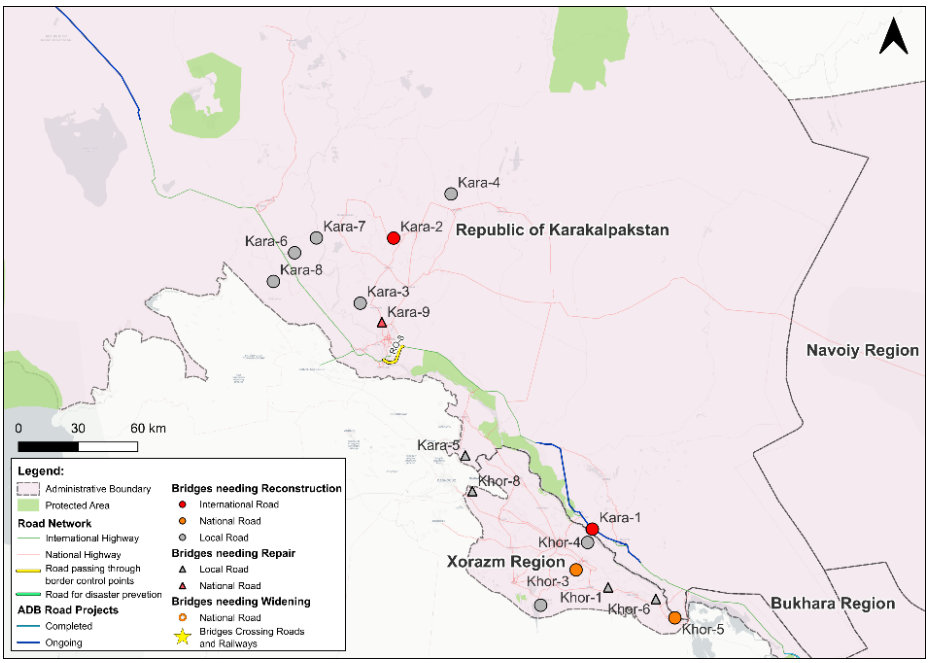
5.3.2 Bridge Projects

5.3.2.1 Republic of Karakalpakstan

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with stepped road surfaces due to settlement were observed. Their condition is poor compared to other regions.

Table 5-8 Screening Results (Bridge Projects: Republic of Karakalpakstan)

Map ID	No.	Project Name	Br. Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Kara-1	BR-1	Reconstruction of the bridge located at km 615.2 on the A-380 "Guzar-Bukhara-Nukus–Beyneu" Highway	36	Complies with the Uzbekistan Strategy	Project cost: approx. 0.4 million USD Road Classification: A (International Road)	Not located in a nature conservation area	OK
Kara-2	BR-2	Reconstruction of the bridge located at km 5.9 on the 95V119 "D233 Highway (61 km) – KS-1" Highway	34.63		Project cost: approx. 0.4 million USD Road Classification: D (National Highway)		OK
Kara-3	BR-3	Reconstruction of the bridge located at km 5.12 on the 95V149 "D233 Highway (from km 20) – Krantog Settlement" Highway	34.5		Project cost: approx. 0.4 million USD Road Classification: Local Road		NG
Kara-4	BR-4	Reconstruction of the bridge located at km 5.7 on the 95V082 "DFX Kuralpa – DFX Karauzyak" Highway	45.4		Project cost: approx. 0.4 million USD Road Classification: Local Road		NG
Kara-5	BR-5	Reconstruction of the bridge located at km 4.2 on the 95V047 "D238 Highway (from km 36) – 'Bozsalma' MFI" Highway	61.42		Project cost: approx. 0.8 million USD Road Classification: Local Road		NG
Kara-6	BR-6	Reconstruction of the bridge located at km 5.1 on the 95V126 "Qonliko‘l OFY – Bekjap Pumping Station – Shumonoy Railway Station" Highway	78.25		Project cost: approx. 0.5 million USD Road Classification: Local Road		NG
Kara-7	BR-7	Reconstruction of the bridge located at km 11.8 on the 95V125 "Navruz OFY – Jaykhun OFY – Ajiniyaz OFY" Highway	36.2		Project cost: approx. 0.6 million USD Road Classification: Local Road		NG
Kara-8	BR-8	Reconstruction of the bridge located at km 11.9 on the 95V058 "D235 Highway (from km 11) – Yenbekchi Settlement" Highway	42.7		Project cost: approx. 0.4 million USD Road Classification: Local Road		NG
Kara-9	BR-9	Reconstruction of the bridge located at km 8.8 on the D233 "Nukus City – Oqmang‘it City – Kegayli City – Chimboy City – Qozoqdaryo Settlement" Highway	120.9		Project cost: approx. 0.5 million USD Road Classification: D (National Highway)		OK



Source: Prepared by JICA Survey Team

Figure 5-3 Location Map on Bridge Candidate Projects (Republic of Karakalpakstan)



Kara-1 (A380)



Kara-2 (4R-259)



Kara-3 (Local)



Kara-4 (Local)

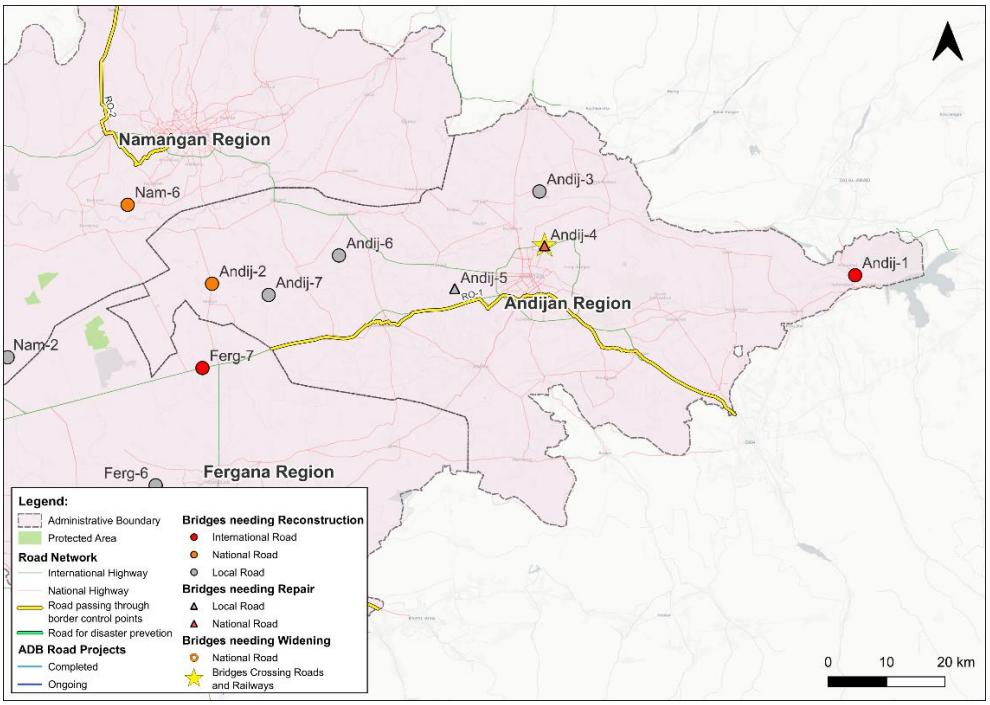
Figure 5-4 Bridge Condition Photo (Republic of Karakalpakstan)

5.3.2.2 Andijan Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Fragile structures are scattered.

Table 5-9 Screening Results (Bridge Projects: Andijan Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Andij-1	BR-10	Reconstruction of the bridge at km 582 on the M41 "Bishkek – Dushanbe – Termez" Highway	130.35	Complies with the Uzbekistan Strategy	Project cost: approx. 0.6 million USD Road Classification: M (International Road)	Not located in a nature conservation area	OK
Andij-2	BR-11	Reconstruction of the Zovur Bridge at km 41 on the D086 "Margilan City – Ulugnor District" Highway	36.7		Project cost: approx. 0.3 million USD Road Classification: D (National Highway)		OK
Andij-3	BR-12	Reconstruction of the bridge at km 10.7 on the 60V066 "Pastkishlok-Chuvama" Highway	46		Project cost: approx. 0.5 million USD Road Classification: Local Road		NG
Andij-4	BR-13	Reconstruction of the bridge at 14.22 km of D132 "Andijan public road" highway	72.6		Project cost: approx. 0.4 million USD Road Classification: D (National Highway)		OK
Andij-5	BR-14	Reconstruction of the bridge at km 5.3 on the 60V077 "Oltinkul Settlement – Kayirma Settlement" Highway	54.2		Project cost: approx. 0.4 million USD Road Classification: Local Road		NG
Andij-6	BR-15	Reconstruction of the Mazgilsay Bridge at PK 36.87 km on the 60V086 "Olimbek-Eshon-Sulaymonbek" Highway	28.7		Project cost approx. 0.3 million USD Road Classification: Local Road		NG
Andij-7	BR-16	Reconstruction of the KAK Canal Bridge at km 5 on the 60V098 "Komuna Darvozvkum-Shurtepa" Highway	42.7		Project cost: approx. 0.4 million USD Road Classification: Local Road		NG



Source: Prepared by JICA Survey Team

Figure 5-5 Location Map on Bridge Candidate Projects (Andijan Region)



Andij-1 (M41)



Andij-2 (4P126)



Andij-3 (Local)



Andij-5 (Local)

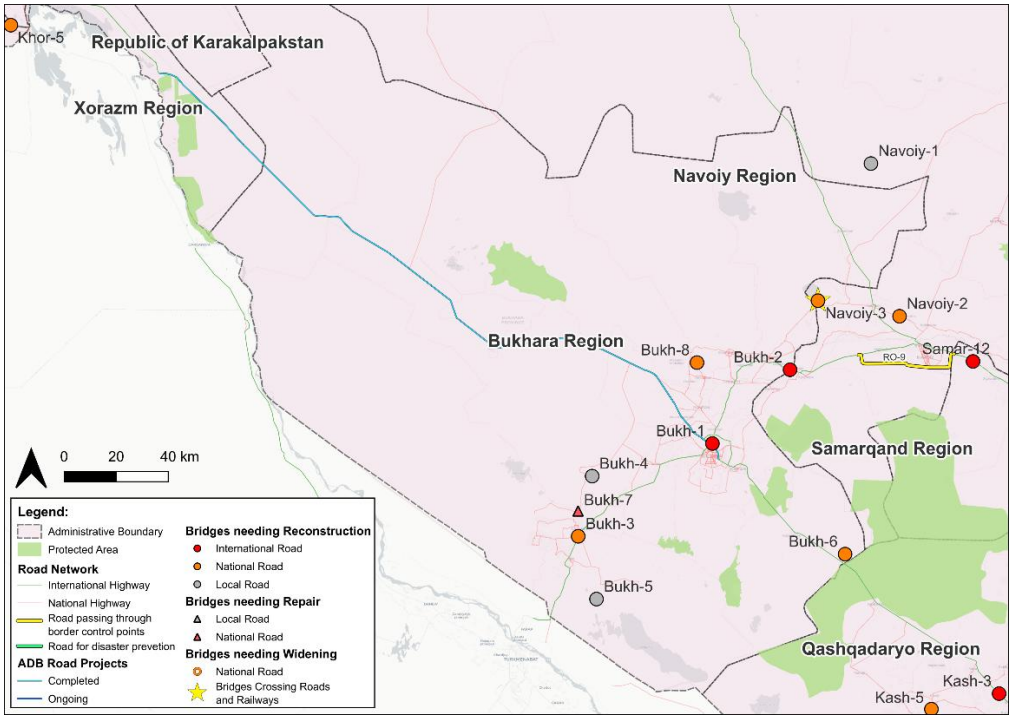
Figure 5-6 Bridge Condition Photo (Andijan Region)

5.3.2.3 Bukhara Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with caved-in road surfaces were identified. Their condition is poor compared to other states.

Table 5-10 Screening Results (Bukhara Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Bukh-1	BR-17	Reconstruction of the bridge at km 263.75 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway	36	Complies with the Uzbekistan Strategy	Project cost: approx. 0.7 million USD Road Classification: M (International Road)	Not located in a nature conservation area	OK
Bukh-2	BR-18	Reconstruction of the bridge at km 212.0 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway	92.8		Project cost: approx. 1.9 million USD Road Classification: M (International Road)		OK
Bukh-3	BR-19	Reconstruction of the bridge on the 4.650 km section of the D184 "Karakul city - Karakul railway station - Yangibazar village - Zhigachi village" highway	43		Project cost: approx. 0.5 million USD Road Classification: D (National Highway)		OK
Bukh-5	BR-20	Reconstruction of the bridge at km 8.0 on the 80V161 "Qirlishon Settlement – Duker Amu – Bukhara Canal" Highway	48		Project cost: approx. 0.5 million USD Road Classification: Local Road		NG
Bukh-6	BR-21	Reconstruction of the bridge at km 3.2 on the 80V183 "A380 Highway (from km 151) – 'Farhod' Pumping Station" Highway	36.6		Project cost: approx. 0.4 million USD Road Classification: Local Road		NG
Bukh-4	BR-22	Reconstruction of the bridge at km 17.7 on the D183 "D067 Highway (from km 374) – Mokhonkul Settlement – D175 Highway (to km 60)" Highway	53		Project cost: approx. 0.5 million USD Road Classification: Local Road		NG
Bukh-8	BR-23	Reconstruction of the bridge on the 3.3 km section of the highway 80V051 “80V026 highway (3 km) – D067 highway (307 km) – Shagal sand mine.”	27		Project cost: approx. 0.3 million USD Road Classification: D (National Highway)		OK
Bukh-7	BR-24	Reconstruction of the bridge at km 69.3 on the D175 "D198 Highway (from km 73) – A380 Highway (km 259) – Varakhsha Settlement – Mokhonkul Area – M37 Highway (to km 331)" Highway	32		Project cost: approx. 0.3 million USD Road Classification: D (National Highway)		OK



Source: Prepared by JICA Survey Team

Figure 5-7 Location Map on Bridge Candidate Projects (Bukhara Region)



Bukh-1 (M37)



Bukh-3 (4R76)



Bukh-5 (Other Road)



Bukh-7 (4R75)

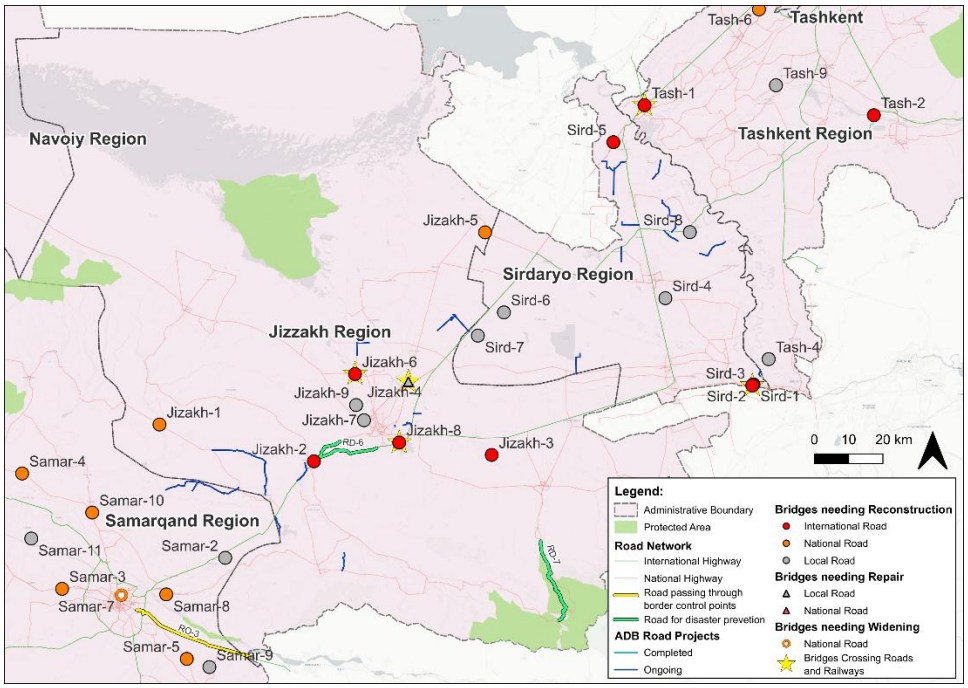
Figure 5-8 Bridge Condition Photo (Bukhara Region)

5.3.2.4 Jizakh Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with exposed foundations due to scouring were observed. Their condition is poor compared to other states.

Table 5-11 Screening Results (Jizakh Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Jizakh-4	BR-25	Reconstruction of the bridge over a canal at km 23+893 on the D047 "Jizzakh City – Paxtakor City – Dostlik City – Gagarin City – M39 Highway (to km 918)" Highway	26.5	Complies with the Uzbekistan Strategy	Project cost: approx. 0.8 million USD Road Classification: Local Road	Not located in a nature conservation area	NG
Jizakh-1	BR-26	Reconstruction of the bridge over a stream at km 49+800 on the D055 "M39 Highway (from km 1031) – Marjonbuloq City – Zarmitan City – Qo‘shrabot District" Highway	63.8		Project cost: approx. 0.7 million USD Road Classification: D (National Highway)		OK
Jizakh-2	BR-27	Reconstruction of the bridge over the Sangzor River at km 1014+760 on the M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" Highway	89.5		Project cost: approx. 1.7 million USD Road Classification: M (International Road)		OK
Jizakh-7	BR-28	Reconstruction of the bridge over a drainage canal at km 3+750 on the 25V010 "Jizzakh City – Sogdiana Settlement – D048 Highway (to km 6)" Highway	37.55		Project cost: approx. 0.5 million USD Road Classification: Local Road		NG
Jizakh-8	BR-29	Reconstruction of the overpass at km 3+500 on the 25V011 "Jizzakh City – Bobur Settlement – Khayrobad Settlement" Highway	73		Project cost: approx. 1.9 million USD Road Classification: Local Road		NG
Jizakh-9	BR-30	Reconstruction of the bridge over a canal at km 5+900 on the 25V054 "Ziyokor Settlement – Madaniyat Settlement – Yangidiyor Settlement" Highway	56.87		Project cost: approx. 0.9 million USD Road Classification: Local Road		NG
Jizakh-6	BR-31	Reconstruction of the bridge over a drainage canal at km 16+800 on the D051 "Sh. Rashidov District – Uchtepa Settlement – Oqtom Settlement – Forish District" Highway	54.6		Project cost: approx. 0.4 million USD Road Classification: D (National Road)		OK
Jizakh-5	BR-32	Reconstruction of the bridge over a drainage canal at km 81+902 on the D047 "Jizzakh City – Paxtakor City – Dostlik City – Gagarin City – M39 Highway (to km 918)" Highway	34.7		Project cost: approx. 0.6 million USD Road Classification: D (National Highway)		OK
Jizakh-3	BR-33	Reconstruction of the bridge over a canal at km 7+246 on the 25V029 "A376 Highway (from km 260) – 6th Railway Siding – Zomin City" Highway	40		Project cost: approx. 0.4 million USD Road Classification: M (International Road)		OK



Source: Prepared by JICA Survey Team

Figure 5-9 Location Map on Bridge Candidate Projects (Jizakh Region)



Jizakh-2 (M39)



Jizakh-3 (M39)



Jizakh-5 (4P35)



Jizakh-8 (M39)

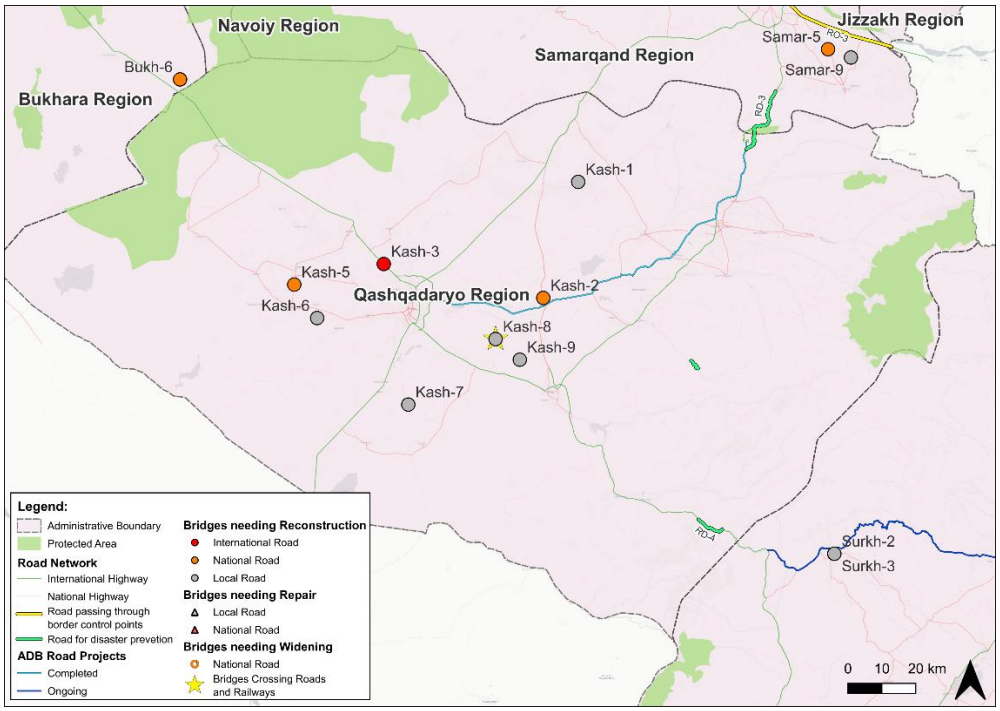
Figure 5-10 Bridge Condition Photo (Jizakh Region)

5.3.2.5 Kashkadarya Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with exposed foundations due to scouring were observed. Their condition is poor compared to other states.

Table 5-12 Screening Results (Kashkadarya Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Kash-1	BR-34	Reconstruction of the bridge over the Kashkadarya River at km 56.7 on the D148 "Yakkabog-Chiroqchi-Shorbozor" Highway	54	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.9 million USD • Road Classification: Local Road	Not located in a nature conservation area	NG
Kash-2	BR-35	Reconstruction of the bridge over the Kashkadarya River at km 125+800 on the A378 "Samarkand-Guzar" Highway	126		• Project cost: approx. 0.6 million USD • Road Classification: D (National Highway)		OK
Kash-3	BR-36	Reconstruction of the bridge over a drainage canal at km 70.2 on the A-380 "Guzar-Bukhara-Nukus-Beyneu" Highway	30		• Project cost: approx. 0.6 million USD • Road Classification: A (International Road)		OK
Kash-4	BR-37	Reconstruction of the bridge over a canal at km 1.3 on the 70V048 "Sherbek Settlement – Bolmas Settlement – Oktepa Settlement" Highway	57		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Kash-5	BR-38	Reconstruction of the bridge at km 38.9 on the D153 "Karshi City – Beshkent City – Kamashi Settlement – Kasbi Settlement – Koson City" Highway	34.7		• Project cost: approx. 0.4 million USD • Road Classification: D (National Highway)		OK
Kash-6	BR-39	Reconstruction of the bridge at km 27.7 on the 70V074 "Yangi Nishon City – Charagil Settlement – Fazli Settlement" Highway	35		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Kash-7	BR-40	Reconstruction of the bridge over a drainage canal at km 23 on the 70V064 "Tumorchi Settlement – Tolimarjon Power Station – D152 Highway (km 37)" Highway	30.5		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Kash-8	BR-41	Reconstruction of the bridge over a drainage canal at km 9 on the 70V040 "A-380 Highway (km 21) – Mangit Settlement – Yangikent Settlement – Qovchin Settlement" Highway, in the Yangikent MFI area	26		• Project cost: approx. 0.3 million USD • Road Classification: Local Road		NG
Kash-9	BR-42	Reconstruction of the bridge 70V041 “Guzor sh-Turtsary k,’’ at 17 km	36		• Project cost: approx. 0.3 million USD • Road Classification: Local Road		NG



Source: Prepared by JICA Survey Team

Figure 5-11 Location Map on Bridge Candidate Projects (Kashkadarya Region)



Kash-2 (4P87)



Kash-4 (Local)



Kash-5 (4P90)



Kash-9 (Local)

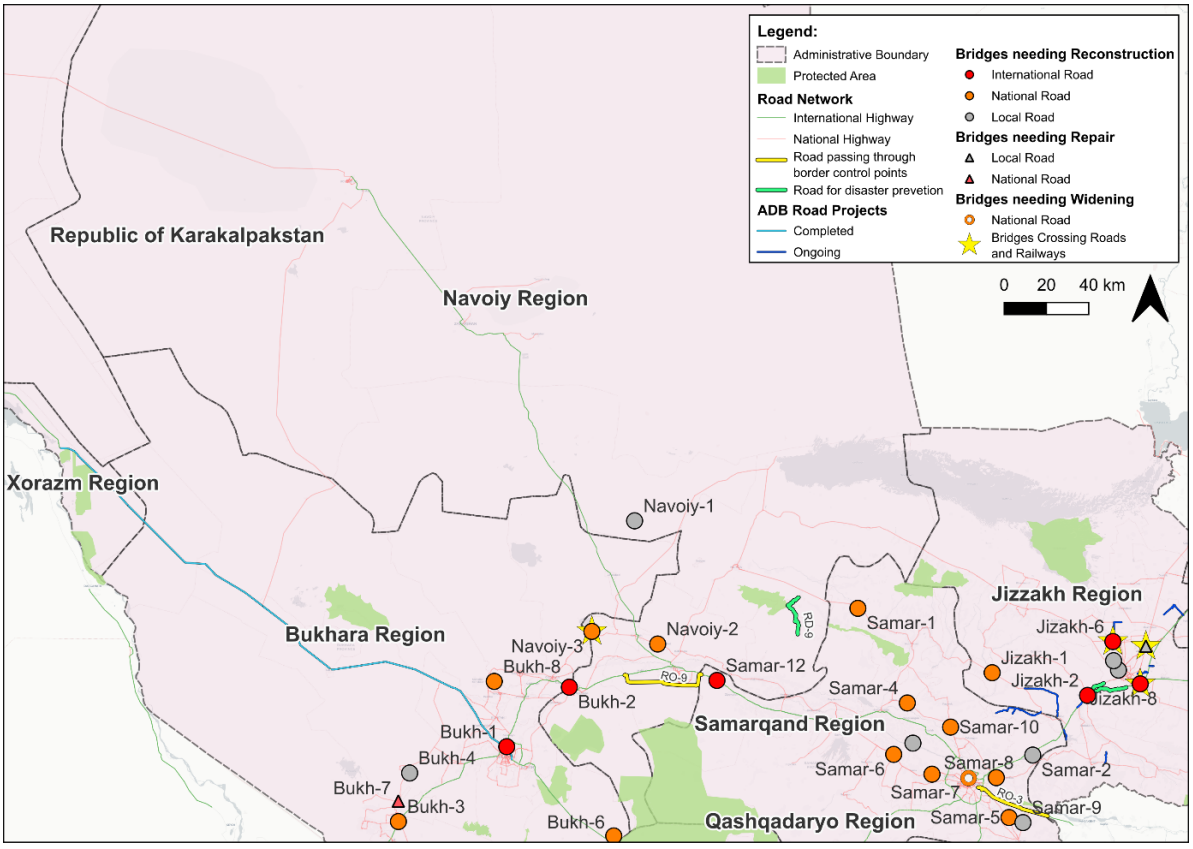
Figure 5-12 Bridge Condition Photo (Kashkadarya Region)

5.3.2.6 Navoiy Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Fragile structures are scattered.

Table 5-13 Screening Results (Navoiy Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Navoiy-1	BR-43	Reconstruction of the overpass at km 170.8 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway	124	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.5 million USD • Road Classification: Local Road	Not located in a nature conservation area	NG
Navoiy-2	BR-44	Reconstruction of the bridge at km 197 on the D067 "Zarafshan Tract" Highway	18		• Project cost: approx. 0.3 million USD • Road Classification: D (National Highway)		OK
Navoiy-3	BR-45	Reconstruction of the bridge at km 234.4 on the D067 "Zarafshan Tract" Highway	12		• Project cost: approx. 0.3 million USD • Road Classification: D (National Highway)		OK



Source: Prepared by JICA Survey Team

Figure 5-13 Location Map on Bridge Candidate Projects (Navoiy Region)



Navoiy-1 (Local)



Navoiy-2 (Local)



Navoiy-3 (Local)

Figure 5-14 Bridge Condition Photo (Navoiy Region)

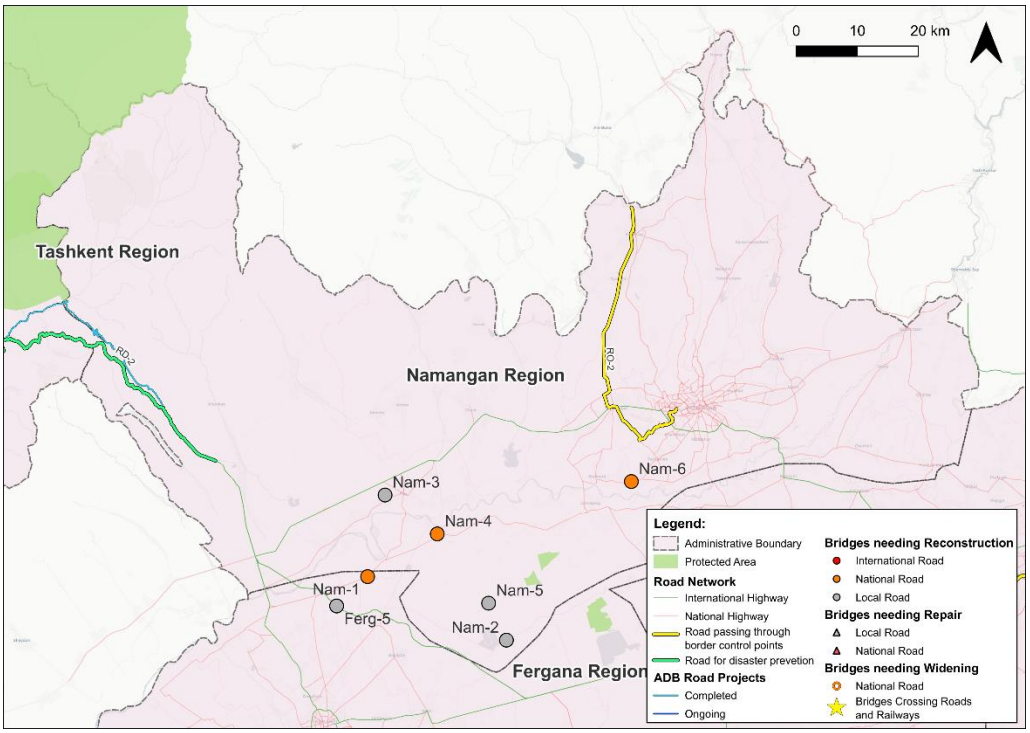
5.3.2.7 Namangan Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with stepped road surfaces due to settlement were observed. Their condition is poor compared to other states.

Table 5-14 Screening Results (Namangan Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Nam-1	BR-46	Reconstruction of the bridge over the Karakalpak Collector at km 76.021 on the D129 "Baliqchi District – Mingbuloq District – Naiman Settlement – Chagali Settlement – A373 'B' Highway (to km 9)" Highway	39.5	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.3 million USD • Road Classification: D (National Highway)	Not located in a nature conservation area	OK
Nam-2	BR-47	Reconstruction of the bridge over the Tashlama at km 6.53 on the 50V041 "Navbahor Settlement – Navruz Settlement" Highway	27.6		• Project cost: approx. 0.3 million USD • Road Classification: Local Road		NG
Nam-3	BR-48	Reconstruction of the bridge over the Northern Fergana Canal at km 1.1 on the 50V120 "Uyg‘ur Settlement – Mozor Settlement" Highway	26		• Project cost: approx. 0.3 million USD • Road Classification: Local Road		NG

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Nam-4	BR-49	Reconstruction of the bridge over the Okhunboboyev Canal at km PK61+375 on the D129 "Baliqchi District – Mingbuloq District – Naiman Settlement – Chagali Settlement – A373 'B' Highway (to km 9)" Highway	28.7		• Project cost: approx. 0.5 million USD • Road Classification: D (National Highway)		OK
Nam-5	BR-50	Reconstruction of the bridge over the Tashlama at km PK2+300 on the 50V040 "Mazgil Settlement – Madiyaroul Settlement" Highway	29.7		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Nam-6	BR-51	Reconstruction of the bridge over the Kosonsoy River at km PK14+00 on the V108 "Namangan City – Toshbuloq City – Shahand Settlement" Highway	50.9		• Project cost: approx. 0.5 million USD • Road Classification: D (National Highway)		OK



Source: Prepared by JICA Survey Team

Figure 5-15 Location Map on Bridge Candidate Projects (Namangan Region)



Nam-1 (4P126)



Nam-2 (Local)



Nam-3 (Local)



Nam-4 (4P126)

Figure 5-16 Bridge Condition Photo (Namangan Region)

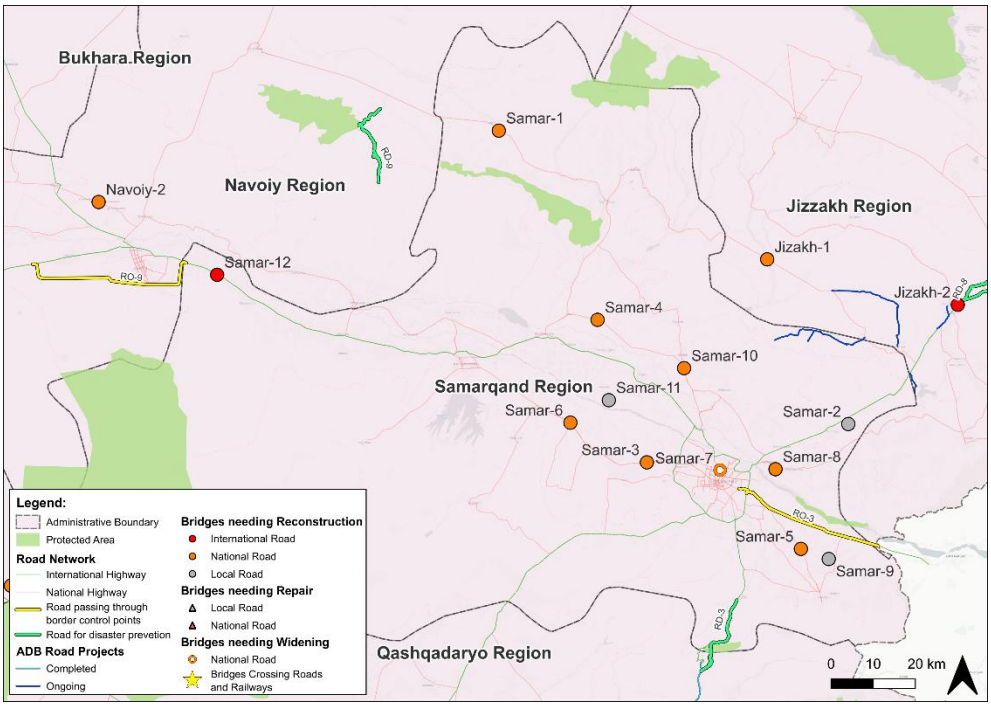
5.3.2.8 Samarkand Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Fragile structures are scattered.

Table 5-15 Screening Results (Samarkand Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Samar-1	BR-52	Reconstruction of the bridge at km 1 on the 30V159 "Josh Settlement – Minishkor Settlement" Highway	54	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.8 million USD • Road Classification: Local Road	Not located in a nature conservation area	NG
Samar-2	BR-53	Reconstruction of the bridge at km 3.7 on the 30V022 "Bulung'ur City – Mehnatobod Settlement – M39 Highway (to km 1054)" Highway	30		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Samar-3	BR-54	Reconstruction of the bridge at km 16 on the D070 "Juma City – Khonchorvoq Settlement – A378 Highway (to km 30)" Highway	10		• Project cost: approx. 0.8 million USD • Road Classification: D (National Highway)		OK

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Samar-12	BR-55	Reconstruction of the bridge at km 4.48 on the 30V068 "M37 Highway"	54		• Project cost: approx. 0.8 million USD • Road Classification: M (International Road)		OK
Samar-11	BR-56	Reconstruction of the bridge at km 3.5 on the 30V183 "Tangriravot Settlement – Oqsilot Settlement" Highway, Oqdaryo District	30		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Samar-10	BR-57	Reconstruction of the bridge at km 29 on the D047 "Zarafshan Tract" Highway, Payariq District	30		• Project cost: approx. 0.4 million USD • Road Classification : D (National Highway)		OK
Samar-9	BR-58	Reconstruction of the bridge at km 6 on the 30V030 "Shtab Settlement – Qayroqli Settlement – Sufi Settlement" Highway, Urgut District	36		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Samar-8	BR-59	Reconstruction of the bridge at km 5.6 on the V078 "Samarkand City – Bulung‘ur City – Barlos Settlement – Alamli Settlement" Highway, Jomboy District	36		• Project cost: approx. 0.5 million USD • Road Classification: D (National Highway)		OK
Samar-7	BR-60	Reconstruction of the bridge at km 0.08 on the M37 "Samarkand - Bukhara – Turkmenbashi" Highway	55		• Project cost: approx. 1.6 million USD • Road Classification: D (National Highway)		OK
Samar-6	BR-61	Reconstruction of the bridge at km 38.2 on the D065 "Juma City – Kattaqo‘rg‘on City" Highway, Pastdarg‘om District	60		• Project cost: approx. 1.2 million USD • Road Classification: D (National Highway)		OK
Samar-5	BR-62	Reconstruction of the bridge at km 12.2 on the D069 "Toyloq District – Urgut City" Highway, Urgut District	72		• Project cost: approx. 1.2 million USD • Road Classification: D (National Highway)		OK
Samar-4	BR-63	Reconstruction of the bridge at km 56 on the D067 "Zarafshan Tract" Highway, Ishtikhon District	28		• Project cost: approx. 0.6 million USD • Road Classification: D (National Highway)		OK



Source: Prepared by JICA Survey Team

Figure 5-17 Location Map on Bridge Candidate Projects (Samarkand Region)



Samar-2 (Local)



Samar-5 (4P50)



Samar-6 (4P47)



Samar-12 (M37)

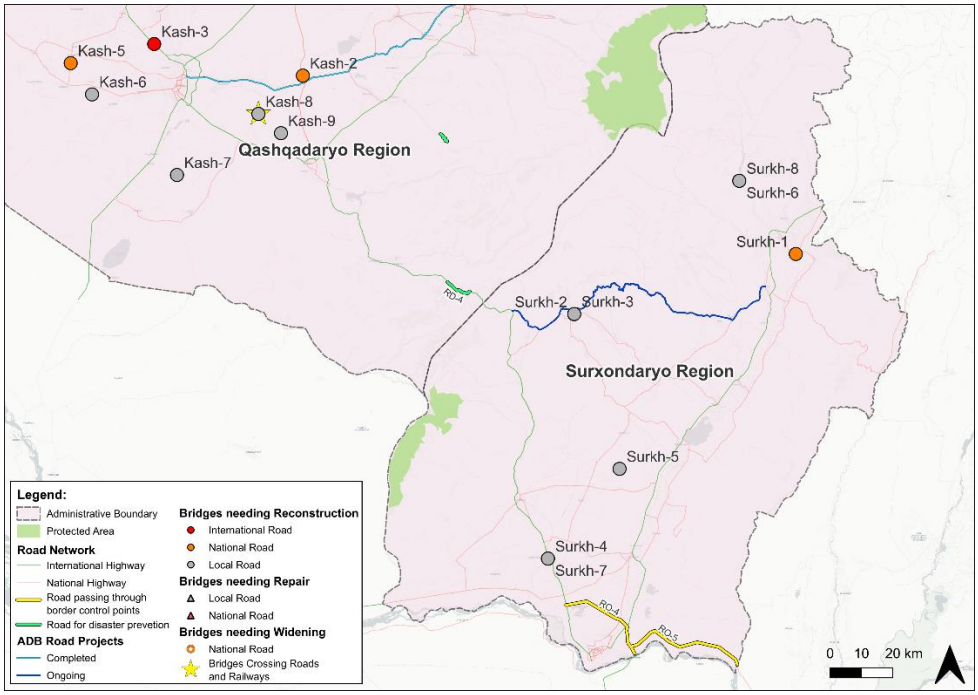
Figure 5-18 Bridge Condition Photo (Samarkand Region)

5.3.2.9 Surkhandarya Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Fragile structures are scattered.

Table 5-16 Screening Results (Surkhandarya Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Surkh-1	BR-64	Reconstruction of the bridge over the Obizarang River at km 10 on the D170b "Sariosiyo Settlement" Highway	Surkh-1	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.4 million USD • Road Classification: D (National Highway)	Not located in a nature conservation area	OK
Surkh-2	BR-65	Reconstruction of the bridge over the "O‘rdaksoy" Mudflow at km 1 on the 75V071 "Bog‘ibolo Settlement – Avlod Settlement" Highway	Surkh-2		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Surkh-3	BR-66	Reconstruction of the bridge over the "Hangaronsoy" Mudflow at km 3 on the 75V071 "Bog‘ibolo Settlement – Avlod Settlement" Highway	Surkh-3		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Surkh-4	BR-67	Reconstruction of the bridge at km 39 on the D165 "Jarkurgon City – Navshahar Settlement – Boldir Settlement – Turkmenistan Border" Highway	Surkh-4		• Project cost: approx. 3.0 million USD • Road Classification: Local Road		NG
Surkh-5	BR-68	Reconstruction of the bridge over the Bobotog Canal at km 7.7 on the 75V081 "Navbahor Settlement – Yonbosh Settlement" Highway	Surkh-5		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Surkh-6	BR-69	Reconstruction of the bridge at km 20.1 on the 75V044 "M41 Highway (from km 1464) – Topolon Reservoir" Highway	Surkh-6		• Project cost: approx. 1.1 million USD • Road Classification: Local Road		NG
Surkh-7	BR-70	Reconstruction of the bridge at km 26 on the 75V062 "Ulug‘bek Settlement – Tallimaron Settlement – Zang Canal" Highway	Surkh-7		• Project cost: approx.0.4 million USD • Road Classification: Local Road		NG
Surkh-8	BR-71	75V-048 Reconstruction of the bridge at 8.9 km of the Tortuli-Gazarak-Erman highway	Surkh-8		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG



Source: Prepared by JICA Survey Team

Figure 5-19 Location Map on Bridge Candidate Projects (Surkhandarya Region)



Surkh-1 (4P108)



Surkh-4 (Local)



Surkh-6 (Local)



Surkh-7 (Local)

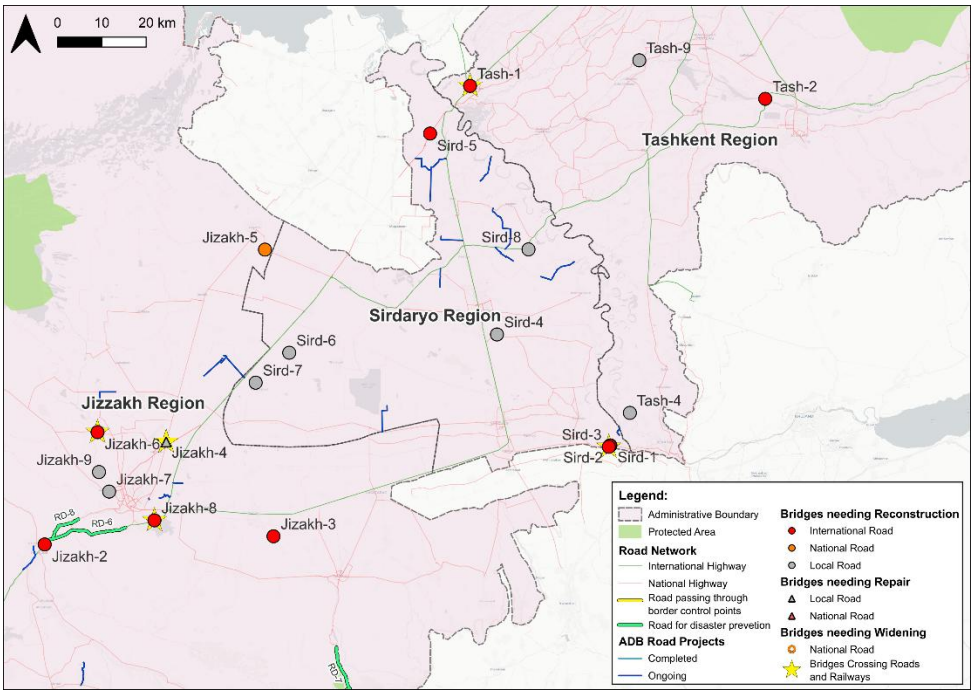
Figure 5-20 Bridge Condition Photo (Surkhandarya Region)

5.3.2.10 Syrdarya Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Fragile structures are scattered.

Table 5-17 Screening Results (Syrdarya Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Sird-1	BR-72	Reconstruction of the bridge at km PK0+210 on the 20V020a "A376 Highway (from km 25)" Highway	50.9	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.5 million USD • Road Classification: A (International Road)	Not located in a nature conservation area	OK
Sird-2	BR-73	Reconstruction of the bridge at km PK0+310 on the 20V020a "A376 Highway (from km 25)" Highway	50.9		• Project cost: approx. 0.5 million USD • Road Classification: A (International Road)		OK
Sird-3	BR-74	Reconstruction of the overpass bridge at km 0+525 on the 20V020a "A376 Highway (from km 25)" Highway	50.9		• Project cost: approx. 0.5 million USD • Road Classification: A (International Road)		OK
Sird-4	BR-75	Reconstruction of the bridge at km PK1+800 on the 20V014d "Gulistan City" Highway	30.5		• Project cost: approx. 0.3 million USD • Road Classification: Local Road		NG
Sird-5	BR-76	Reconstruction of the bridge at km PK881+720 on the M-39 "Almaty – Bishkek – Tashkent – Shahrisabz – Termez" Highway	67.1		• Project cost: approx. 0.6 million USD • Road Classification: M (International Road)		OK
Sird-6	BR-77	Reconstruction of the 30.0 km-long bridge at km 18+150 on the D063 "D031 Highway (from km 27) – Paxtaobod Settlement – D042 Highway (to km 59)" Highway	30		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Sird-7	BR-78	Reconstruction of the 27.0 km-long bridge at km 3+00 on the 20V030 "M39 Highway (from km 943) – Paxtaobod Settlement – D045 Highway (km 3) – Bostan Settlement" Highway	27		• Project cost: approx. 0.3 million USD • Road Class: Local Road		NG
Sird-8	BR-79	Reconstruction of the 30 km-long bridge at km 4+050 on the 20V040 "Yoshliq Settlement – Paymard Settlement" Highway	30		• Project cost: approx. 0.3 million USD • Road Classification: Local Road		NG



Source: Prepared by JICA Survey Team

Figure 5-21 Location Map on Bridge Candidate Projects (Syrdarya Region)



Sird-2 (A376)



Sird-4 (Local)



Sird-5 (M39)



Sird-7 (Local)

Figure 5-22 Bridge Condition Photo (Syrdarya Region)

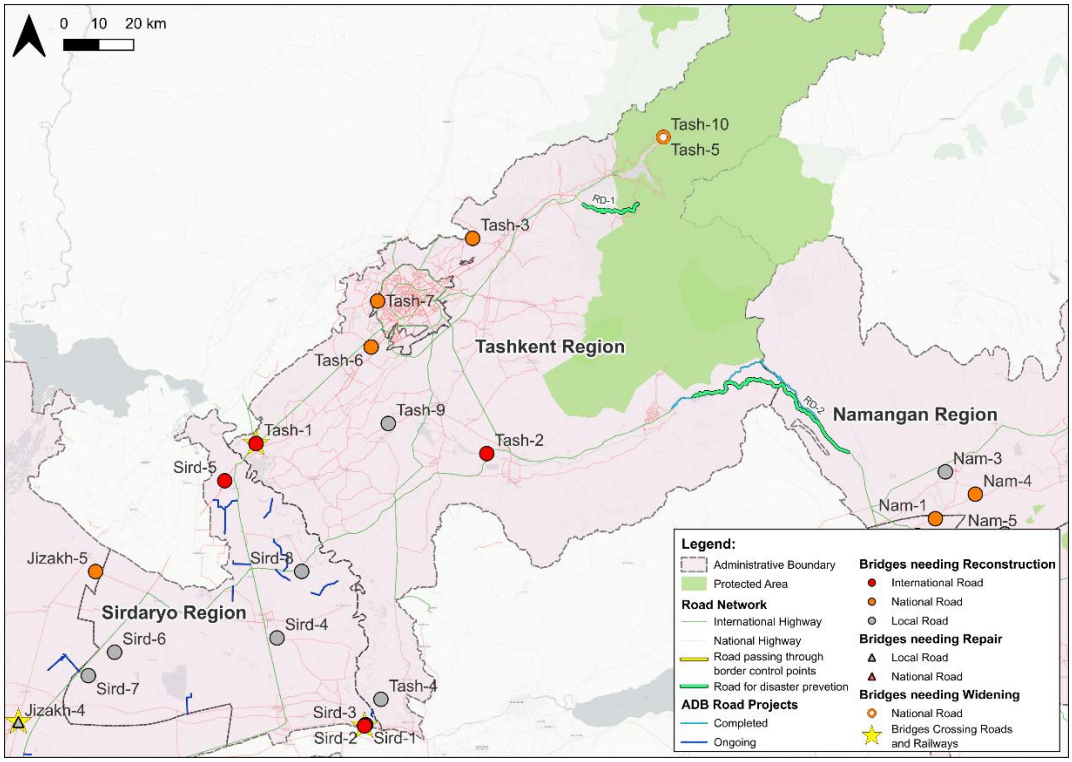
5.3.2.11 Tashkent Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Fragile structures are scattered. Many of the bridges are long, but many are screened NG because they are along other roads or in environmental protection zones.

Table 5-18 Screening Results (Tashkent Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Tash-1	BR-80	Reconstruction of the bridge over the railway (left side) at km 865+200 on the M-39 "Almaty — Bishkek — Tashkent — Shahrisabz — Termez" Highway	166	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.5 million USD • Road Classification: M (International Road)	Not located in a nature conservation area	OK
Tash-2	BR-81	Repair of the bridge over the Angren River at km 11+358 on the A-373a "A-373 Highway – Ohangaron– Bo'ka – Sardoba – M39 Highway (km 918) (from km 45) Branch" Highway	228		• Project cost: approx. 2.3 million USD • Road Classification: A (International Road)		OK
Tash-3	BR-82	Reconstruction of the bridge over the Bo'zsuv at km 10+980 on the D005 "Tashkent City – Qibray City – May Settlement" Highway	48.5		• Project cost: approx. 0.6 million USD • Road Classification: D (National Highway)		OK
Tash-4	BR-83	Construction of a 300-meter bridge over the Syrdarya River connecting the Dustlik and Yangiovul neighborhoods in the Bekabad district of Tashkent region, whose construction has been suspended	300		• Project cost: approx. 11.6 million USD • Road Classification: Local Road		NG
Tash-5	BR-84	Repair of the bridge over the Pskom River at km 49+600 on the D010 "Chorbog'Reservoir Ring Highway"	265		• Project cost: approx. 3.1 million USD • Road Classification: D (National Highway)	Under the environmental protection	NG
Tash-6	BR-85	Reconstruction of the bridge over the Jun Canal at km 2+370 on the D025a "M-39 Highway to M34 Highway (from km 823) Branch" Highway	17.3		• Project cost: approx. 0.6 million USD • Road Classification: D (National Highway)	Not located in a nature conservation area	OK
Tash-7	BR-86	Repair of the bridge over the Bo'zsuv at km 0+050 on the D031 "D001 Highway (from km 7) – Nazarbek Settlement – Harakat Settlement – Yonariq Settlement" Highway	51		• Project cost: approx. 0.6 million USD • Road Classification: D (National Highway)		OK
Tash-8	BR-87	Repair of the bridge over the Qizilsoy at km 2+300 on the 10V138 "Kangli Settlement – Qursoy Settlement" Highway	42.6		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Tash-9	BR-88	Repair of the bridge over the Qorasuv River at km 2+120 on the 10V130b "D022 Highway to Beshsari Settlement (from km 14) Branch Highway (24 km)"	42.6		• Project cost: approx. 0.5 million USD • Road Class: Local Road		NG

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Tash-10	BR-89	Reconstruction of the bridge over the Bo'zsuv River at km 2+120 on the 10V161b "D006 Highway to Special Facility (from km 33) Branch Highway (24 km)"	43.1		• Project cost: approx. 0.7 million USD • Road Classification: D (National Highway)	Under the environmental protection	NG



Source: Prepared by JICA Survey Team

Figure 5-23 Location Map on Bridge Candidate Projects (Tashkent Region)



Tash-2 (A373)



Tash-4 (Local)



Tash-5 (4P10)



Tash-10 (4P10)

Figure 5-24 Bridge Condition Photo (Tashkent Region)

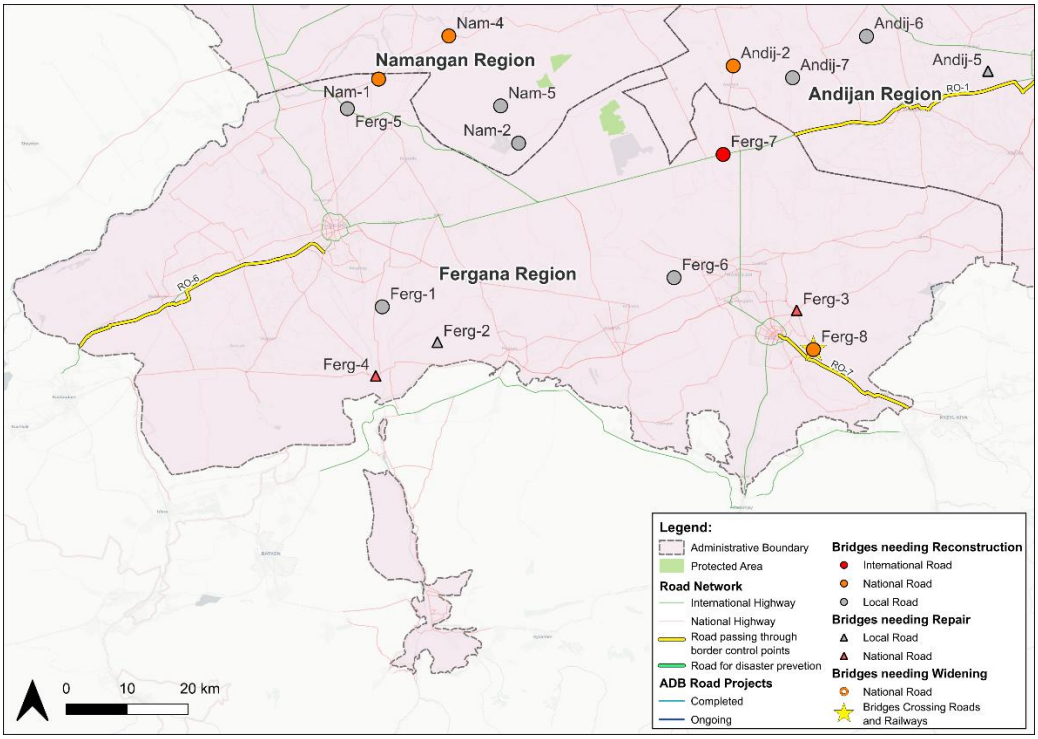
5.3.2.12 Fergana Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with stepped road surfaces due to settlement were observed. Their condition is poor compared to other states.

Table 5-19 Screening Results (Fergana Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Ferg-1	BR-90	Reconstruction of the bridge at km 44 on the D122 "Jomashuy City – Tegirmon Settlement – Navbahor Settlement – Buvayda Settlement – Kokand City" Highway	54	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.4 million USD • Road Classification: Local Road	Not located in a nature conservation area	NG
Ferg-2	BR-91	Reconstruction of the bridge at km 9 on the 40V053 "Qoratepa Settlement – Qirg‘izqo‘rg‘oncha Settlement" Highway	40.2		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG
Ferg-3	BR-92	Reconstruction of the bridge at km 195.7 on the D105 "Fergana Ring Highway"	46.2		• Project cost: approx. 0.4 million USD • Road Classification: D (National Highway)		OK
Ferg-4	BR-93	Reconstruction of the bridge at km 60.3 on the D093 "Margilan City – Rishton City – Oqchi Settlement – Karimdevona Settlement – Tajikistan Border" Highway	45		• Project cost: approx. 0.4 million USD • Road Classification: D (National Highway)		OK
Ferg-5	BR-94	Reconstruction of the bridge at km 0 on the 40V166 "D096 Highway (from km 16) – Boy Settlement" Highway	63.4		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Ferg-6	BR-95	Reconstruction of the bridge on the 6th km section of the highway "Kumtepa village - Boltako'l village - Tinchlik village" 40V121	36		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Ferg-7	BR-96	Reconstruction of the bridge at 276 km of the A-373 "Tashkent-Osh" highway	22		• Project cost: approx. 0.4 million USD • Road Classification: A (International Road)		OK
Ferg-8	BR-97	Reconstruction of the overpass on the 1.9 km section of the "Kochkorchi-Syrlimachit-Arabmozor" highway, Fergana region, Fergana city, 40V100	48		• Project cost: approx. 0.4 million USD • Road Classification: Local Road		NG



Source: Prepared by JICA Survey Team

Figure 5-25 Location Map on Bridge Candidate Projects (Fergana Region)



Ferg-3 (D105)



Ferg-5 (Local)



Ferg-7 (A373)



Ferg-8 (Local)

Figure 5-26 Bridge Condition Photo (Fergana Region)

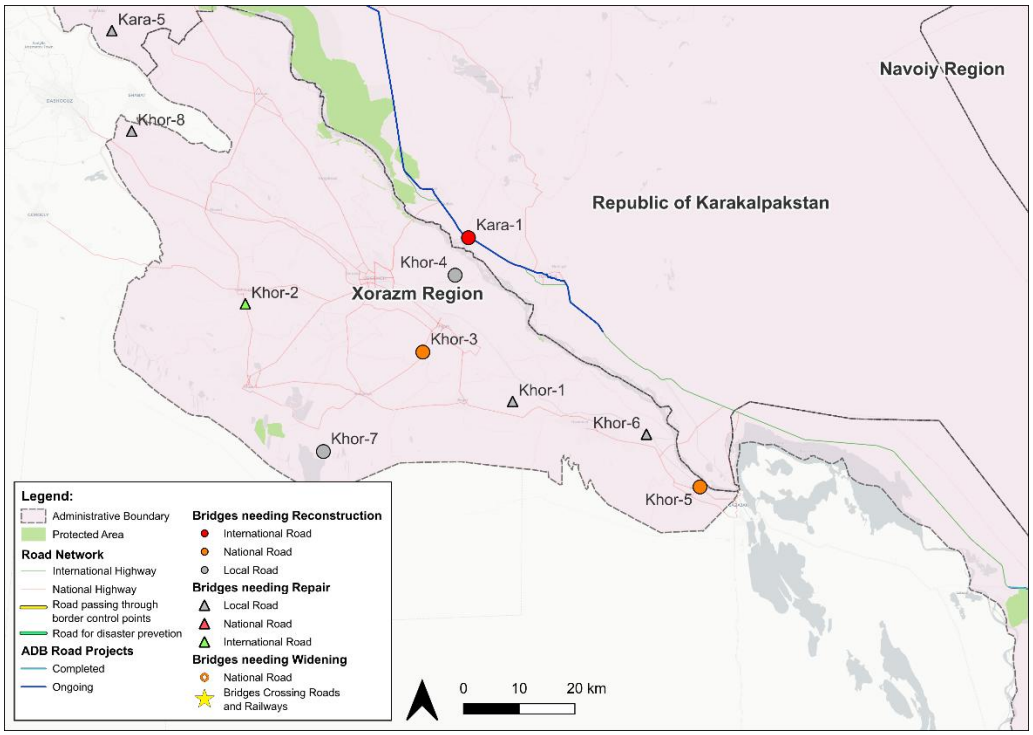
5.3.2.13 Khorezm Region

Most of the candidate bridges provided were older bridges constructed during the former Soviet era (~1991) (see photo below). Weak structures were scattered, and bridges with stepped road surfaces due to settlement were observed. Their condition is poor compared to other states.

Table 5-20 Screening Results (Khorezm Region)

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
Khor-1	BR-98	Reconstruction of the bridge at km 1.65 on the 90V050a "Qulanqoraboq Settlement" Highway	37	Complies with the Uzbekistan Strategy	• Project cost: approx. 0.3 million USD • Road Classification: Local Road	Not located in a nature conservation area	NG
Khor-2	BR-99	Reconstruction of the bridge at km 55.6 on the D220 "Bog‘ot Settlement - Yangiariq Settlement - Khiva City - Qo‘shko‘pir Settlement - Shovot City - Gurlan City" Highway	27		• Project cost: approx. 0.2 million USD • Road Classification: M (International Road)		OK
Khor-3	BR-100	Reconstruction of the bridge at km 3.9 on the D221 "Honqa City - Yangiariq Settlement - Chiqirchi Settlement - Khiva City" Highway	36		• Project cost: approx. 0.2 million USD • Road Classification: D (National Highway)		OK
Khor-4	BR-101	Reconstruction of the bridge at km 5.4 on the 90V084 "Daryolik Arna Water Facility - Civil Protection Town" Highway	62		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Khor-5	BR-102	Reconstruction of the bridge at km 2.5 on the 90V058 "Pitnak City - Pitnak Settlement" Highway	85		• Project cost: approx. 0.7 million USD • Road Classification: D (National Highway)		OK
Khor-6	BR-103	Reconstruction of the bridge at km 2.6 on the 90V112 "D213 Highway (from km 65) - Karvak Settlement - Toshsoka" Highway	114		• Project cost: approx. 0.5 million USD • Road Classification: Local Road		NG
Khor-7	BR-104	Reconstruction of the bridge at km 5.6 on the 90V062 "Chiqirchi	53		• Project cost: approx. 0.5 million USD		NG

Map ID	No.	Project Name	Bridge Length (m)	Criteria			Screening Results (OK or NG)
				Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
		Settlement - Sho'rko'l Lake" Highway			• Road Classification: Local Road		
Khor-8	BR-105	Reconstruction of the bridge at km 11 on the 90V071 "Yablikongli Settlement - Masit Settlement - Kongli Settlement - Turkmenistan Border" Highway	26		• Project cost: approx. 0.2 million USD • Road Classification: Local Road		NG



Source: Prepared by JICA Survey Team

Figure 5-27 Location Map on Bridge Candidate Projects (Khorezm Region)



Khor-2 (M37)



Khor-3 (4P164)



Khor-4 (Local)



Khor-7 (Local)

Figure 5-28 Bridge Condition Photo (Khorezm Region)

5.3.3 Road Disaster Projects

Screening results of road disaster projects are shown in Table 5-21.

Table 5-21 Screening Results of Road Disaster Project

No.	Field	Business Name	Criteria			Screening Results (OK or NG)
			Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
RD-1	Road Disaster	D006 (58-81km Post) "Tashkent-Chirchiq - Chimgan "	Complies with the Uzbekistan Strategy 2030 (Goal No. 91)	• Project cost: approx. 6.9 million USD • Road standard D (national highway)	National Park	NG
RD-2	Road Disaster	A373 (103-177km Post) "Tashkent-Osh"	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	• Project cost: approx. 40.2 million USD • Road standard A (international road)	Not located in a nature conservation area	OK
RD-3	Road Disaster	M39 (1115-1145 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz - Termez "	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	• Project cost: approx. 9.7 million USD • Road standard A (international road)	Not located in a nature conservation area	OK
RD-4	Road Disaster	M39 (1305-1315 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	• Project cost: approx. 2.8 million USD • Road standard A (international road)	Not located in a nature conservation area	OK
RD-5	Road Disaster	D149 (21-25 km Post) "Langar-Maidanak"	Complies with the Uzbekistan Strategy 2030 (Goal No. 91)	• Project cost: approx. 0.7 million USD • Road standard D (national highway)	Not located in a nature conservation area	OK
RD-6	Road Disaster	M39 (993-1013 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	Complies with the Uzbekistan Strategy 2030 guidelines (Goals No. 53, 91, and 92)	• Project cost: approx. 5.4 million USD • Road standard A (international road)	Not located in a nature conservation area	OK
RD-7	Road Disaster	D052 (43-79 km Post) " Dashtobod-Zomin - Bakhmal-Gallaorol "	Complies with the Uzbekistan Strategy 2030 (Goal No. 91)	• Project cost: approx. 31.9 million USD • Road standard D (national highway)	State Reserves + National Park	NG

No.	Field	Business Name	Criteria			Screening Results (OK or NG)
			Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
RD-8	Road Disaster	D050 "M39 Road (from km 962) – Uchtepa Settlement – Jizzakh City – M39 Road (to km 1013)" Road, km 38-47	Complies with the Uzbekistan Strategy 2030 (Goal No. 91)	• Project cost approx. 7.3 million USD • Road standard D (national highway)	Not located in a nature conservation area	OK
RD-9	Road Disaster	D075 (46-77 km Post)"Oqtosh-Yangirobot–Langar–Chuya"	Complies with the Uzbekistan Strategy 2030 (Goal No. 91)	• Project cost: approx. 10.8 million USD • Road standard D (national highway)	Not located in a nature conservation area	OK

5.3.4 Railway Projects

The screening results for proposed projects in the railway sector are shown in Table 5-22.

Table 5-22 Screening Result (Railway Projects)

No.	Project Name	Criteria			Screening Results (OK or NG)
		Consistency with Development Policy	Traffic Demand/ Project Cost	Environmental Impact	
RW-1	Construction of an electrified railway along the “Samarkand-Urgut” route	Aligned with No.53 of the “Uzbekistan - 2030” strategy	The population along the line is increasing, but numerical data is not yet available. 619.5 Mil. US$	Not applicable to projects in environmental protection zones	OK
RW-2	Construction of an electrified railway along the “Tashkent-Parkent” route	Aligned with No.53 of the “Uzbekistan - 2030” strategy	The population along the line is increasing, but numerical data is not yet available. 496 Mil. US$	Not applicable to projects in environmental protection zones	OK
RW-3	Electrification of the Navoi-Uchkuduk railway line	Aligned with No.53 of the “Uzbekistan - 2030” strategy	Transport demand of uranium ore and rare metal ores. No passenger demand. 355 Mil. US$	Not applicable to projects in environmental protection zones	OK
RW-4	Construction of second electrified railway line Tashkent- Angren	Aligned with No.53 of the “Uzbekistan - 2030” strategy	Many industrial plants with industrial rail siding / 1,239 Mil. US$	Not applicable to projects in environmental protection zones	OK
RW-5	Construction of the second track of electrified high-speed railway line on Navoi - Bukhara section	Aligned with No.53 of the “Uzbekistan - 2030” strategy	Section of the international railway corridor connecting Turkmenistan / 1117 Mil. US$	Not applicable to projects in environmental protection zones	OK

Source: JICA Survey Team

5.4 Draft Longlist

A draft longlist based on the criteria, screening results is shown in Table5-23.

Table5-23 Draft Longlist

Sector	No.	Route Name	Project Name
Road (10)	RO-1	A373	A373 "Tashkent-Osh" highway (309 - 354 km)
	RO-2	D107 (4P114)	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)
	RO-3	A-377	A-377 "Samarkand sh-Ayniy" highway (0 - 36 km)
	RO-4	M39A	M39 A "Khairaton entrance" highway (0 - 31 km)
	RO-5	D168	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 40 km)
	RO-6	A-376	A-376 "Ko'kon-Jizzakh" highway (14 - 45 km)
	RO-7	D089	D089 "Fergana city -Kuvasai city- (6 - 25 km)
	RO-8	A380	A380 "Guzar-Bukhara-Nukus-Beineu" highway(765–780 km)
	RO-9	M37	M37 "Samarkand-Bukhara-Turkmenbashi"(147-190km)
	RO-10	M39	M39 " Takhtaqoracha Tunnel Construction Project"
Bridge (47)	BR-1	A-380	Reconstruction of the bridge located at km 615.2 on the A-380 "Guzar-Bukhara-Nukus–Beyneu" Highway
	BR-2	95V119	Reconstruction of the bridge located at km 5.9 on the 95V119 "D233 Highway (61 km) – KS-1" Highway
	BR-9	D233	Reconstruction of the bridge located at km 8.8 on the D233 "Nukus City – Oqmang'it City – Kegayli City – Chimboy City – Qozoqdaryo Settlement" Highway
	BR-10	M41	Reconstruction of the bridge at km 582 on the M41 "Bishkek – Dushanbe – Termez" Highway
	BR-11	D086	Reconstruction of the Zovur Bridge at km 41 on the D086 "Margilan City – Ulugnor District" Highway
	BR-13	D132	Reconstruction of the bridge at 14.22 km of D132 "Andijan public road" highway
	BR-17	M37	Reconstruction of the bridge at km 263.75 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway
	BR-18	M37	Reconstruction of the bridge at km 212.0 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway
	BR-19	D184	Reconstruction of the bridge on the 4.650 km section of the D184 "Karakul city - Karakul railway station - Yangibazar village - Zhigachi village" highway
	BR-23	80V051	Reconstruction of the bridge on the 3.3 km section of the highway 80V051 "80V026 highway (3 km) – D067 highway (307 km) – Shagal sand mine."
	BR-24	D175	Reconstruction of the bridge at km 69.3 on the D175 "D198 Highway (from km 73) – A380 Highway (km 259) – Varakhsha Settlement – Mokhonkul Area – M37 Highway (to km 331)" Highway
	BR-26	D055	Reconstruction of the bridge over a stream at km 49+800 on the D055 "M39 Highway (from km 1031) – Marjonbuloq City – Zarmitan City – Qo'shrabot District" Highway
	BR-27	M39	Reconstruction of the bridge over the Sangzor River at km 1014+760 on the M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" Highway

Sector	No.	Route Name	Project Name
	BR-31	D051	Reconstruction of the bridge over a drainage canal at km 16+800 on the D051 "Sh. Rashidov District – Uchtepa Settlement – Oqtom Settlement – Forish District" Highway
	BR-32	D047	Reconstruction of the bridge over a drainage canal at km 81+902 on the D047 "Jizzakh City – Paxtakor City – Dostlik City – Gagarin City – M39 Highway (to km 918)" Highway
	BR-35	A378	Reconstruction of the bridge over the Kashkadarya River at km 125+800 on the A378 "Samarkand-Guzar" Highway
	BR-36	A-380	Reconstruction of the bridge over a drainage canal at km 70.2 on the A-380 "Guzar-Bukhara-Nukus-Beyneu" Highway
	BR-38	D153	Reconstruction of the bridge at km 38.9 on the D153 "Karshi City – Beshkent City – Kamashi Settlement – Kasbi Settlement – Koson City" Highway
	BR-44	D067	Reconstruction of the bridge at km 197 on the D067 "Zarafshan Tract" Highway
	BR-45	D067	Reconstruction of the bridge at km 234.4 on the D067 "Zarafshan Tract" Highway
	BR-46	D129	Reconstruction of the bridge over the Karakalpak Collector at km 76.021 on the D129 "Baliqchi District – Mingbuloq District – Naiman Settlement – Chagali Settlement – A373 'B' Highway (to km 9)" Highway
	BR-49	D129	Reconstruction of the bridge over the Okhunboboyev Canal at km PK61+375 on the D129 "Baliqchi District – Mingbuloq District – Naiman Settlement – Chagali Settlement – A373 'B' Highway (to km 9)" Highway
	BR-51	V108	Reconstruction of the bridge over the Kosonsoy River at km PK14+00 on the V108 "Namangan City – Toshbuloq City – Shahand Settlement" Highway
	BR-54	D070	Reconstruction of the bridge at km 16 on the D070 "Juma City – Khonchorvoq Settlement – A378 Highway (to km 30)" Highway
	BR-55	30V068	Reconstruction of the bridge at km 4.48 on the 30V068 "M37 Highway"
	BR-57	D047	Reconstruction of the bridge at km 29 on the D047 "Zarafshan Tract" Highway, Payariq District
	BR-59	V078	Reconstruction of the bridge at km 5.6 on the V078 "Samarkand City – Bulung‘ur City – Barlos Settlement – Alamli Settlement" Highway, Jomboy District
	BR-60	M37	Reconstruction of the bridge at km 0.08 on the M37 "Samarkand - Bukhara – Turkmenbashi" Highway
	BR-61	D065	Reconstruction of the bridge at km 38.2 on the D065 "Juma City – Kattaqo‘rg‘on City" Highway, Pastdarg‘om District
	BR-62	D069	Reconstruction of the bridge at km 12.2 on the D069 "Toyloq District – Urgut City" Highway, Urgut District
	BR-63	D067	Reconstruction of the bridge at km 56 on the D067 "Zarafshan Tract" Highway, Ishtikhon District
	BR-64	D170b	Reconstruction of the bridge over the Obizarang River at km 10 on the D170b "Sariosiyo Settlement" Highway
	BR-72	20V020a	Reconstruction of the bridge at km PK0+210 on the 20V020a "A376 Highway (from km 25)" Highway
	BR-73	20V020a	Reconstruction of the bridge at km PK0+310 on the 20V020a "A376 Highway (from km 25)" Highway
	BR-74	20V020a	Reconstruction of the overpass bridge at km 0+525 on the 20V020a "A376 Highway (from km 25)" Highway

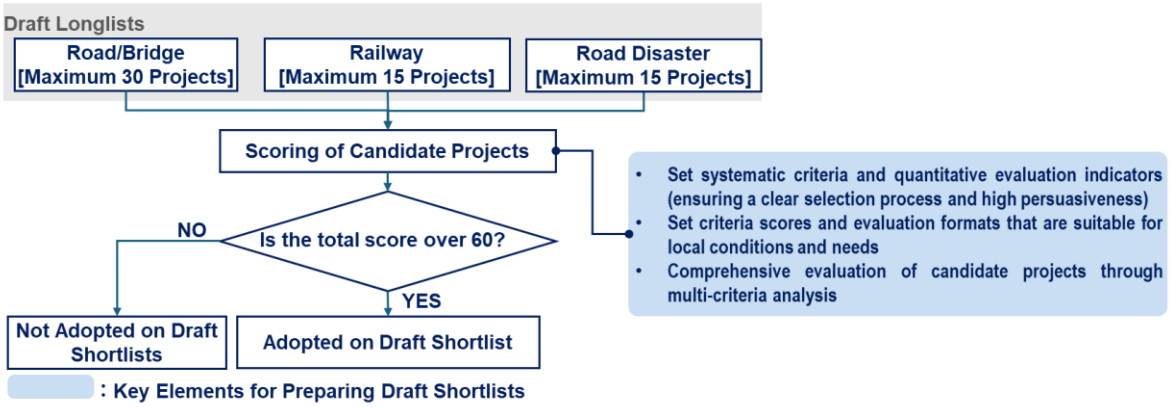
Sector	No.	Route Name	Project Name
	BR-76	M-39	Reconstruction of the bridge at km PK881+720 on the M-39 "Almaty – Bishkek – Tashkent – Shahrisabz – Termez" Highway
	BR-80	M-39	Reconstruction of the bridge over the railway (left side) at km 865+200 on the M-39 "Almaty — Bishkek — Tashkent — Shahrisabz — Termez" Highway
	BR-81	A-373a	Repair of the bridge over the Angren River at km 11+358 on the A-373a "A-373 Highway – Ohangaron– Bo‘ka – Sardoba – M39 Highway (km 918) (from km 45) Branch" Highway
	BR-82	D005	Reconstruction of the bridge over the Bo‘zsuv at km 10+980 on the D005 "Tashkent City – Qibray City – May Settlement" Highway
	BR-85	D025a	Reconstruction of the bridge over the Jun Canal at km 2+370 on the D025a "M-39 Highway to M34 Highway (from km 823) Branch" Highway
	BR-86	D031	Repair of the bridge over the Bo‘zsuv at km 0+050 on the D031 "D001 Highway (from km 7) – Nazarbek Settlement – Harakat Settlement – Yonariq Settlement" Highway
	BR-92	D105	Reconstruction of the bridge at km 195.7 on the D105 "Fergana Ring Highway"
	BR-93	D093	Reconstruction of the bridge at km 60.3 on the D093 "Margilan City – Rishton City – Oqchi Settlement – Karimdevona Settlement – Tajikistan Border" Highway
	BR-96	40V100	Reconstruction of the overpass at km 1.9 on the 40V100 "Qo‘chqorchi-Sirlimachit-Arabmozor" Highway
	BR-99	D220	Reconstruction of the bridge at km 55.6 on the D220 "Bog‘ot Settlement - Yangiariq Settlement - Khiva City - Qo‘shko‘pir Settlement - Shovot City - Gurlan City" Highway
	BR-100	D221	Reconstruction of the bridge at km 3.9 on the D221 "Honqa City - Yangiariq Settlement - Chiqirchi Settlement - Khiva City" Highway
	BR-102	90V058	Reconstruction of the bridge at km 2.5 on the 90V058 "Pitnak City - Pitnak Settlement" Highway
Disaster Prevention (7)	RD-2	A373	A373 (103-177km Post) "Tashkent-Osh"
	RD-3	M39	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
	RD-4	M39	M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
	RD-5	D149	D149 (21-25 km Post) "Langar-Maidanak"
	RD-6	M39	M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
	RD-8	D050	D050 "M39 (38-47km Post) Uchtepa Settlement – Jizzakh City
	RD-9	D075	D075 (46-77 km Post)"Oqtosh-Yangirobot–Langar–Chuya"
Railway (5)	RW-1	—	Construction of an electrified railway along the “Samarkand-Urgut” route
	RW-2	—	Construction of an electrified railway along the “Tashkent-Parkent” route
	RW-3	—	Electrification of the Navoi-Uchkuduk railway line
	RW-4	—	Construction of second electrified railway line, Tashkent-Angren
	RW-5	—	Construction of the second track of electrified high-speed railway line on the Navoi-Bukhara section

Source: JICA Survey Team

6 PREPARATION OF DRAFT SHORTLIST

6.1 Policy for Preparing Draft Shortlist

From the candidate projects listed in the draft longlists, draft shortlists were prepared by a scoring method based on multiple criteria and indicators, taking into account the formulation of the Japanese ODA Loan Projects. They were prepared for three subsectors (road/bridge, road disaster, and railway) following the process shown in Figure 6-1. The policy in preparing the draft shortlists is as follows:



Source: JICA Survey Team

Figure 6-1 Preparation Process of Draft Shortlists

POLICY-1: Systemized Criteria

In preparing the draft shortlists, the main criteria are set as: (1) urgency; (2) development impact; (3) Investment Effectiveness; (4) social acceptability; and (5) validity as Japanese ODA Loan Project based on the purpose of the Survey (formulating Japanese ODA Loan Projects). In addition, sub-criteria are set for each main criterion, and an evaluation structure is developed that makes it easy to grasp the characteristics of each candidate project. The evaluation indicators for each criterion are evaluated as quantitatively as possible.

POLICY-2: Setting Scoring Balance based on Project Characteristics

The scoring balance for each criterion was determined based on the project characteristics and the importance of each criterion, taking into account the results of discussions with JICA and the relevant authorities/organizations in Uzbekistan. To select priority five (5) projects among the three different subsector projects based on the scoring results, scores for "Urgency" and "Development Impact" were set for each subsector.

6.2 Criteria and Indicators

Based on the policy of shortlisting, the criteria and evaluation indicators for the draft shortlist are set as shown in Table 6-1.

Table 6-1 Criteria and Evaluation Indicators for Scoring

Criteria ( ) is the Total Score		Evaluation Indicator	Weighting	
Major Items	Medium Item			
Urgency (10 or 20)	-	• Evaluate the impact of solving challenges (pavement condition, traffic capacity, structural soundness, etc.) through project implementation.	Road & Bridge	10
			Railway	10
			Road Disaster Prevention	20
Development Impact (30 or 40)	Improvement of Connectivity	• Evaluate the impact on border connectivity between Tajikistan, Kyrgyz and Afghanistan, and on strengthening connectivity along the Caspian Sea route [Road/Bridge/Road Disaster] • Evaluate the impact on improving international transport and simplifying border crossing procedures [Railway]	Road & Bridge	20
			Railway	20
			Road Disaster Prevention	10
	Consistency with Development Plans	• Evaluate the consistency with Uzbekistan's national policies and Japan's development cooperation policy	10	
	Synergies with Other Projects	• Evaluate synergies with other donor projects related to strengthening border connectivity among Tajikistan, Kyrgyz and Afghanistan	5	
	Project Risk	• Evaluate the risk of project implementation delay	5	
Investment Effect (15)	Economic Validity (Project Scale)	• Evaluate the consistency with the scale (expected project scale) of the Japanese ODA Project	5	
	Economic Impact of Development	• Evaluate the economic impact (EIRR, etc.) of project implementation	10	
Social Acceptability (15)	Natural Environment Impact	• Evaluate the impact of project implementation on the natural environment	5	
	Social and Environmental Impact	• Evaluate the impact of resettlement based on JICA's environmental categories	10	
Validity as Japanese ODA Loan Project (20)	Applicability of Japanese Technology	• Evaluate the possibility of applying the Japanese technology and the competitiveness of that technology	10	
	Restrictions on Project Implementation	• Evaluate the availability of suitable contractors	10	

6.2.1 Urgency

For the criteria of Urgency, the indicators are set from the perspective of the urgent issues in each field in terms of road pavement condition (IRI and VCR), structural integrity of bridges, disaster frequency, and passenger and freight transportation demand. The evaluation indicators for urgency are shown in Table 6-2.

Table 6-2 Evaluation Indicators of Urgency

Field	Evaluation Indicator	Score	Full Marks
Road	Existing Rehabilitation: International roads with a road surface condition (average IRI*[1]) of 7.5 or higher Lane widening: International roads with VCR[*2] of 1.0 or more	10	10
	Existing rehabilitation: International roads with a road surface condition (average IRI) of 4.5 or more, or national roads with a road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads	8	
	Existing rehabilitation: International highways with road surface conditions (average IRI) of 3.0 or higher, or national roads with road surface conditions (average IRI) of 4.5 or higher. VCR 0.8 or more on national roads	5	
	Existing rehabilitation: National roads with a road surface condition (average IRI) of 3.0 or higher. VCR 0.6 or more on national roads	3	
	Existing rehabilitation: Other than the above Lane widening: Other than the above	0	
Bridges	Bridge soundness (emergency measures stage) and design load do not match the current situation	10	10
	Bridge soundness (emergency action stage) or design loads do not match current conditions	5	
	Bridge Soundness (Early Action Stage)	3	
	Bridge Soundness (structurally sound)	0	
Road Disaster Prevention	Disasters on the International Road (M/A) have caused road closures and human accidents within the past three years, and there is no alternative road	20	20
	Disaster on the International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on the national road (D) causes road closures and human accidents within the past three years, and there is no alternative route.	15	
	Disasters on the national road (D) have caused road closures and human accidents within the past three years	10	
	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster	5	
	There are no slopes with disaster risk.	0	
Railway	Train capacity is not able to meet the current demand for passenger and freight transport.	10	10
	Infrastructure is aging rapidly, which may lead to an increase in the rate of breakdowns and accidents in the next few years.	5	
	Transportation demand increases. The current capacity can meet the demand now, but it may not be able to meet in a few years.	3	
	There is no anticipated future demand for passenger or freight transport.	0	

*1: Threshold values (IRI 4.5: Median of Older Pavement range, IRI 7.5: Median of Damaged Pavement range) are set with reference to “Guidelines for Conducting and Calibrating Road Roughness Measurements, World Bank”.
*2: VCR stands for Volume-Capacity Ratio, which is calculated as the (daily traffic volume) / (traffic capacity of the target road). The traffic capacity of the target road is determined based on field survey results, taking into account factors such as the number of lanes, road width, terrain, alignment, and pavement conditions.

6.2.2 Development Impact

6.2.2.1 Improvement of Connectivity

For the Criteria of Improvement of Connectivity, the indicators are set from the perspective of strengthening Uzbekistan's main logistics network (Caspian Sea Route and CAREC corridor) and connectivity with neighboring countries, based on the upgrading of the transportation and logistics network and the potential of the transportation system as put forward in the “Uzbekistan Strategy 2030”.

Regarding connectivity with neighboring countries, the indicator will focus on connectivity with Kyrgyz, Tajikistan and Afghanistan, based on strengthening the Southern Corridor (Uzbekistan-Afghanistan-Pakistan), which is being promoted to eliminate the bottleneck of double landlocked countries' logistics, and the progress in demarcating the borders of Kyrgyz and Tajikistan.

The evaluation indicators for the Improvement of Connectivity are shown in Table 6-3.

Table 6-3 Evaluation Indicators for “Improvement of Connectivity”

Field	Evaluation Indicator	Score	Full Marks
Road (Road Disaster Prevention)	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contributes** to strengthening connectivity on the borders of Tajikistan, Kyrgyz, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyz, and Afghanistan, or is located on the Caspian Sea route.	20 (10)	20 (10)
	The subject (or route) of the project is located on an international road (M/A) or national highway (D/P), and the implementation of the project directly contributes** to strengthening connectivity on the borders of Tajikistan, Kyrgyz, and Afghanistan, or on the Caspian Sea route.	15 (5)	
	The subject (or route) of the project is located on an international road (M/A) or national highway (D/P), and the implementation of the project indirectly contributes** to strengthening connectivity on the borders of Tajikistan, Kyrgyz, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads	10 (3)	
	Other than the above	0 (0)	
Bridge	Border provinces of Tajikistan, Kyrgyz and Afghanistan, and the province along the Caspian Sea route.	20	20
	Border provinces of Tajikistan, Kyrgyz and Afghanistan, or the province along the Caspian Sea route.	10	
	Other than the above	0	
Railway	Directly contribute to increasing the number of international trains or shortening transport times	20	20
	Directly contributes to simplifying and speeding up border crossing procedures	15	
	Indirectly contributing to an increase in the number of international transport trains, shortening transport times, and simplifying and speeding up border crossing procedures	10	
	Other than the above	0	

6.2.2.2 Consistency with Development Plans

For the Criteria of Consistency of Development Plans, the indicators are set from the perspective of consistency with the “Uzbekistan Strategy 2030” and Japan's development cooperation policy, as shown below. The evaluation indicators for the development effectiveness of consistency with development are shown in Table 6-4.

Uzbekistan Strategy 2030

The realization of the "Uzbekistan Strategy 2030" and the achievement of its numerical targets have been set as a priority task for all state agencies and organizations. The transport development policy is related to the goals of No. 53, No. 91, and No. 92 of the Uzbekistan Strategy 2030.

- Advancement of international transport and logistics networks in Uzbekistan/ Improvement of potential in domestic transport systems (Goal No. 53)
- Raising the level of practical cooperation in the Central Asia region (Goal No. 91)
- Developing mutually beneficial relationships with relevant countries, expanding international cooperation, and connecting to global production and supply chains (Goal No. 92)

Japan's Development Cooperation Policy in Uzbekistan

Among Japan's country development cooperation policies of Uzbekistan, the priority target and development issues related to the transportation sector (transportation infrastructure development) are as follows.

Priority Target: Sustainable economic growth and industrial diversification, and advancement
Development Issue 1-1: Stable economic management and strengthening industrial competitiveness
Response policy for Development Issue 1-1: Assistance that contributes to industrial recovery, focusing on financial cooperation, various technical cooperation, human resource development, and institution building in both the public and private sectors, and infrastructure development in sectors with comparative advantages that support economic growth. Through various technical cooperation and survey activities, we will provide assistance focusing on human resource development and institution building in both the public and private sectors.

Table 6-4 Evaluation Indicators for “Consistency with Development Plans”

Field	Evaluation Indicator	Score	Full Marks
Common	• Consistent with Uzbekistan's development policy and Japan's development cooperation policy (contributing to international logistics and transport with neighboring countries and strengthening industry)	10	10
	• Consistent with Uzbekistan's development policy and Japan's development cooperation policy (contributing to strengthening domestic logistics, transportation, and industry)	5	
	• Not consistent with development plans	0	

6.2.2.3 Synergies with Other Projects

For the Criteria of Synergies with other projects, the indicators are set from the perspective of synergies with other projects related to strengthening border connectivity with Afghanistan, Kyrgyz, and Tajikistan, or strengthening the Caspian Sea route. The evaluation indicators of synergies with other projects are shown in Table 6-5. Currently, Uzbekistan is implementing the Tashkent-Andijan highway project and Tashkent-Samarkand highway project (PPP projects), as well as new road construction and rehabilitation, bridge replacement, and railway electrification by ADB, EBRD, and AIIB (for details, see Section 3.4.4). In addition, high synergistic effects are expected from the road projects (R-1 and RO-7) near the Kyrgyz border, as they will connect to the Osh-Batken-Isfana road (OBI road) in Kyrgyz, where a road improvement project is currently progressing by JICA and others. The location of the candidate projects and the projects by other donors are shown in Table 6-5.

Table 6-5 Evaluation Indicators for "Synergies with Other Projects"

Field	Evaluation Indicator	Score	Full Marks
Common	It generates synergetic effects with other projects in strengthening connectivity with the borders of Tajikistan, Kyrgyz, and Afghanistan, or in enhancing the Caspian Sea route.	5	5
	Synergy with other projects can be ensured	3	
	No synergistic effects expected	0	

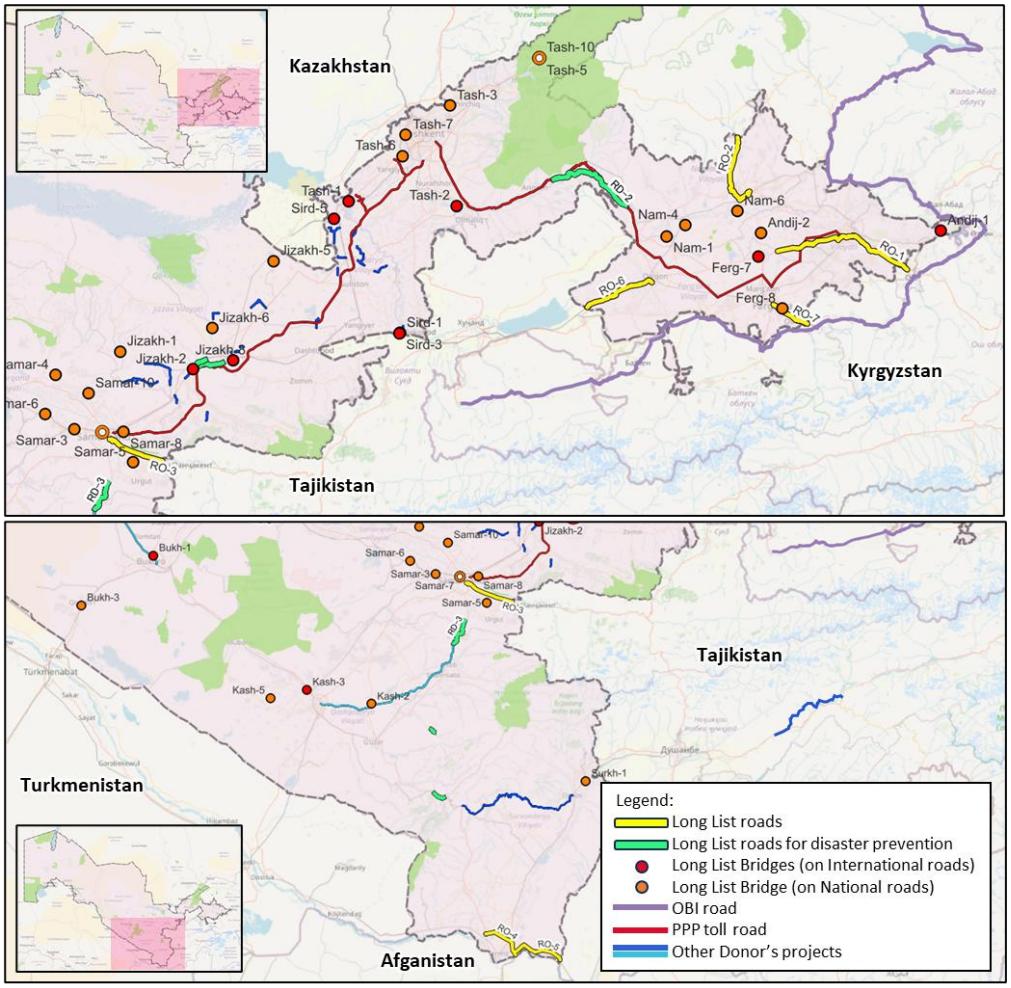


Figure 6-2 Location Map on Candidate Projects and Other Donors' Projects

6.2.2.4 Project Risk

For the Criteria of Project Risk, the indicators are set depending on whether project risk exists in the candidate project scope and the surrounding environment. The indicators for project risk are shown in Table 6-6.

Table 6-6 Evaluation Indicators for "Project Risk"

Field	Evaluation Indicator	Score	Full Marks
Common	• No project risk	5	5
	• There is one of the risks in terms of the following. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	3	
	• There are two or more risks in terms of the following. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	0	

6.2.3 Investment Effectiveness

6.2.3.1 Economic Validity (Project Scale)

The evaluation indicators of appropriateness of the project scale are shown in Table 6-7. The project scale shown in the following indicators is set at approximately 20 billion yen based on the average level of Japanese ODA loan projects in Uzbekistan in the past.

Table 6-7 Evaluation Indicators for "Economic Validity (Project Scale)"

Field	Evaluation Indicator	Score	Full Marks
Common	Consistent with the scale of the Japanese ODA Loan Projects (within 137 million USD or so)	5	5
	Other than the above	0	

6.2.3.2 Economic Impact of Development

The evaluation indicators for appropriateness of the project scale are shown in Table 6-8.

Table 6-8 Evaluation Indicators for "Economic Impact of Development"

Field	Index	Score	Full Marks
Roads and Bridges / Road Disaster Prevention	Economic Internal Rate of Return (EIRR) of 12% or more (12%: maximum discount rate for World Bank projects)	10	10
	EIRR is between 6% and 12%	5	
	EIRR is less than 12% (12% is the minimum discount rate for ADB projects)	0	
Railway	Located on a major route, has information indicating strong demand, and is cost-effective	10	10
	When demand is uncertain	5	
	Demand cannot be predicted at present	0	

The methods of economic and financial analysis for each of the candidate projects (road/bridge and road disaster prevention) are shown below. The economic impact of the candidate projects in the railway sector is a qualitative indicator due to the limited information collected on the candidate projects.

(1) Methods of Economic and Financial Analysis

In order to conduct an economic and financial analysis, a benefit stream and a cost stream are organized for each year. Considering the data limitations, the benefit stream is calculated as the difference between the ex-ante and ex-post transportation costs, as shown in the table below.

Road projects were divided into rehabilitation and new road projects, and calculations were made to determine travel time and mileage, respectively. For bridges, since there is considerable damage at present and the possibility of bridge failure in 10 years, the benefits were calculated by taking into account cost increases and other factors depending on whether the bridges are replaced now or in 10 years.

For road disaster prevention, it was assumed that a disaster would occur every 4 years in the same section, and every 10 years in the posterior. According to IJTSRD[1], in Uzbekistan, large-scale landslides occur once every 5 to 10 years, medium-scale ones every 2 to 3 years, and small-scale ones almost every year. These events have been decreasing over time due to infrastructure improvements. Based on the average frequency, it was assumed that landslides occur once every 4 years before the project and once every 10 years after the project.

Since traffic volume and other data on railroads were not available for this study, they will be collected separately if the project is selected as a priority project.

Table 6-9 Calculation of Pre and Post-Project Transportation Costs

Category		In advance	After the Fact
Road	Rehabilitation	Traffic cost = traffic volume × travel time before rehabilitation × time value + mileage x traffic volume × vehicle operating cost	Traffic cost = traffic volume × travel time after rehabilitation × time value + mileage x traffic volume × vehicle operating cost
	Newly Organized	Traffic cost = traffic volume x travel time × time value + distance traveled × traffic volume × vehicle operating cost	Traffic cost = traffic volume × travel time after rehabilitation × time value + mileage x traffic volume × vehicle operating cost
Road Disaster Prevention	Disaster Prevention Measures	Traffic cost = 1 day of road closure every 4 years of disaster × Traffic volume × time value	Traffic cost = 1 day of road closure every 10 years of disaster × Traffic volume × time value
Bridge	Rehabilitation (Including Bridge Replacement)	**Traffic cost:** Every 3 years, one lane of traffic is restricted and repaired for 30 days. Travel time is 5 times. For medium-scale repairs, it takes 60 days. Traffic cost = 1 day of closure × traffic volume × time value **Maintenance cost:** Assumed repair cost equivalent to 5% of construction cost every 3 years, and 20% of construction cost once every 9 years for medium-scale repair.	**Traffic Cost:** The construction period shall be 2 years. After opening, one lane of traffic will be restricted for 5 days every 10 years. The time required is calculated as 5 times. Traffic cost = 1 day of closure × traffic volume × time value **Maintenance cost:** After opening, the Repair cost is equivalent to 2% of the construction cost every 10 years.

(2) Assumed Value

In this study, the situation is such that objective data on transportation is limited. In conducting the aforementioned economic and financial analysis, the following assumptions were made, and calculations were made.

Table 6-10 Assumptions in Economic and Financial Analysis

Assumed Value	Value	Authority
VOT (Value of Time) (JPY/hr/unit)	697	Calculated from monthly working hours and income (= average monthly income of 61,335 ÷ 22 working days ÷ 8 hours × 2 people [average car occupancy]).
Average monthly income (JPY/Month)	61,335	*From the Web in 2024[2]

[1] International Journal of Trend in Scientific Research and Development (IJTSRD)による：https://www.ijtsrd.com/papers/ijtsrd51987.pdf#:~:text=Classification%20by%20power%20,sometimes%20several%20times%20a%20year

[2] According to CEIC data, the amount is USD 423 per month. It was converted to Japanese yen using an exchange rate of 1 USD = 145 JPY.

Assumed Value	Value	Authority
Prior disaster occurrence interval (years)	4	Established through hearings and survey team visits
Post-disaster interval (years)	10	Established through hearings and survey team visits
Number of days for restoration of road closures in the event of a disaster (days)	1	Established through hearings and survey team visits
Average number of car occupants (persons/vehicle)	2	Set by the survey team inspection
USD/JPY	0.006897	Project assumption (1USD=145JPY)
Road O&M Percentage (%)	30%	Established through hearings and survey team visits
Annualized traffic growth rate (-2028)	5% (of the total)	Central Asia Regional Economic Cooperation Corridor 2 Karakalpakstan Road (A380 Kungrad to Daut-Ata Section) Project (RRP UZB 48414)
Annualized traffic growth rate (from 2029)	4%	
Project Evaluation Period (years)	30 Years	
Initial investment period (years)	Bridge: 2 Other: 5	From the approximate investment period
EIRR Reference Value	12.0%	Standard values in ADB projects, etc.
Vehicle Operating Cost (JPY vehicle-km)	59.45	Central Asia Regional Economic Cooperation Corridor 2 Karakalpakstan Road (A380 Kungrad to Daut-Ata Section) Project (RRP UZB 48414)
Social discount rate	9%	

(3) Business Effectiveness (Misdemeanor Financial Analysis)

The benefits and costs were calculated based on the methods and assumptions shown in the previous section, and an economic and financial analysis was conducted to calculate the project effects. The threshold was not based only on an EIRR of 12% or higher, but also considered projects with a B/C ratio of 1 or more and an NPV of 0 or more as feasible (described 'OK'). The results are shown below in Table 6-11.

Table 6-11 Economic and Financial Analysis Results

No.	Field	Project Name	EIRR>12%, B/C> 1, NV>0	B/C	NPV	EIRR	Benefit (mil. JPY)	Cost (mil. JPY)	O&M Cost (mil. JPY)
RD-2	Road Disaster Prevention	A373 (103-177km Post) "Tashkent-Osh"	OK	1.8	5,666.3	15%	44,501	5,820	1,746
RD-3	Road Disaster Prevention	M39 (1115-1145 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	OK	1.7	1,345.5	14%	9,580	1,400	420
RD-4	Road Disaster Prevention	M39 (1305-1315 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	NG	0.9	365.9	8%	1,752.0	400.0	120.0
RD-5	Road Disaster Prevention	D149 (21-25 km Post) "Langar-Maidanak"	NG	0.5	88.8	4%	243.4	100.0	30.0
RD-6	Road Disaster Prevention	M39 (993-1013 km Post) "Almaty-Bishkek-Tashkent-Shahrisabz-Termez"	OK	3.1	820.7	20%	11,228	780	234
RD-8	Road Disaster Prevention	D050 "M39 Road (from km 962) - Uchtepa Settlement - Jizzakh City - M39 Road (to km 1013)" Road, km 38-47	NG	0.5	940.5	3%	2,229	1,060	318
RD-9	Road Disaster Prevention	D075 (46-77 km Post) "Oqtosh-Yangirobot-Langar-Chuya"	NG	0.2	1,349.8	-4%	1,075	1,560	468
BR-1	Bridge	Reconstruction of the bridge located at km 615.2 on the A-380 "Guzar-Bukhara-Nukus-Beyneu" Highway	OK	3	25.7	26%	179.0	61.0	18.3
BR-2	Bridge	Reconstruction of the bridge located at km 5.9 on the 95V119 "D233 Highway (61 km) - KS-1" Highway	NG	0.3	24.7	3%	21.0	63.0	18.9

No.	Field	Project Name	EIRR>12%, B/C> 1, NV>0	B/C	NPV	EIRR	Benefit (mil. JPY)	Cost (mil. JPY)	O&M Cost (mil. JPY)
BR-9	Bridge	Reconstruction of the bridge located at km 8.8 on the D233 "Nukus City - Oqmang'it City - Kegayli City - Chimboy City - Qozoqdaryo Settlement" Highway	NG	0.0	29.9	0%	4.2	77.0	23.1
BR-10	Bridge	Reconstruction of the bridge at km 582 on the M41 "Bishkek - Dushanbe - Termez" Highway	OK	3.0	39.5	31%	303	93	28
BR-11	Bridge	Reconstruction of the Zovur Bridge at km 41 on the D086 "Margilan City - Ulugnor District" Highway	OK	2.4	20.5	22%	129	49	15
BR-13	Bridge	Reconstruction of the bridge at 14.22 km of D132 "Andijan public road" highway	OK	2.6	24.3	24%	162	58	17
BR-17	Bridge	Reconstruction of the bridge at km 263.75 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway	OK	7.3	47.8	50%<	797	100	30
BR-18.	Bridge	Reconstruction of the bridge at km 212.0 on the M37 "Samarkand-Bukhara-Turkmenbashi" Highway	OK	2.8	122.5	27%	876	290	87
BR-19	Bridge	Reconstruction of the bridge on the 4.650 km section of the D184 "Karakul city - Karakul railway station - Yangibazar village - Zhigachi village" highway	NG	0.9	30.0	8%	75.9	75.0	22.5
BR-21	Bridge	Reconstruction of the bridge at km 3.2 on the 80V183 "A380 Highway (from km 151) - 'Farhod' Pumping Station" Highway	NG	0.1	22.6	1%	9.4	58.0	17.4
BR-23	Bridge	Reconstruction of the bridge on the 3.3 km section of highway 80V051 "80V026 highway (3 km) - D067 highway (307 km) - Shagal sand mine."	NG	0.3	18.0	3%	14.2	46.0	13.8
BR-24	Bridge	Reconstruction of the bridge at km 69.3 on the D175 "D198 Highway (from km 73) - A380 Highway (km 259) - Varakhsha Settlement - Mokhonkul Area - M37 Highway (to km 331)" Highway	NG	0.5	20.5	5%	28.5	52.0	15.6
BR-26	Bridge	Reconstruction of the bridge over a stream at km 49+800 on the D055 "M39 Highway (from km 1031) - Marjonbuloq City - Zarmitan City - Qo'shrabot District" Highway	NG	0.4	42.1	4%	49.3	107.0	32.1
BR-27	Bridge	Reconstruction of the bridge over the Sangzor River at km 1014+760 on the M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" Highway	OK	2.7	107.5	27%	757.2	255.0	76.5
BR-29	Bridge	Reconstruction of the overpass at km 3+500 on the 25V011 "Jizzakh City - Bobur Settlement - Khayrobad Settlement" Highway	NG	0.3	113.6	3%	94.3	290.0	87.0
BR-31	Bridge	Reconstruction of the bridge over a drainage canal at km 16+800 on the D051 "Sh. Rashidov District - Uchtepa Settlement - Oqtom Settlement - Forish District" Highway	NG	0.5	25.6	4%	33.4	65.0	19.5
BR-32	Bridge	Reconstruction of the bridge over a drainage canal at km 81+902 on the D047 "Jizzakh City - Paxtakor City - Dostlik City - Gagarin City - M39 Highway (to km 918)" Highway	NG	0.8	37.0	7%	82.3	93.0	27.9
BR-33	Bridge	Reconstruction of the bridge over a canal at km 7+246 on the 25V029 "A376 Highway (from km 260) - 6th Railway Siding - Zomin City" Highway	NG	1.0	26.0	9%	72.4	65.0	19.5
BR-35	Bridge	Reconstruction of the bridge over the Kashkadarya River at km 125+800 on the A378 "Samarkand-Guzar" Highway	OK	2.9	36.9	29%	274.1	87.0	26.1
BR-36	Bridge	Reconstruction of the bridge over a drainage canal at km 70.2 on the A-380 "Guzar-Bukhara-Nukus-Beyneu" Highway	NG	1.3	35.1	11%	119.5	87.0	26.1

No.	Field	Project Name	EIRR>12%, B/C> 1, NV>0	B/C	NPV	EIRR	Benefit (mil. JPY)	Cost (mil. JPY)	O&M Cost (mil. JPY)
BR-38	Bridge	Reconstruction of the bridge at km 38.9 on the D153 "Karshi City - Beshkent City - Kamashi Settlement - Kasbi Settlement - Kasbi Settlement - Koson City" Highway	OK	1.4	25.9	12%	96.3	64.0	19.2
BR-44	Bridge	Reconstruction of the bridge at km 197 on the D067 "Zarafshan Tract" Highway	OK	2.9	17.4	29%	128.7	41.0	12.3
BR-45	Bridge	Reconstruction of the bridge at km 234.4 on the D067 "Zarafshan Tract" Highway	NG	0.1	16.0	1%	6.3	41.0	12.3
BR-46	Bridge	Reconstruction of the bridge over the Karakalpak Collector at km 76.021 on the D129 "Baliqchi District - Mingbuloq District - Naiman Settlement - Chagali Settlement Naiman Settlement - Chagali Settlement - A373 'B' Highway (to km 9)" Highway	OK	3.1	19.6	34%	157.4	46.0	13.8
BR-49	Bridge	Reconstruction of the bridge over the Okhunboboyev Canal at km PK61+375 on the D129 "Baliqchi District - Mingbuloq District - Naiman Settlement - Chagali Settlement Naiman Settlement - Chagali Settlement - A373 'B' Highway (to km 9)" Highway	OK	3.0	31.8	31%	242.0	75.0	22.5
BR-51	Bridge	Reconstruction of the bridge over the Kosonsoy River at km PK14+00 on the V108 "Namangan City - Toshbuloq City - Shahand Settlement" Highway	OK	5.4	32.7	50%<	420.0	72.0	21.6
BR-52	Bridge	Reconstruction of the bridge at km 1 on the 30V159 "Josh Settlement - Minishkor Settlement" Highway	NG	0.3	44.2	2%	31.9	113.0	33.9
BR-54	Bridge	Reconstruction of the bridge at km 16 on the D070 "Juma City - Khonchorvoq Settlement - A378 Highway (to km 30)" Highway	NG	0.5	44.9	5%	62.1	114.0	34.2
BR-55	Bridge	Reconstruction of the bridge at km 4.48 on the 30V068 "M37 Highway"	NG	0.3	45.4	2%	33.3	116.0	34.8
BR-57	Bridge	Reconstruction of the bridge at km 29 on the D047 "Zarafshan Tract" Highway, Payariq District	NG	1.1	25.7	10%	77.0	64.0	19.2
BR-59	Bridge	Reconstruction of the bridge at km 5.6 on the V078 "Samarkand City - Bulung'ur City - Barlos Settlement - Alamli Settlement" Highway, Jomboy District	NG	0.8	29.1	8%	66.5	73.0	21.9
BR-60	Bridge	Reconstruction of the bridge at km 0.08 on the M37 "Samarkand - Bukhara - Turkmenbashi" Highway	OK	2.5	49.9	24%	327.9	119.0	35.7
BR-61	Bridge	Reconstruction of the bridge at km 38.2 on the D065 "Juma City - Kattaqo'rg'on City" Highway, Pastdarg Pastdarg 'om District	NG	1.2	71.3	11%	233.2	177.0	53.1
BR-62	Bridge	Reconstruction of the bridge at km 12.2 on the D069 "Toyloq District - Urgut City" Highway, Urgut District	NG	0.8	74.1	8%	169.8	186.0	55.8
BR-63	Bridge	Reconstruction of the bridge at km 56 on the D067 "Zarafshan Tract" Highway, Ishtikhon District	NG	0.9	33.1	8%	78.2	83.0	24.9
BR-64	Bridge	Reconstruction of the bridge over the Obizarang River at km 10 on the D170b "Sariosiyo Settlement" Highway	OK	2.0	26.8	18%	141.4	65.0	19.5
BR-72	Bridge	Reconstruction of the bridge at km PK0+210 on the 20V020a "A376 Highway (from km 25)" Highway	NG	0.2	27.3	1%	11.8	70.0	21.0
BR-73	Bridge	Reconstruction of the bridge at km PK0+310 on the 20V020a "A376 Highway (from km 25)" Highway	NG	0.2	27.3	1%	11.8	70.0	21.0
BR-74	Bridge	Reconstruction of the overpass bridge at km 0+525 on the 20V020a "A376 Highway (from km 25)" Highway	NG	0.1	31.6	1%	11.8	81.0	24.3

No.	Field	Project Name	EIRR>12%, B/C> 1, NV>0	B/C	NPV	EIRR	Benefit (mil. JPY)	Cost (mil. JPY)	O&M Cost (mil. JPY)
BR-76	Bridge	Reconstruction of the bridge at km PK881+720 on the M-39 "Almaty - Bishkek - Tashkent - Shahrisabz - Termez" Highway	NG	0.5	34.3	5%	45.7	87.0	26.1
BR-80	Bridge	Reconstruction of the bridge over the railway (left side) at km 865+200 on the M-39 "Almaty - Bishkek - Tashkent - Shahrisabz - Termez" Highway	NG	0.3	27.4	3%	25.0	70.0	21.0
BR-81	Bridge	Repair of the bridge over the Angren River at km 11+358 on the A-373a "A-373 Highway - Ohangaron- Bo'ka - Sardoba - M39 Highway (km 918) (from km 45) Branch" Highway	NG	1.0	139.4	9%	385.5	348.0	104.4
BR-82	Bridge	Reconstruction of the bridge over the Bo'zsuv at km 10+980 on the D005 "Tashkent City - Qibray City - May Settlement" Highway	NG	0.7	36.9	7%	72.6	93.0	27.9
BR-83	Bridge	Construction of a 300-meter bridge over the Syrdarya River connecting the Dustlik and Yangiovul neighborhoods in the Bekabad district of Tashkent Construction of a 300-meter bridge over the Syrdarya River connecting the	-	-	-	-	-	-	-
BR-84	Bridge	Repair of the bridge over the Pskom River at km 49+600 on the D010 "Chorbog' Reservoir Ring Highway"	NG	0.1	180.5	0%	38.2	464.0	139.2
BR-85	Bridge	Reconstruction of the bridge over the Jun Canal at km 2+370 on the D025a "M-39 Highway to M34 Highway (from km 823) Branch" Highway	NG	0.6	35.6	6%	61.8	90.0	27.0
BR-86	Bridge	Repair of the bridge over the Bo'zsuv at km 0+050 on the D031 "D001 Highway (from km 7) - Nazarbek Settlement - Harakat Settlement Harakat Settlement - Yonariq Settlement" Highway	NG	0.8	38.5	7%	79.5	97.0	29.1
BR-89	Bridge	Reconstruction of the bridge over the Bo'zsuv River at km 2+120 on the 10V161b "D006 Highway to Special Facility (from km 33) Branch Highway (24 km)"	NG	0.0	38.5	0%	4.1	99.0	29.7
BR-92	Bridge	Reconstruction of the bridge at km 195.7 on the D105 "Fergana Ring Highway"	OK	5.1	27.5	50%<	336.8	61.0	18.3
BR-93	Bridge	Reconstruction of the bridge at km 60.3 on the D093 "Margilan City - Rishton City - Oqchi Settlement - Tajikistan Border Karimdevona Settlement - Tajikistan Border" Highway	OK	5.1	27.1	50%<	334.0	60.0	18.0
BR-96	Bridge	Reconstruction of the overpass at km 1.9 on the 40V100 "Qo'chqorchi-Sirlimachit-Arabmozor" Highway	OK	2.5	26.4	23%	172.1	63.0	18.9
BR-99	Bridge	Reconstruction of the bridge at km 55.6 on the D220 "Bog'ot Settlement - Yangiariq Settlement - Khiva City - Qo'shko 'pir Settlement - Shovot City - Gurlan City" Highway	NG	0.7	13.9	6%	25.7	35.0	10.5
BR-100	Bridge	Reconstruction of the bridge at km 3.9 on the D221 "Honqa City - Yangiariq Settlement - Chiqirchi Settlement - Khiva City" Highway	OK	2.9	15.7	29%	115.1	37.0	11.1
BR-102	Bridge	Reconstruction of the bridge at km 2.5 on the 90V058 "Pitnak City - Pitnak Settlement" Highway	NG	0.4	42.4	3%	42.8	108.0	32.4
RO-1	Road	289-379 km of the A373 "Tashkent-Osh" highway	OK	2.3	18,022.1	14%	117,668	18,000	5,400
RO-2	Road	0-37 km of the D107 (4P114) "Namangan city - Kosansoy city - border of the Kyrgyz Republic" highway	OK	1.9	9,303.0	12%	52,804	9,500	2,850

No.	Field	Project Name	EIRR>12%, B/C> 1, NV>0	B/C	NPV	EIRR	Benefit (mil. JPY)	Cost (mil. JPY)	O&M Cost (mil. JPY)
RO-3	Road	A-377 "Samarkand sh-Ayniy" highway 0-36 km	OK	2.5	9,155.0	15%	65,248	9,000	2,700
RO-4	Road	0-30 km of the M39 A "Khairaton entrance" highway	NG	0.4	9,274.8	0%	13,464	10,500	3,150
RO-5	Road	0-49 km of the D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway	NG	0.8	5,892.3	4%	15,052	6,500	1,950
RO-6	Road	A-376 "Ko'kon-Jizzakh" highway 0-45 km	OK	2.3	7,538.7	14%	50,342	7,500	2,250
RO-7	Road	D089 "Fergana city - Kuvasai city - border of the Kyrgyz Republic" highway 0-25 km	OK	3.4	5,374.8	19%	49,115	5,000	1,500
RO-8	Road	Reconstruction of the A380 "Guzar-Bukhara-Nukus-Beineu" highway, section 765-806 km (construction of a concrete-paved road)	NG	0.2	9,993.5	-5%	7,413	11,500	3,450
RO-9	Road	Construction of a new 43 km bypass road for the M37 "Samarkand-Bukhara-Turkmenbashi" highway from 147 km to 181.5 km to bypass the southern part of Navoi city and Karmana district center city and Karmana district center	NG	1.4	19,818.8	9%	83,492	21,000	6,300
RO-10	Road	M39 "Takhta-Karacha Tunnel Construction Project"	OK	2.7	48,087.8	16%	360,763	46,800	14,040

6.2.4 Social Acceptance

6.2.4.1 Natural Environment Impact

The evaluation indicators for Natural environmental impacts are shown in Table 6-12. For the Criteria of Natural Environmental Impacts, the indicators are set for the improvement or non-improvement of natural environmental impacts (air, water quality, noise, vibration, etc.) as a result of project implementation.

Table 6-12 Evaluation Indicators for “Natural Environment Impact”

Field	Evaluation Indicator	Score	Full Marks
Common	• The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	5	5
	• The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	3	
	• The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).	0	

6.2.4.2 Social and Environmental Impact (Resettlement)

The evaluation indicators for Resettlement impacts are shown in Table 6-13. For the Criteria of effectiveness of Resettlement, the indicators are set based on JICA environmental categories. The determination of this indicator is simplified based on the project scope of each candidate project and the surrounding conditions of the project area, based on satellite images.

Table 6-13 Evaluation Indicators for "Social and Environmental Impact (Resettlement)"

Field	Evaluation Indicator	Score	Full Marks
Common	• JICA Environmental Category C (no relocation)	10	10
	• JICA Environment Category B (1 to 199 relocations)	5	
	• JICA Environment Category A (over 200 relocations)	0	

6.2.5 Appropriateness of Japanese ODA Loan Project

6.2.5.1 Applicability of Japanese Technology

The evaluation indicators for the Applicability of Japanese technology are shown in Table 6-14. For the Criteria of Use of Japanese technology, the indicators are set for the possibility of introducing Japanese technology and products based on the project scope of the candidate project.

Table 6-14 Evaluation Indicator of "Applicability of Japanese Technology"

Criteria	Field	Evaluation Indicator	Scoring	Full Marks
Applicability of Japanese Technology	Common	• There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.	10	10
		• There is a possibility of introducing technologies and products in which Japan excels.	5	
		• There is no possibility of introducing technologies and products in which Japan excels.	0	

6.2.5.2 Restrictions on Project Implementation

The evaluation indicators for Constraints on project implementation are shown in Table 6-15. For the criteria of constraints on project implementation, the indicators are set for the possibility of participation and competitiveness of Japanese contractors in the candidate projects.

Table 6-15 Evaluation Indicator of “Restrictions on Project Implementation”

Criteria	Field	Evaluation Indicator	Scoring	Full Marks
Restrictions on Project Implementation	Common	High possibility of Japanese contractors participating	10	10
		The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	5	
		Low possibility of Japanese contractors participating and introducing Japanese technologies and products	0	

6.3 Scoring of Candidate Projects

The scoring results for the candidate projects listed in the draft longlist, based on the aforementioned criteria and indicators, are shown in Table6-16 to Table 6-19.

Table6-16 Scoring Result (Road)

No.	Urgency (Maximum Score: 10)	Development Impact (Maximum Score: 40)					Investment Effectiveness (Maximum Score: 15)			Social Acceptability (Maximum Score: 15)			Validity of a Japanese ODA Loan (Maximum Score: 20)			Total Point	Priority
		Improvement of Connectivity	Synergies with Other Projects	Consistency with Development Plans	Project Risk	Subtotal	Economic Validity	Economic Development Impact	Subtotal	Natural Environment Impact	Social and Environmental Impact	Subtotal	Availability of Japanese Technology	Restrictions on Project Implementation	Subtotal		
RO-3	10	20	5	10	3	38	5	10	15	3	5	8	5	0	5	**76**	1
RO-1	3	20	5	10	5	40	5	10	15	3	10	13	5	0	5	**76**	1
RO-10	8	20	0	5	3	28	5	10	15	3	0	3	10	10	20	**74**	3
RO-7	8	15	5	10	3	33	5	10	15	3	5	8	5	0	5	**69**	4
RO-6	3	20	5	10	3	38	5	10	15	3	5	8	5	0	5	**69**	4
RO-4	3	20	0	10	5	35	5	0	5	3	10	13	5	0	5	**61**	6
RO-2	0	15	0	10	3	28	5	10	15	3	5	8	5	0	5	**56**	7
RO-9	0	20	0	10	3	33	5	5	10	3	5	8	0	0	0	**51**	8
RO-5	3	15	0	10	5	30	5	0	5	3	10	13	0	0	0	**51**	8
RO-8	0	20	0	10	3	33	5	0	5	3	5	8	0	0	0	**46**	10

NOTE: Details of scoring are shown in Appendix-2.

Table 6-17 Scoring Result (Bridge)

No.	Urgency (Maximum Score: 10)	Development Impact (Maximum Score: 40)					Investment Effectiveness (Maximum Score: 15)			Social Acceptability (Maximum Score: 15)			Validity of a Japanese ODA Loan (Maximum Score: 20)			Total Point	Priority
		Improvement of Connectivity	Synergies with Other Projects	Consistency with Development Plans	Project Risk	Subtotal	Economic Validity	Economic Development Impact	Subtotal	Natural Environment Impact	Social and Environmental Impact	Subtotal	Availability of Japanese Technology	Restrictions on Project Implementation	Subtotal		
Syr Darya	6	20	5	10	5	39	5	0	5	3	10	13	5	5	10	**73**	1
Jizzaf	8	20	1	6	5	32	5	4	9	3	10	13	5	5	10	**71**	2
Casica Dahlia	5	20	1	7	4	31	5	8	13	3	5	8	5	5	10	**68**	3
Andijan	7	10	0	7	5	22	5	10	15	3	10	13	5	5	10	**66**	4
Fergana	5	10	1	7	5	23	5	10	15	3	10	13	5	5	10	**66**	5
Tashkent	5	20	1	7	4	32	5	4	9	3	5	8	5	5	10	**64**	6
Samarkand	5	20	1	6	4	31	5	5	10	3	5	8	5	5	10	**64**	7
Namangan	5	10	0	5	3	18	5	10	15	3	5	8	5	5	10	**56**	8
Surukhandariya	5	10	0	5	3	18	5	10	15	3	5	8	5	5	10	**56**	8
Karakalnpakstan	7	10	1	7	4	22	5	3	8	3	5	8	5	5	10	**55**	10
Khorezm	5	10	1	7	3	21	5	5	10	3	5	8	5	5	10	**54**	11
Bukhara	5	10	0	7	3	20	5	5	10	3	5	8	5	5	10	**53**	12
Navoi region	5	10	0	5	4	19	5	5	10	3	5	8	5	5	10	**52**	13

NOTE: Details of scoring are shown in Appendix-2.

Table 6-18 Scoring Result (Road Disaster)

No.	Urgency (Maximum Score: 10)	Development Impact (Maximum Score: 40)					Investment Effectiveness (Maximum Score: 15)			Social Acceptability (Maximum Score: 15)			Validity of a Japanese ODA Loan (Maximum Score: 20)			Total Point	Priority
		Improvement of Connectivity	Synergies with Other Projects	Consistency with Development Plans	Project Risk	Subtotal	Economic Validity	Economic Development Impact	Subtotal	Natural Environment Impact	Social and Environmental Impact	Subtotal	Availability of Japanese Technology	Restrictions on Project Implementation	Subtotal		
RD-3 Takhtaqoracha Pass	15	10	0	5	5	20	5	10	15	5	10	15	5	5	10	**75**	1
RD-2 Kamchik Pass	15	3	0	5	3	11	5	10	15	5	10	15	5	5	10	**66**	2
RD-6 Jizzaf	5	10	0	5	5	20	5	10	15	5	10	15	5	5	10	**65**	3
RD-4 Kasikandariya	5	3	0	5	5	13	5	5	10	5	10	15	5	5	10	**53**	4
RD-8 Jizzaf	10	3	0	5	5	13	5	0	5	5	10	15	5	5	10	**53**	4
RD-5 Kasikandariya	5	0	0	5	5	10	5	0	5	5	10	15	5	5	10	**45**	6
RD-9 Navoi	5	0	0	5	5	10	5	0	5	5	10	15	5	5	10	**45**	6

NOTE: Details of scoring are shown in Appendix-2.

Table 6-19 Scoring Result (Railway)

No.	Urgency (Maximum Score: 15)	Development Impact (Maximum Score: 30)					Investment Effectiveness (Maximum Score: 10)			Social Acceptability In case of Construction: (Maximum Score: 20) In case of Non-Construction Project: (Maximum Score: 0)			Validity of a Japanese ODA Loan In case of Construction: (Maximum Score: 25) In case of Non-Construction Project: (Maximum Score: 25)			Total Point	Priority
		Improvement of Connectivity	Synergies with Other Projects	Consistency with Development Plans	Project Risk	Subtotal	Economic Validity	Economic Development Impact	Subtotal	Natural Environment Impact	Social and Environmental Impact	Subtotal	Availability of Japanese Technology	Restrictions on Project Implementation	Subtotal		
RW-4	10	20	3	10	3	36	0	10	10	0	0	0	10	5	15	**71**	1
RW-5	10	20	3	10	3	36	0	10	10	0	0	0	10	5	15	**71**	1
RW-3	10	15	3	10	3	31	0	10	10	0	0	0	0	5	5	**56**	3
RW-1	10	0	0	0	3	3	0	5	5	0	0	0	10	5	10	**33**	4
RW-2	10	0	0	0	3	3	0	5	5	0	0	0	10	5	10	**33**	4

NOTE: Details of scoring are shown in Appendix-2.

6.4 Draft Shortlist

As a result of the scoring, candidate projects with 60 points or more were selected for the draft shortlist. The draft shortlist is shown in Table 6-20.

Table 6-20 Draft Shortlist

Sector	Project	Score	Project Costs (Million USD)	
			Road	
			Asphalt Pavement	Concrete Pavement
			Bridge	
			Only International and National Roads	Including Local Roads
Road (5 Projects)	RO-3: A-377 "Samarkand sh-Ayniy " highway (0-36 km)	76	60	100
	RO-1: A373 "Tashkent-Osh" highway (309-354 km)	76	125	175
	RO-10: M39 "Takhta-Karacha Tunnel Construction Project"	74	262	
	RO-7: D089 "Fergana city - Kuvasai city - border of the Kyrgyz Republic" highway (6-25 km)	69	35	55
	RO-6: A-376 "Ko'kon-Jizzakh" highway (14-45 km)	69	55	85
Bridge (7 Regions)	Syrdarya Region	73	2.1	3.5
	Jizzaf Region	71	6.1	8.3
	Casica Dahlia Region	68	1.7	4.7
	Andijan Region	66	1.4	2.9
	Fergana Region	66	1.7	3.4
	Tashkent Region	64	8.8	21.9
	Samarkand Region	64	2.8	8.6
Road Disaster (3 Projects)	RD-3: M39 (1115-1145 km Post) "Almaty-Bishkek-Tashkent- Shahrisabz – Termez "	75	9.7	
	RD-2: A373 (103-177km Post) "Tashkent-Osh"	66	40.2	
	RD-6: M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"	65	5.4	
Railway (2 Projects)	RW-4: Construction of second electrified railway line, Tashkent- Angren	71	1,239	
	RW-5: Construction of second track of electrified high-speed railway line on Navoi -Bukhara section	71	1,117	

Source: JICA Survey Team

6.5 Potential Projects for Technical Cooperation and Equipment Supply

6.5.1 Project for Capacity Development for Road and Bridge Maintenance

The maintenance of roads and bridges under the MOT has been carried out by the CR regional offices (in each state capital). Regional offices have 40 to 50 maintenance staff who carry out road and bridge maintenance works, but due to budgetary shortages and aging equipment, efficient maintenance is not

being achieved. As for bridge maintenance, many bridges built during the Soviet era have been left in a serious state due to a shortage of bridge engineers and a lack of maintenance know-how. Particularly in Uzbekistan, due to the limited number of rivers and the scarcity of large-scale bridge construction projects, the development of human resources necessary for the bridge engineering sector is considered to be a significant issue. In order to improve this situation, strengthening the maintenance capacity of CR officials for road and bridge maintenance is an urgent task. By implementing the following technical cooperation projects in parallel with the Japanese ODA Loan Project, it is expected that the project will have a synergistic effect and that efficient maintenance and management capacity will be improved. An overview of the project for capacity development for road and bridge maintenance and management is as follows.

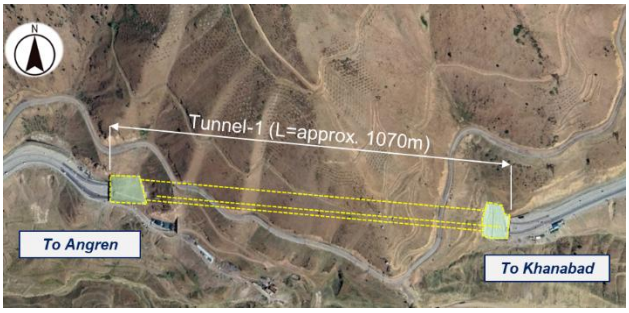
Table 6-21 Overview of the Project for Capacity Development for Road and Bridge Maintenance

Overall Goal	National highways and international highways in Uzbekistan are properly maintained and managed by MOT and CR.	
Project Goal	The road and bridge maintenance capacity of MOT and CR officials has improved.	
Project Period	36 months	
Counterpart	Ministry of Transport (MOT) and Committee of Roads (CR)	
Target Area	All of Uzbekistan	
Output		Activities
1. Capacity of CR and MOT officials for road maintenance is improved.		・Develop road and bridge inventory data. ・Implement technical transfer of road and bridge inspection methods ・Develop a database system for road and bridge maintenance ・Identify issues in bridge planning, design, and construction, and develop guidelines necessary for human resource development in bridge engineering. ・Implement technical transfer of formulation of maintenance plan ・Implement technical transfer of road/bridge repair design and repair works ・Prepare technical manuals for road/bridge inspection, planning, repair, etc. ・Prepare a medium-term road and bridge maintenance plan ・Organize technical seminars for road and bridge maintenance
2. Capacity of CR and MOT officials for bridge maintenance is improved.		
3. Knowledge of CR and MOT officials on the importance and necessity of road and bridge maintenance is improved, fostered through seminars, etc.		

6.5.2 Project for Capacity Development on Tunnel Project Management

There are two mountain road tunnels on international road A373 in the Kamchik Pass section (see Figure 6-3). These tunnels are a two-tube tunnel and have been operated and managed by the CR regional office of the Andijan region. Although the CR regional office has been conducting daily patrols and maintenance for tunnels, CR does not have tunnel engineers. On the other hand, several projects, including the mountainous road tunnel, such as the expressway project (Tashkent to Andijan) and the priority project (RO-10) currently being planned in Uzbekistan, and the tunnel project management capacity of MOT and CR is an issue. By implementing the following technical cooperation projects in parallel with the Japanese ODA Loan Project, it is expected that the project will have a synergistic effect

and that efficient tunnel project management capacity will be improved. An overview of the project for capacity development for tunnel project management is as follows.



Tunnel-1 (A373 144km)



Tunnel-2 (A373 147km)

Source: Prepared by JICA Survey Team based on Google Earth

Figure 6-3 Road Tunnels on A373

Table 6-22 Overview of the Project for Capacity Development for Tunnel Project Management

Overall Goal	Mountain road tunnels are properly operated and maintained by MOT and CR
Project Goal	The mountain road tunnel project management capacity of MOT and CR officials has improved.
Project Period	36 months
Counterpart	Ministry of Transport (MOT) and Committee of Roads (CR)
Target Area	All of Uzbekistan

Output	Activities
1. A section/unit and responsibilities for tunnel operation and maintenance in MOT or CR are established. 2. The capacity of MOT/CR on tunnel project management in the construction stage is improved. 3. The capacity of MOT/CR on tunnel project management in the operation and maintenance stage is improved.	・To review the present organization structure and responsibilities of tunnel management of MOT/CR ・To identify the management cycle for the mountain road tunnel project ・To prepare the tunnel project implementation plan ・To prepare a manual on the construction supervision of a mountain road tunnel ・To prepare a manual on the inspection and maintenance of the mountain road tunnel ・To organize a tunnel technical seminar ・To organize Japan training on tunnel project management

6.5.3 Support for Improving Logistics Efficiency through Reduction of Empty Cargo Trips

In the cargo OD interview survey conducted under this study, a certain proportion of "empty cargo trips" was observed in both import and export directions. For example, at the Karasu border point (RO-1), 15% of inbound and 53% of outbound cargo vehicles were recorded as empty, highlighting a notably low load factor, particularly for return trips. Such occurrences of empty trips significantly hinder logistics efficiency, leading to increased truck operation costs, inefficiencies in the logistics network, and heightened environmental impact. In Central Asia, chronic empty return trips are commonly caused by asymmetric industrial structures between countries, insufficient coordination among shippers, and inefficiencies in border procedures. On the other hand, in situations where connectivity is improved through hard infrastructure investments such as yen loan projects, the overall logistics performance cannot be maximized without simultaneously addressing these inefficiencies. Therefore, introducing

technical cooperation aimed at supporting the “soft” aspects, such as data visualization, matching support between cargo owners and transporters, and removal of institutional bottlenecks, can be considered effective. The following outlines a proposed technical cooperation project for improving logistics efficiency by reducing empty cargo trips.

Table 6-23 Outline of Proposed Technical Cooperation Project on Improving Logistics Efficiency through Reduction of Empty Cargo Trips

Overall Goal	Transport efficiency in international logistics with Uzbekistan and neighboring countries is improved, and regional connectivity is enhanced.
Project Purpose	Institutional arrangements for reducing empty cargo trips, improving operational capabilities, and enhancing inter-agency coordination are achieved.
Period of Project	Approximately 36 months
Target Group	Ministry of Transport, Customs and Border Control Agencies, Chamber of Commerce and Industry, Road Committee, Logistics Companies, etc.
Project Site	Major national borders (e.g., Karasu, Jartepa), transport corridors, and logistics hubs (e.g., Tashkent, Samarkand)

Outputs	Activities
1. The current status and causes of empty cargo trips are systematically identified.	・Expansion of cargo OD surveys at border points and intermediate cities (e.g., origin, destination, loading status) ・Analysis of causes of one-way transport through trade statistics and interviews with logistics operators ・Design of logistics efficiency indicators, including empty cargo rate and baseline setting
2. Policy measures and institutional reforms for reducing empty cargo trips are clarified.	・Support for designing transport matching platforms (e.g., empty vehicle information sharing) ・Consideration of customs procedure improvements to encourage backhaul usage ・Proposal of models for cooperation among local logistics providers (e.g., joint delivery, consolidation)
3. Institutional capacity is enhanced through pilot projects and policy recommendations.	・Pilot projects at model border or corridor locations (e.g., empty trip matching experiments, time-series observations) ・Organization of workshops to build coordination among ministries, local governments, and the private sector ・Formulation of a medium-term action plan and implementation of policy dialogues

7 SELECTION OF PRIORITY PROJECTS

7.1 Policy for Selecting Priority Projects and Results

Priority projects are selected in consultation with MOT and JICA, based on the shortlist scoring results and the project's appropriateness and feasibility as a Japanese ODA loan project.

Regarding the selection of priority projects, the policy focused on three areas:

(1) strengthening major logistics networks (Caspian Sea route and CAREC) based on the upgrading of the transportation and logistics network and the potential of the transportation system as put forward in the "Uzbekistan Strategy 2030," (2) strengthening the Southern Corridor (Uzbekistan-Afghanistan-Pakistan), which is being promoted to eliminate the bottleneck of double landlocked countries logistics, and (3) strengthening connectivity with Kyrgyz and Tajikistan based on the progress in demarcating the borders of Kyrgyz and Tajikistan.

In the road, bridge and road disaster sector, five projects which are four road rehabilitation or widening projects (RO-1, RO-3, RO-6, RO-7) that are expected to strengthen border connections with Kyrgyz and Tajikistan and 1 new bypass construction project (RO-10) and road disaster prevention project (RD-3) that is expected to strengthen the transport capacity of the Caspian Sea route were selected as the priority projects.

In the railway sector, Project RW-5, which forms part of the central corridor of the Caspian Sea route, was considered a priority project. However, due to the large-scale organizational reform associated with the privatization of UTY, consideration of new sovereign loan projects has been halted, and it is difficult to start new projects in time. Therefore, the railway sector was excluded from the priority projects.

The priority projects are presented in Table 7-1.

Table 7-1 Priority Project List

Project No.	Projects	Length (km)	Road Class	Project Scope
RO-1	A373 "Tashkent-Osh" (309-354 km)	45.0	International Roads	Rehabilitation
RO-3	A-377 "Samarkand-Ayniy " (0-36 km)	36.0	International Roads	Rehabilitation + Road Widening
RO-6	A376 "Ko'kon-Jizzakh" (14-45 km)	31.0	International Roads	Rehabilitation + Road Widening
RO-7	D089 "Fergana-Kuvasai- Border of the Kyrgyz Republic" (6-25km)	19.0	National Roads	Rehabilitation + Road Widening
RO-10 + RD-3	M39 "Takhta-Karacha Tunnel Construction Project"	12.0	International Roads	New Tunnel Construction
	M39 "Almaty- Bishkek-Tashkent- Shahrisabz - Termez "(1115-1145 km)	30.0	International Roads	Countermeasure for Rockfall

In addition, through further discussions between MOT and JICA, the projects (RO-1, RO-3, RO-10, and RD-3) were selected as the highest priority projects for carrying out the preparatory surveys.

7.2 Other Components in Highest Priority Projects

7.2.1 Replacement of Existing Bridges

Site surveys were conducted for the shortlisted bridges in Andijan and Samarkand regions, where the highest priority projects are to be implemented, and the necessity of bridge replacement was examined. Based on the survey results, Table 7-2 and Table 7-3 summarize the urgency of bridge replacement—whether they should be implemented as part of road improvement projects—for three bridges in Andijan Region and eight bridges in Samarkand Region. Consequently, it was determined that one bridge in the Andijan region and four bridges in the Samarkand region require urgent replacement.

Among them, the four bridges in the Samarkand region, located on secondary trunk roads on the Caspian Sea route, are likely to be prioritized for replacement due to their potential to enhance connectivity. Basic information (bridge specifications) and location maps for the selected bridges in the Samarkand Region are provided in Table 7-4.

Table 7-2 Urgency of Bridge Replacement for Each Bridge Project (Andijan Region)

No. (Br. Code)	Bridge Project Name	Structural Integrity Assessment (or the necessity of replacement)	Surrounding Conditions	Urgency
Andij-1	Reconstruction of the bridge at km 582 on the M41 "Bishkek – Dushanbe – Termez" Highway	Due to old standards, the load resistance against earthquakes and floods is low.	A relatively new two-lane concrete bridge has already been constructed.	Low
Andij-2	Reconstruction of the Zovur Bridge at km 41 on the D086 "Margilan City – Ulugnor District" Highway	Due to old standards, the load resistance against earthquakes and floods is low. Concrete deterioration is progressing, and severe scouring around the substructure is observed.	The surroundings are farmland, and detour routes are easily available. A natural river flows nearby.	**High**
Andij-4	Reconstruction of the bridge at 14.22 km of D132 "Andijan public road" highway	Due to old standards, load resistance against earthquakes and floods is low, but damage is limited, and the structure is relatively sound. The piers are slender, raising seismic resistance concerns.	A city ring road crossing over a railway.	Medium

Table 7-3 Urgency of Bridge Replacement in Each Bridge Project (Samarkand Region)

No. (Br. Code)	Bridge Project Name	Structural Integrity Assessment (or the necessity of replacement)	Surrounding Conditions	Urgency
No.1 (Samar-3)	Reconstruction of the bridge at km 16 on the D070 "Juma City – Khonchorvoq Settlement – A378 Highway (to km 30)" Highway	Due to old standards, the load resistance against earthquakes and floods is low. The bearing structure is fragile and in poor condition.	The surroundings are farmland, and detour routes are readily available. A natural river flows nearby.	Medium
No.2 (Samar-10)	Reconstruction of the bridge at km 29 on the D047 "Zarafshan Tract" Highway, Payariq District	Due to old standards, the load resistance against earthquakes and floods is low. The deck slab is partially damaged, with a risk of collapse.	Nearby residential area; detour routes are possible. A natural river flows nearby.	**High**
No.3	Reconstruction of the	Due to old standards, the load	Nearby hospital and	**High**

No. (Br. Code)	Bridge Project Name	Structural Integrity Assessment (or the necessity of replacement)	Surrounding Conditions	Urgency
(Samar-8)	bridge at km 5.6 on the V078 "Samarkand City – Bulung‘ur City – Barlos Settlement – Alamli Settlement" Highway, Jomboy District	resistance against earthquakes and floods is low. Pavement is missing at joints with wide gaps.	restaurants. If vacant land near the hospital can be used, detour routes can be secured. A natural river flows nearby.	
No.4 (Samar-7)	Reconstruction of the bridge at km 0.08 on the M37 "Samarkand - Bukhara – Turkmenbashi" Highway	Damage is limited, and the structure is relatively sound. However, the road sections before and after the bridge have four lanes, whereas the bridge has only two lanes, causing a traffic bottleneck. In addition, abrupt lane changes occur immediately before and after the bridge, raising traffic safety concerns. For these reasons, the Samarkand office has classified this bridge as a high-priority candidate for replacement.	Located in the Samarkand city area with gas stations and apartment buildings nearby. Detours can be secured using parking lots. A levee river, and promenade are maintained under the girder.	**High (for widening)**
No.5 (Samar-6)	Reconstruction of the bridge at km 38.2 on the D065 "Juma City – Kattaqo‘rg‘on City" Highway, Pastdarg‘om District	Due to old standards, the load resistance against earthquakes and floods is low. Damage is limited, and the structure is relatively sound.	Former railway bridge. Tracks were relocated in 2012. Surroundings are vacant land, and detour routes are easily secured.	Medium
No.6 (Samar-5)	Reconstruction of the bridge at km 12.2 on the D069 "Toyloq District – Urgut City" Highway, Urgut District	Due to old standards, the load resistance against earthquakes and floods is low. The intermediate slab has large voids and exposed reinforcement.	Nearby residential and commercial facilities. An old bridge remains adjacent. Detour routes can be secured by removing the old bridge and using commercial parking spaces. A natural river flows nearby.	**High**
No.7 (Samar-4)	Reconstruction of the bridge at km 56 on the D067 "Zarafshan Tract" Highway, Ishtikhon District	Due to old standards, the load resistance against earthquakes and floods is low. Damage is limited, and the structure is relatively sound.	The surroundings are farmland, and detour routes are readily available. A natural river flows nearby.	Low

Note: Samar-12 was excluded as the field survey confirmed that the bridge is located on a local road, not an international road.

Table 7-4 Specifications of bridges to be reconstructed in the Samarkand Region

No. (Br. Code)	Road Name	Year of Construction	Daily Traffic Volume (vehicles/day)	Bridge Length (m)	Total Width (m)	Scope
No.1 (Samar-10)	4P49	1964	6,300	30	15	Reconstruction
No.2 (Samar-8)	4P238	1972	5,200	36	10	Reconstruction
No.3 (Samar-7)	Motrid ko'chasi	1984	22,500	55	22	Widening
No.4 (Samar-5)	4P50	1987	10,500	82	15	Reconstruction



No.1(Samar-10)



No.2(Samar-8)

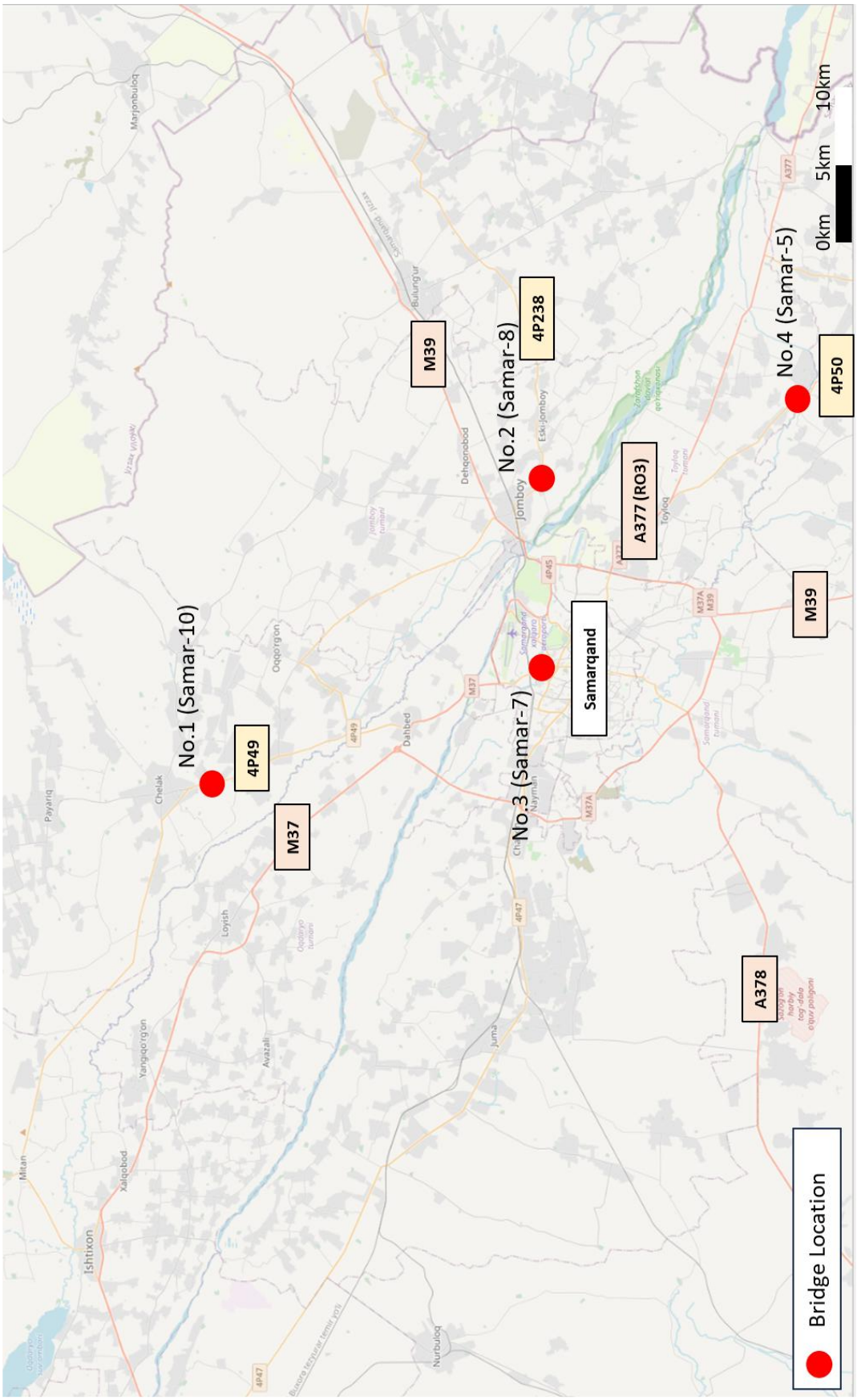


No.3(Samar-7)



No.4(Samar-5)

Figure 7-1 Current Photos of Bridge Reconstruction in Samarkand Region

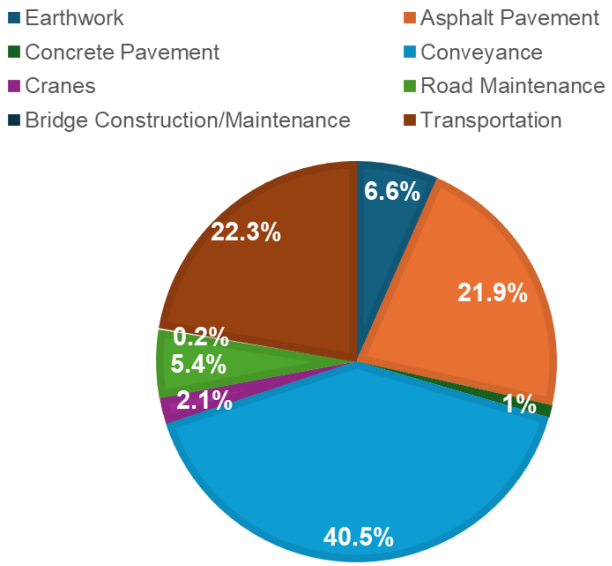


Source: JICA Study Team

Figure 7-2 Location Map of Bridges for Replacement in Samarkand Region

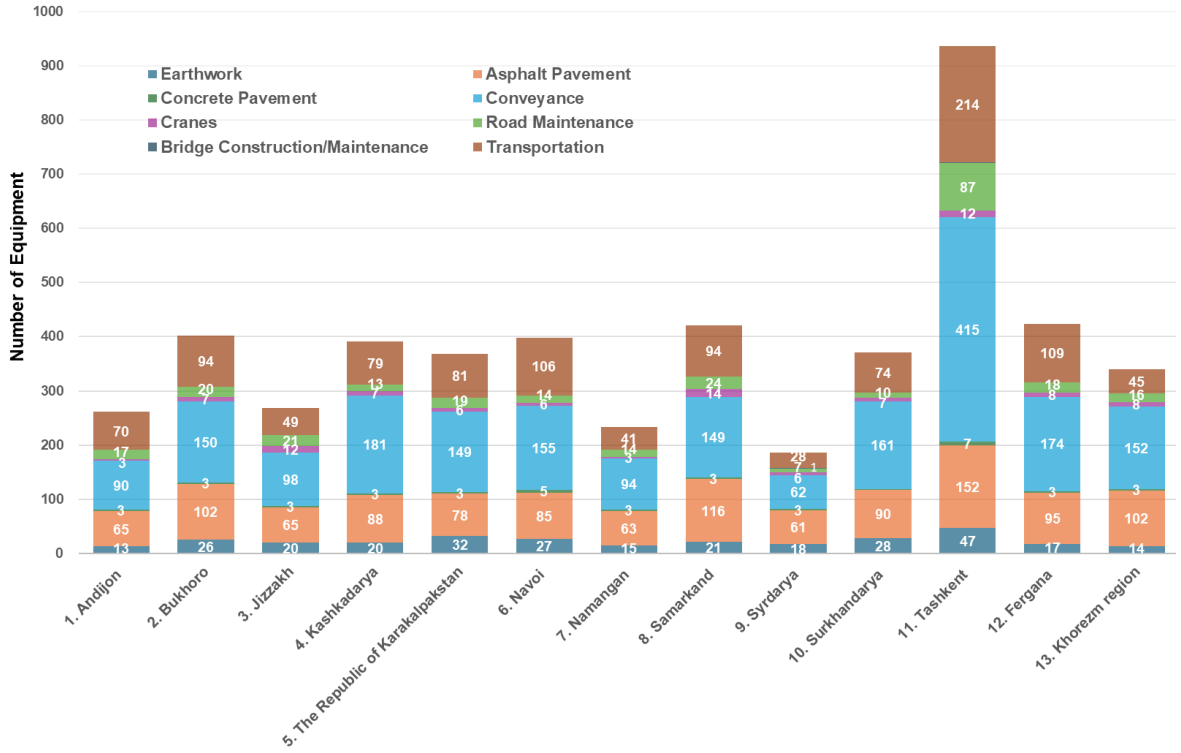
7.2.2 Procurement of Heavy Machinery for Road Construction

Road maintenance companies (Unitary Enterprises) have been implementing most of the road construction and maintenance. These projects are carried out under the jurisdiction of CR regional offices, and they have the necessary manpower and equipment/machinery (including asphalt plants) for road construction and maintenance (see Chapter 8.4 and Appendix-3). As shown in Figure 7-3 and Table 7-5, road maintenance companies own a wide range of equipment/machinery for earthworks, asphalt paving, concrete paving, transportation, etc.



Source: JICA Survey Team

Figure 7-3 Percentage of Equipment Types owned by Road Maintenance Companies



Source: JICA Survey Team

Figure 7-4 Number of Equipment by Types owned by Road Maintenance Companies

Table 7-5 Major Equipment Owned by Road Maintenance Companies

Equipment Types	Major Equipment
Earth Works	Bulldozers / Scrapers / Excavators / Front Loaders, etc.
Asphalt Paving	Asphalt Distributors / Asphalt Finishers / Asphalt Pavers / Graders / Road Rollers, Road Cutting Machine, etc.
Concrete Paving	Agitator Trucks / Concrete Paver / Concrete mixers, etc.
Conveyance	Dump Trucks / Pickup Trucks / Trailers / Forklifts, etc.
Cranes	Truck Cranes / Crawler Cranes, etc.
Road Maintenance	Road Marking Machine / Snow Removal Machine / Road Sweeper, etc.
Bridge Construction & Maintenance	Drilling Machine / Pile Driving Machine
Transportation	Bus / Mini Van, etc.



Road Milling Machine (Samarkand Region)



Road Roller (Andijan Region)

Figure 7-5 Photos of Equipment owned by Road Maintenance Companies

However, most of the equipment is made in China, and some of it is aging and due for replacement. Furthermore, due to the recent increase in traffic volume and the intensification of disasters caused by climate change, there is a shortage of equipment for road restoration and other related works. As a result, proper road maintenance cannot be sufficiently implemented. If road maintenance equipment is to be procured through a yen loan project, it is necessary to carefully verify the operational status and maintenance conditions of the existing equipment, as well as the necessity of procurement through the yen loan project, before formulating a procurement plan. The results of the survey conducted under this study are shown in Table 7-6.

In addition, Figure 7-6 and Table 7-8 show the list of road construction and maintenance heavy machinery requested by CR and the corresponding rough cost estimates.

Table 7-6 Necessity of Procuring Heavy Machinery for Road Construction and Maintenance

No.	Survey/Study Item	Result
1	Operational status of existing equipment	As shown in Table 7-7, **for the heavy machinery requested by CR (excluding motor graders), the number of units is limited, and most are Chinese-made and have been in use for over five years.** In the case of motor graders, a relatively higher number of units are operational compared to other machinery—10 units in the Andijan region and 15 units in the Samarkand region. However, all of these motor graders are also Chinese-made, and about two-thirds have been in operation for over five years, raising concerns about breakdowns or becoming non-functional.
2	Maintenance status	**Chinese-made construction machinery often experiences issues within approximately five years.** Moreover, the dealers handling Chinese products employ only around 2 to 3 technical support staff, making after-sales service unreliable. In addition, since spare parts are not stocked, repairs reportedly take a long time.
3	Necessity of procurement through the yen loan project	Although the quality and reliability of Japanese products are well recognized locally, their initial cost has been higher compared to Chinese products, and therefore, they have not been widely used. However, to promote the deployment of Japanese technologies and products overseas, the necessity of procurement through a yen loan project is considered high.

Source: Prepared by the JICA Study Team based on interview surveys with CR's local offices and construction machinery dealers.

Table 7-7 Inventory List of Heavy Machinery for Road Construction and Maintenance

Heavy Machinery	Operational Units (No. of Units)		Units Broken/Non-functional or Over 10 Years with Issues (No. of Units)	
	Andijan Region	Samarkand Region	Andijan Region	Samarkand Region
Motor Grader	10	15	6	10
Bulldozer	2	2	2	0
Wheel Loader	2	3	1	1
Excavator	6	0	4	0
Backhoe Loader	0	5	0	1

Source: Prepared by JICA Study Team based on interview surveys with CR's local offices and construction machinery dealers.

Table 7-8 Cost of Procuring Heavy Machinery for Road Construction and Maintenance

Heavy Machinery	Quantity	Unit Price (USD)	Amount (USD)
Motor Grader (169 kW, Blade 4.0m or equivalent)	68	321,500	21,862,000
Bulldozer (152 kW, 21t or equivalent)	3	313,800	941,400
Bulldozer (208 kW, 32t or equivalent)	2	461,600	923,200
Wheel Loader (156 kW, 3.1-3.3 m^3 or equivalent)	20	231,500	4,630,000
Excavator (62 kW, 1.3 m^3 or equivalent)	40	145,400	5,816,000
Crawler Excavator (325 kW, 3.1 m^3 or equivalent)	4	420,200	1,680,800
Wheeled Excavator (165 kW, 1.6 m^3 or equivalent)	6	325,000	1,950,000
Pile Driving Machine (117 kW, 42t or equivalent)	2	720,000	1,440,000
Drilling Pile Driving Machine (86 kW, 31t or equivalent)	2	720,000	1,440,000
Total			40,683,400

Source: Prepared by JICA Study Team based on unit prices (2025) obtained from local authorized dealers.

No.	Regions	Sub–Total	Special Machinery and Equipment								
			Motor Grader (169 kW, Blade 4.0m)	Bulldozer (152 kW, 21t)	Bulldozer (208 kW, 32t)	Wheel Loader (156 kW, 3.1-3.3 m³)	Excavator (62 kW, 1.3 m³)	Crawler Excavator (325 kW, 3.1m³)	Wheeled Excavator (165 kW, 1.6 m³)	Pile Driving Machine (117 kW, 42t)	Drilling Pile Driving Machine (86 kW, 31t)
	Total Number of Equipment	**147**	**68**	**3**	**2**	**20**	**40**	**4**	**6**	**2**	**2**
1	Republic of Karakalpakstan	**10**	5	0	0	1	3	0	1	0	0
2	Andijan	**9**	4	0	0	2	3	0	0	0	0
3	Bukhara	**11**	5	1	0	1	3	0	1	0	0
4	Jizakh	**10**	4	0	1	1	3	1	0	0	0
5	Kashkadarya	**11**	5	0	0	2	3	1	0	0	0
6	Navoiy	**10**	5	0	0	1	3	0	1	0	0
7	Namangan	**10**	5	0	0	2	3	0	0	0	0
8	Samarqand	**10**	6	0	0	1	3	0	0	0	0
9	Surkhandarya	**11**	5	1	0	1	3	1	0	0	0
10	Syrdarya	**10**	4	0	0	2	3	0	1	0	0
11	Tashkent	**13**	7	0	1	1	3	1	0	0	0
12	Fergana	**10**	5	0	0	1	3	0	1	0	0
13	Khorzem	**10**	5	1	0	1	3	0	0	0	0
14	Uzbek Road and Bridge Cluster	**12**	3	0	0	3	1	0	1	2	2
	Unit Prices (USD)		321,500	313,800	461,600	231,500	145,400	420,200	325,000	720,000	720,000
	Total Price (USD)		21,862,000	941,400	923,200	4,630,000	5,816,000	1,680,800	1,950,000	1,440,000	1,440,000
	Grand Total (USD)		40,683,400								

Source: Prepared by JICA Study Team based on information shared by CR.

Figure 7-6 List of Heavy Machinery for Road Construction and Maintenance Requested by CR

8 DATA COLLECTION FOR THE FORMULATION OF PRIORITY PROJECTS

8.1 Traffic Demand Survey

8.1.1 Overview

To assess the traffic demand of the priority projects, the following surveys were conducted. Daily traffic volume data was obtained from the latest fixed-point observation data owned by CR. A freight Origin-Destination (OD) survey was conducted at two border customs facilities, with a sampling rate of over 15% of freight trucks. Data was collected through interviews, including origin, destination, and type of cargo.

Table 8-1 Traffic Demand Survey

Route	Daily Traffic Volume Survey	Freight OD Survey	Remarks
RO-1:	4 locations (April 2025)	16 hours (June 2025)	Survey location: Dustlik Border
RO-3:	5 locations (April 2025)	16 hours (June 2025)	Survey location: Jartepa Border
RO-6:	1 location (April 2025)	-	
RO-7:	2 locations (April 2025)	-	
RO-10 / RD-3:	1 location (April 2025)	-	

8.1.2 RO-1: A373 "Tashkent-Osh" (309-354 km)

(1) Current Traffic Volume Data

This road traverses the Andijan Region in eastern Uzbekistan and connects to the Kyrgyz border. It is designated as a strategic corridor for international logistics, being part of the CAREC corridor network. According to the traffic volume survey conducted in April 2025, the observed daily traffic volumes across the surveyed segment (approximately km 297–331) ranged from 22,952 to 48,940 vehicles per day. Particularly high volumes were recorded at km 309 (48,940 vehicles/day) and km 320 (48,727 vehicles/day), indicating very strong transport demand in this section.

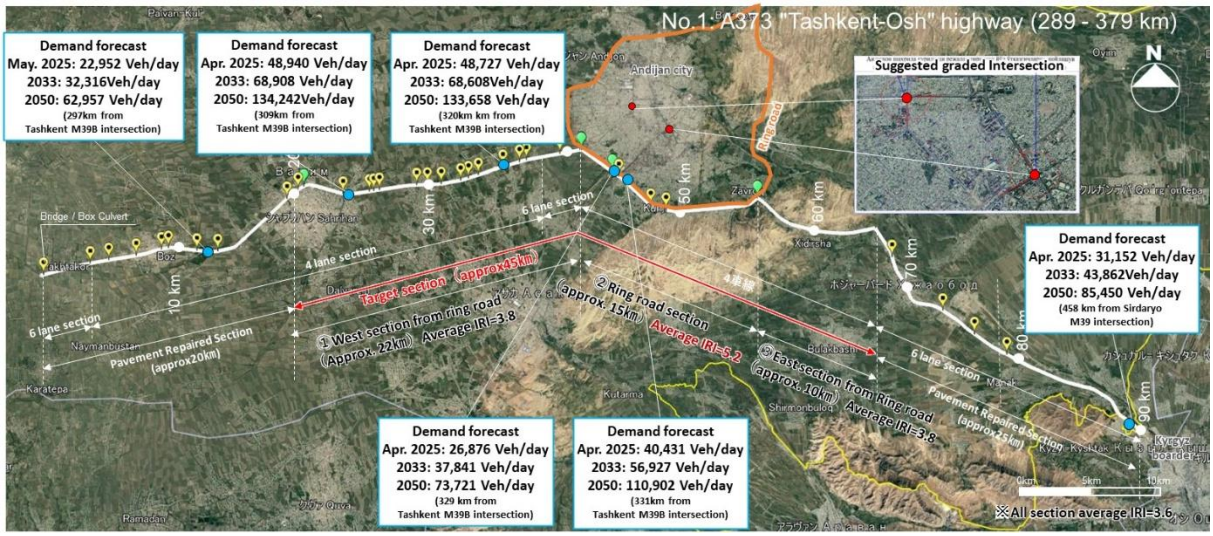
The following figure shows the estimated future traffic volume based on CR's measured traffic volume and future traffic volume growth rate (2028)[1].

[1] Based on Central Asia Regional Economic Cooperation Corridor 2 Karakalpakstan Road (A380 Kungrad to Daut-AtaSection) Project (RRP UZB 48414)

Table 8-2 A373 Traffic Count Survey Result (RO-1)

No.	Serial number of the vehicle	Registration address on the highway km	Clock, time	Week	Cargo vehicles					Road train	Light vehicles	Buses	Tractor	Motorcycles	Hourly	Coefficient	Average annual daily flow	Total
					3 tons	6 tons	10 tons	12 tons	14 tons									
1	A-373	297	8-9	Tuesday	19	23	12	22	31	4	1104	22	4	16	**1257**	17.39	1.05	**22,952**
2	A-373	309	8-9	Monday	64	45	37	30	38	18	3187	9	3	8	**3439**	13.30	1.07	**48,940**
3	A-373	320	9-10	Monday	63	38	29	28	38	18	3192	9	2	7	**3424**	13.30	1.07	**48,727**
4	A-373	331	15-16	Saturday	20	41	22	32	45	11	2742	6	2	2	**2923**	13.30	1.04	**40,431**
5	A-373	329	13-14	Saturday	16	25	14	21	32	6	2205	3	1	3	**2326**	11.11	1.04	**26,876**

Source: Provided by CR



Source: JICA Survey Team

Figure 8-1 Current Traffic Volume Data

(2) Cargo OD Interview Survey

The survey was carried out on June 18, 2025, and interviews were conducted with passing freight vehicle drivers regarding their origin and destination (city/country), type of cargo, and other related details. The total number of interview samples collected was 289, of which 109 were inbound (entering Uzbekistan) and 180 were outbound (leaving Uzbekistan).

1) Interview Sample Rate

The survey examined the sampling rate by comparing it with vehicle classification traffic counts. The results are shown in the table below.

Table 8-3 Sample Rate in The Cargo OD Interview Survey at RO-1

Direction	Inbound			Outbound		
Truck Type	Volume (vehicles)	No. of Samples	Sample Rate	Volume (vehicles)	No. of Samples	Sample Rate
Small/Pickup Trucks	686	0	0%	1,695	0	0%
Medium/Large Trucks	1,414	90	6%	827	158	19%
Trailer Trucks	286	16	6%	286	18	6%

Source: JICA Survey Team

Focusing on medium and large vehicles (excluding small pickups and vehicles not subject to customs), the sample rate for inbound was 6%, and for outbound it was 19%. In particular, the outbound direction had a very high sample rate, with more than one out of every five vehicles responding to the survey. This indicates a high level of reliability and reproducibility for the collected data.

2) Country of Origin and Destination

Based on the pie charts, it is evident that the main origin countries of inbound cargo were China and Kyrgyzstan. This reflects Uzbekistan's structural dependence on industrial goods and intermediate goods sourced from outside Central Asia, especially from the East. It suggests that the eastern part of Uzbekistan heavily relies on external procurement.

Conversely, the destinations of outbound cargo were overwhelmingly concentrated in Kyrgyzstan, indicating a high share of short- to medium-distance cross-border transport with neighboring countries. This supports the existence of an established logistics network between the Andijan–Fergana Basin and southern Kyrgyzstan, highlighting the road's function as a logistics base supporting cross-border economic exchange.



[Inbound] [Outbound]

Source: JICA Survey Team

Figure 8-2 Cargo OD Interview Survey Result at RO-1 (Country of Origin and Destination)

3) Commodity Composition

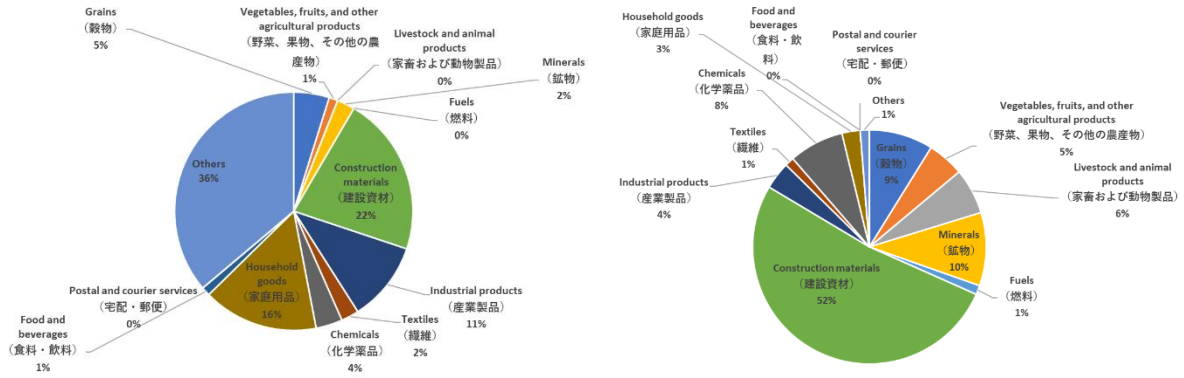
Examining the breakdown of cargo commodities (excluding empty or unknown items), inbound cargo was led by "Others" (31.9%), followed by construction materials (22%), household goods (16%), and industrial products (11%). This indicates a diverse inbound logistics structure, including consumer

goods, construction-related materials, and industrial supplies. Other notable items include grains (5%), chemicals (4%), minerals (2%), and textiles (2%), showing a broad range of goods relevant to both daily life and industry.

On the outbound side, there was a clear concentration in specific commodities, with construction materials accounting for over half (52%) of the total. This was followed by minerals (10%), grains (9%), chemicals (8%), and livestock and animal products (6%), indicating a predominance of locally sourced raw materials and natural resources. Items such as agricultural products (5%), industrial products (4%), and household goods (3%) followed, but the proportion of high value-added or finished goods was generally low, suggesting limited export sophistication.

No freight related to fuel or postal/courier services was observed in either direction, implying that energy transport and e-commerce logistics are not significant on this route. In summary, there is a clear asymmetry: inbound cargo consists of diversified imports for urban consumption, while outbound cargo is focused on bulk raw materials and construction resources. This reveals structural challenges such as the lack of industrial upgrading and low export value addition, indicating the need for coordinated logistics and industrial policies moving forward.

Although not illustrated in the charts, it is particularly noteworthy that 15% of inbound cargo (i.e., the return trip of outbound cargo) and 53% of outbound cargo (i.e., the return trip of inbound cargo) were empty. This indicates a low loading rate on return trips and highlights a significant opportunity for improvement in terms of logistics efficiency.



[Inbound] [Outbound]

Source: JICA Survey Team

Figure 8-3 Cargo OD Interview Survey Results at RO-1 (Commodity Composition Excluding 'Empty' and 'Unknown')

4) Cargo Traffic Volume

According to the vehicle classification traffic count survey conducted at the same location, a total of 6,743 freight vehicles passed through between 6:00 and 22:00 (16 hours), averaging about 420 vehicles per hour or 7 vehicles per minute. This suggests extremely high logistics frequency on this corridor.

Traffic peaked in the morning hours, which is considered attributable to customs operating hours and

batch processing procedures. In the future, it will be necessary to enhance customs handling capacity in line with cargo volume fluctuations and to reconfigure road cross-sections to accommodate increased demand.

8.1.3 RO-3: A-377 "Samarkand-Ayniy" (0-36 km)

(1) Current Traffic Volume Data

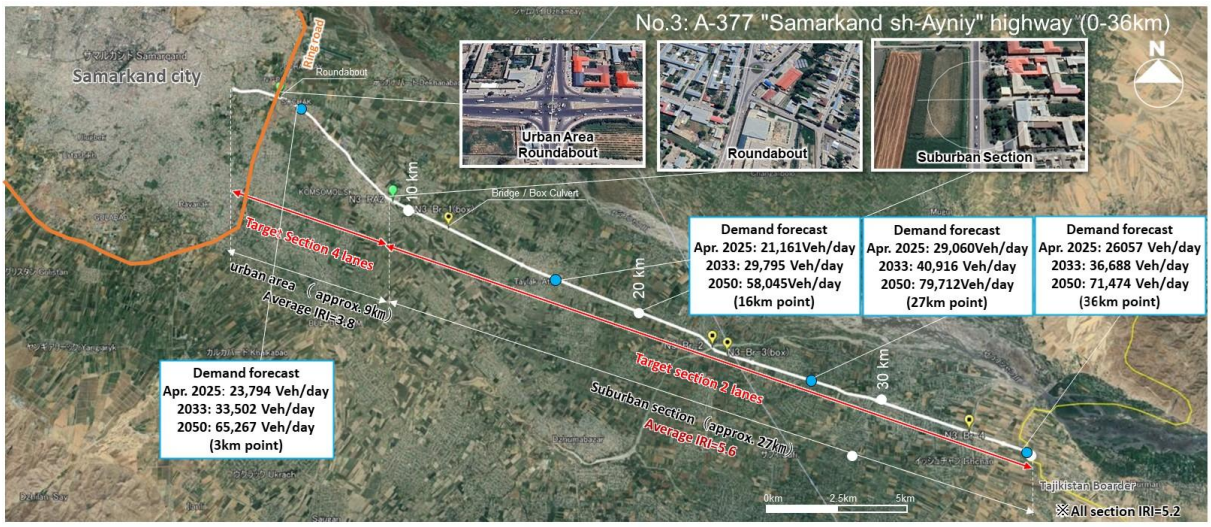
This road begins in the historic city of Samarkand and connects to the border with Tajikistan, serving as an international trunk highway. According to the traffic volume survey conducted in April 2025, daily traffic volumes by location ranged from 21,161 vehicles/day (at km 16) to 29,060 vehicles/day (at km 27), indicating that consistent transport demand is maintained from suburban areas near the city to outlying rural sections.

Traffic volumes in the future were estimated based on CR's measured traffic volumes and ADB's assumed future traffic growth rate. The current traffic volume is high at approximately 24,829 vehicles/day, and is expected to increase further, especially during the peak tourist season.

Table 8-4 A373 Traffic Count Survey Result (RO-3)

No.	Serial number of the vehicle	Registration address on the highway km	Clock, time	Week	Cargo vehicles					Road train	Light vehicles	Buses	Tractor	Motorcycles	Hourly	Coefficient	Average annual daily flow	Total
					3 tons	6 tons	10 tons	12 tons	14 tons									
1	A-377	3	8-9	Friday	32	50	43	31	28	0	1462	6	12	8	**1672**	13.30	1.07	**23,794**
2	A-377	16	9-10	Friday	14	22	17	8	13	0	1390	5	9	9	**1487**	13.30	1.07	**21,161**
3	A-377	27	8-9	Monday	16	16	22	35	31	25	1810	29	16	42	**2042**	13.30	1.07	**29,060**
4	A-377	37	9-10	Monday	18	14	18	28	32	27	1621	22	12	39	**1831**	13.30	1.07	**26,057**

Source: Provided by CR



Source: JICA Survey Team

Figure 8-4 Current Traffic Volume Data

(2) Cargo OD Interview Survey

The Jartepa border crossing, located within RO-3, serves as a strategic international logistics route connecting Samarkand Province in eastern Uzbekistan with Tajikistan. A cargo OD interview survey was conducted at this location on June 13, 2025, targeting truck drivers to collect data on origin/destination locations and types of cargo.

A total of 44 interview samples were obtained, comprising both Inbound (into Uzbekistan) and Outbound (toward Tajikistan) directions.

1) Interview Sample Rate

A comparison between the number of interview samples and the traffic count by vehicle type is presented below.

Table 8-5 Sample Rate in the Cargo OD Interview Survey at RO-3

Direction	Inbound			Outbound		
Truck Type	Volume (vehicles)	No. of Samples	Sample Rate	Volume (vehicles)	No. of Samples	Sample Rate
Small/Pickup Trucks	1,761	0	0%	1,739	0	0%
Medium/Large Trucks	29	3	10%	23	2	9%
Trailer Trucks	61	33	54%	47	6	13%

Source: JICA Survey Team

Among medium- and heavy-duty vehicles—the core carriers of international transport—trailer trucks exhibited particularly high sampling rates, especially Inbound, with a rate exceeding 50%. Even when limited to medium or larger vehicles, the sampling rates exceeded 5–10% in both directions. While the absolute number of samples is relatively small, the coverage is sufficient for macro-level analysis of logistics trends, and the representativeness of the sample is considered adequate.

2) Country of Origin and Destination

According to the survey, approximately 85% of Inbound cargo (imports) originated from Tajikistan, with Samarkand, Tashkent, and Jizzakh listed as key destinations in central Uzbekistan. On the other hand, all Outbound cargo (exports) was bound for cities within Tajikistan, demonstrating that the Jartepa crossing functions as a route for short- and medium-distance cross-border logistics between the two countries.



[Inbound] [Outbound]

Source: JICA Survey Team

Figure 8-5 Cargo OD Interview Survey Result at RO-3 (Country of Origin and Destination)

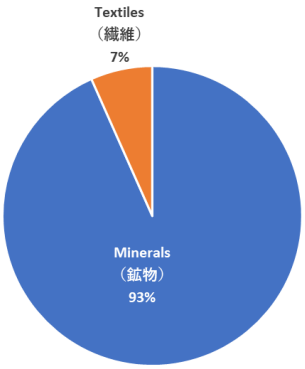
3) Commodity Composition

Regarding cargo types observed at the RO-3 point, Inbound shipments were overwhelmingly concentrated in a single category, with "Minerals" accounting for 93% (28 cases), followed by "Textiles" at 7% (2 cases). There was virtually no cargo related to consumer goods or industrial products.

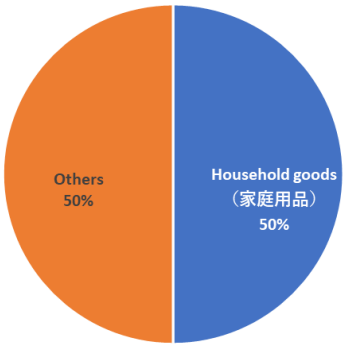
In the Outbound direction, although the number of samples was very limited, "Household goods" and "Others" each accounted for 50% (1 case each), suggesting that only a limited amount of goods are being exported.

This structure indicates that the border point functions primarily as a one-way entry route for mineral resources. Compared to bidirectional logistics borders, there exists a clear structural asymmetry of dependency between the supplier (Tajikistan) and the consumer (Uzbekistan).

Moreover, although not illustrated in the charts, a noteworthy point is that 21% of Inbound and 75% of Outbound trucks were "empty." This high empty-truck ratio highlights a significant issue in terms of logistics efficiency. Particularly in the Outbound direction—from Uzbekistan to Tajikistan—three out of four vehicles crossed the border without cargo, implying that return trips are either economically unsustainable or lack an established mechanism for securing backhaul freight. Similarly, the fact that more than 20% of Inbound trucks were also empty reveals inefficiencies in reverse logistics in both directions. These issues may stem from structural and institutional constraints such as customs procedures, commercial distribution systems, lack of information integration, and underdeveloped shipper networks. As a critical node connecting smaller regional economies, RO-3 faces a pressing need to enhance logistical efficiency.



[Inbound]



[Outbound]

Source: JICA Survey Team

Figure 8-6 Cargo OD Interview Survey Result at RO-3 (Commodity Composition Excluding 'Empty' and 'Unknown')

4) Cargo Traffic Volume

According to the compiled results of the traffic volume survey, a total of 3,658 freight vehicles passed the survey point during the 16-hour observation period from 6:00 to 22:00. This included 1,851 vehicles in the Inbound direction and 1,807 in the Outbound direction, equating to approximately 229 vehicles per hour. Although classified as a mid-sized border crossing, Jartepa handles a consistent volume of logistics traffic. Notably, over 90% of the vehicles were small trucks or pickups, while the remaining 10% comprised medium- and heavy-duty trucks or trailers.

8.1.4 RO-6: A376 "Ko'kon-Jizzakh" (14-45 km)

(1) Current Traffic Volume Data

This road section is presumed to traverse suburban residential areas and rural farming zones. According to the traffic volume survey conducted in April 2025, stable volumes were observed along the section, with 22,627 vehicles/day recorded at the 5 km point and 22,101 vehicles/day at the 20 km point.

Route A-376, which is the subject of RO-6, is an international arterial road that crosses the Fergana Basin and connects Kokand to the border with Tajikistan via Jizzakh. The current traffic volume is approximately 22,247 vehicles/day, which is high for a regional road, and is dominated by cross-border traffic of long-distance buses, small-lot logistics, and commercial vehicles. In particular, economic exchanges between the densely populated areas around Kokand and the city of Khujand on the Tajikistan side are continuously increasing, and human and logistical ties between the two countries are expected to be further strengthened in the future.

Table 8-6 A376 Traffic Count Survey Result (RO-6)

No.	Serial number of the vehicle	Registration address on the highway km	Clock, time	Week	Cargo vehicles					Road train	Light vehicles	Buses	Tractor	Motorcycles	Hourly	Coefficient	Average annual daily flow	Total
					3 tons	6 tons	10 tons	12 tons	14 tons									
1	A-376	5	8-9	Monday	31	20	14	16	19	15	1463	5	2	5	**1590**	13.30	1.07	**22,627**
2	A-376	20	9-10	Monday	29	18	18	14	15	13	1432	6	1	7	**1553**	13.30	1.07	**22,101**

Source: Provided by CR



Source: JICA Survey Team

Figure 8-7 Current Traffic Volume Data

8.1.5 RO-7: D089 "Fergana-Kuvasai- Border of the Kyrgyz Republic" (6-25km)

(1) Current Traffic Volume Data

This road segment connects the cities of Fergana and Kuvasoy and constitutes a core intercity route within the Fergana Valley. According to the traffic volume survey conducted in April 2025, 36,218 vehicles/day were recorded at the 10 km point, and 34,994 vehicles/day at the 15 km point, indicating an extremely high traffic density.

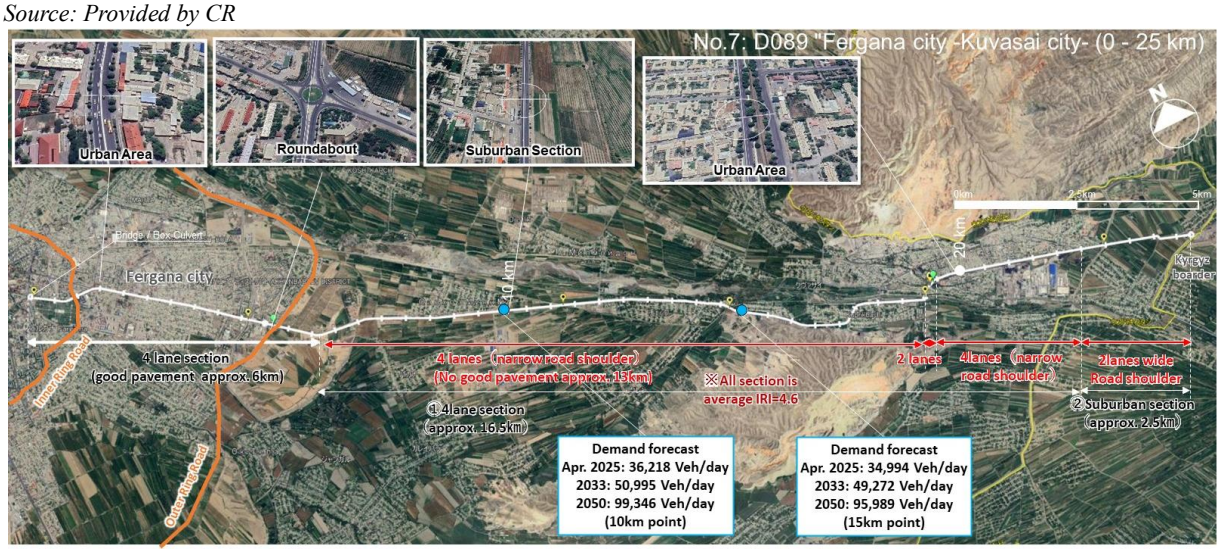
The current traffic volume on the subject section is approximately 35,413 vehicles/day, a very high level for a general road. The breakdown of traffic includes not only inter-city travel, but also cross-border traffic (human flow and logistics) between Uzbekistan and Kyrgyzstan, with active traffic of long-distance buses and import/export cargo trucks.

With four lanes of asphalt pavement in place on the Kyrgyz side and the homogenization of road standards between the two countries, traffic demand is expected to increase continuously in the future as two-way trade promotion and tourism exchange progress.

Table 8-7 D089 Traffic Count Survey Result (RO-7)

No.	Serial number of the vehicle	Registration address on the highway km	Clock, time	Week	Cargo vehicles					Road train	Light vehicles	Buses	Tractor	Motorcycles	Hourly	Coefficient	Average annual daily flow	Total
					3 tons	6 tons	10 tons	12 tons	14 tons									
1	D089	10	8-9	Monday	50	60	34	45	52	10	2231	4	21	38	**2545**	13.30	1.07	**36,218**
2	D089	15	9-10	Monday	45	54	29	39	50	8	2100	84	15	35	**2459**	13.30	1.07	**34,994**

Source: Provided by CR



Source: JICA Survey Team

Figure 8-8 Current Traffic Volume Data

8.1.6 RO-10: M39 "Takhtaqoracha Tunnel Construction Project"

(1) Current Traffic Volume Data

This road section is part of the M-39 highway that connects the cities of Kitab and Samarkand in the eastern part of the Kashkadarya Region. It functions as a major arterial road supporting both the movement of people and the flow of goods within the region. The alignment includes segments adjacent to mountainous terrain and is dotted with small towns and villages along its length.

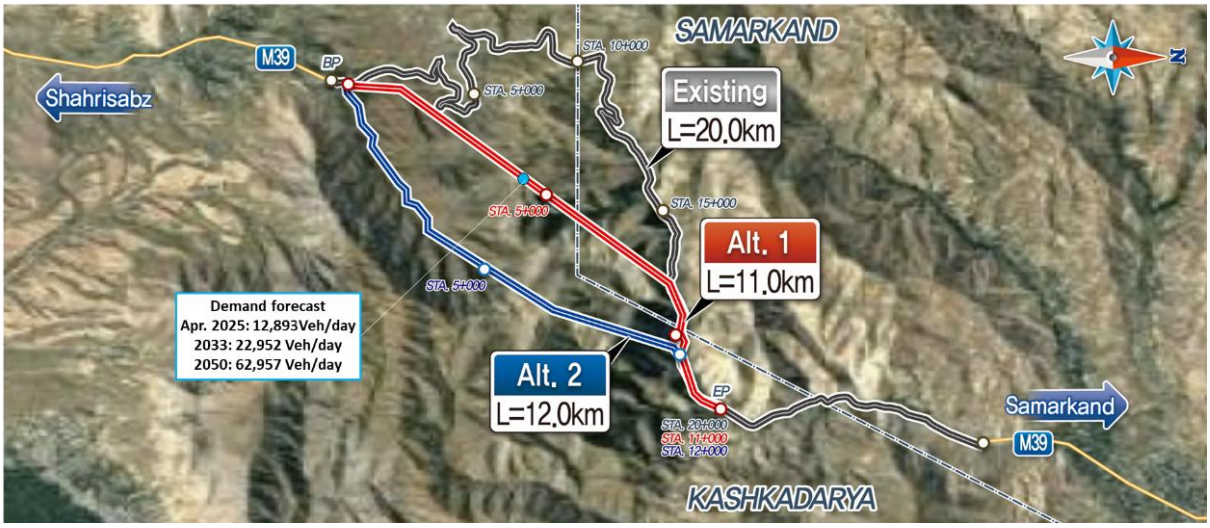
As of 2025, the estimated daily traffic volume is approximately 12,893 vehicles, indicating a moderate level of traffic demand among the five priority projects. The primary components of this traffic are presumed to be local movements such as commuting and school trips, along with short- to medium-distance freight transport involving agricultural products and daily necessities.

This traffic is mainly due to tourism and commuting to Samarkand and medium to long-distance logistics to the southern part of the country and the Caspian Sea.

Table 8-8 M39 Traffic Count Survey Result (RO-10)

No.	Serial number of the vehicle	Registration address on the highway km	Clock, time	Week	Cargo vehicles					Road train	Light vehicles	Buses	Tractor	Motorcycles	Hourly	Coefficient	Average annual daily flow	Total
					3 tons	6 tons	10 tons	12 tons	14 tons									
1	M39	1115	8-9	Thursday	5	3	9	3	5		846		19	16	**906**	13.30	1.07	**12,893**

Source: Provided by CR



Source: JICA Survey Team

Figure 8-9 Current Traffic Volume Data

8.1.7 RD-3: M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" (1,115-1,145 km)

(1) Current Traffic Volume Data

This road section is designated for improvement with the objective of disaster prevention in suburban areas. According to the traffic volume survey conducted in April 2025, a daily traffic volume of 12,893 vehicles was recorded at the 1,115 km point. Compared to other target routes, the traffic volume remains at a moderate level; however, a certain degree of stable demand is anticipated along this section.

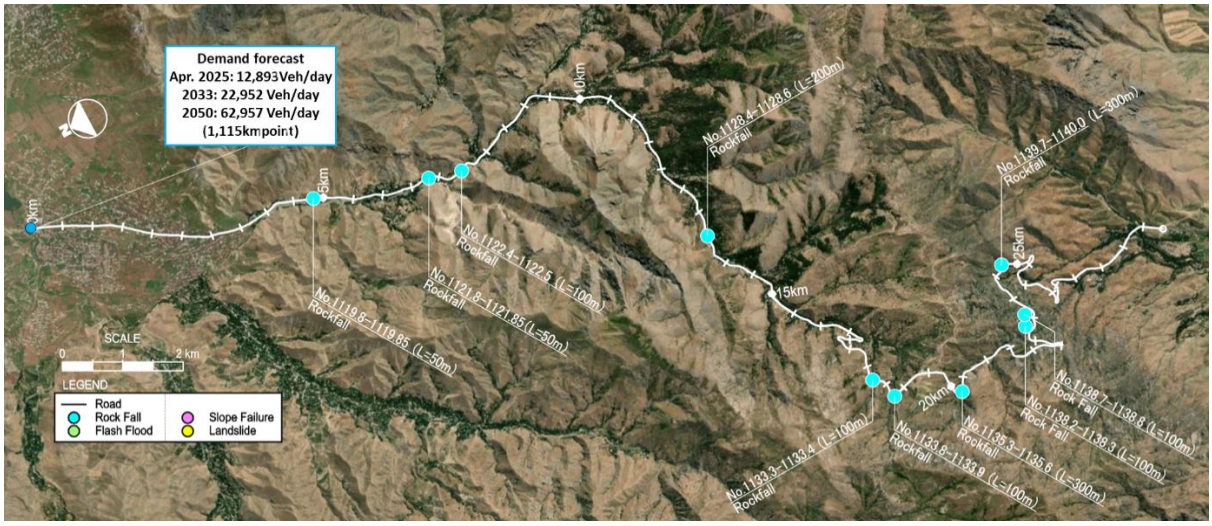
This traffic is mainly due to tourism and commuting to Samarkand and medium to long-distance logistics to the southern part of the country and the Caspian Sea region.

Future demand set based on growth rate by ADB. In light of the impact of road closures due to disasters and accidents, road closures due to rockfall disasters can result in lost transportation opportunities of several thousand vehicles per day and ongoing risks to passers-by. Therefore, there is a high need for both demand stability and risk avoidance in the future.

Table 8-9 M39 Traffic Count Survey Result (RD-3)

No.	Serial number of the vehicle	Registration address on the highway km	Clock, time	Week	Cargo vehicles					Road train	Light vehicles	Buses	Tractor	Motorcycles	Hourly	Coefficient	Average annual daily flow	Total
					3 tons	6 tons	10 tons	12 tons	14 tons									
1	M39	1115	8-9	Thursday	5	3	9	3	5		846		19	16	**906**	13.30	1.07	**12,893**

Source: Provided by CR



Source: JICA Survey Team

Figure 8-10 Current Traffic Volume Data（RD-3）

8.2 Overview of Priority Projects

8.2.1 RO-1: A373 "Tashkent-Osh" (309-354 km)

8.2.1.1 Project Details

RO-1 is an International Road (A373) connecting Tashkent-Andijan-Kyrgyzstan border. This road is a 4-6 lane road located in the Fergana Basin in eastern Uzbekistan. The overview of the project is shown following. (Overview of the project : Table 8-10, Project location : Figure 8-11, Road condition : Figure 8-12~Figure 8-15, Existing standard cross-section: Figure 8-16~Figure 8-19)

Table 8-10 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	20~27m	Based on site survey results
Number of lanes, Pavement type	4~6 lanes/Asphalt pavement	Based on site survey results
Number of Bridges/Culverts	16	Based on site survey results
Number of Major Intersections	10	Based on site survey results

Source: JICA Survey Team

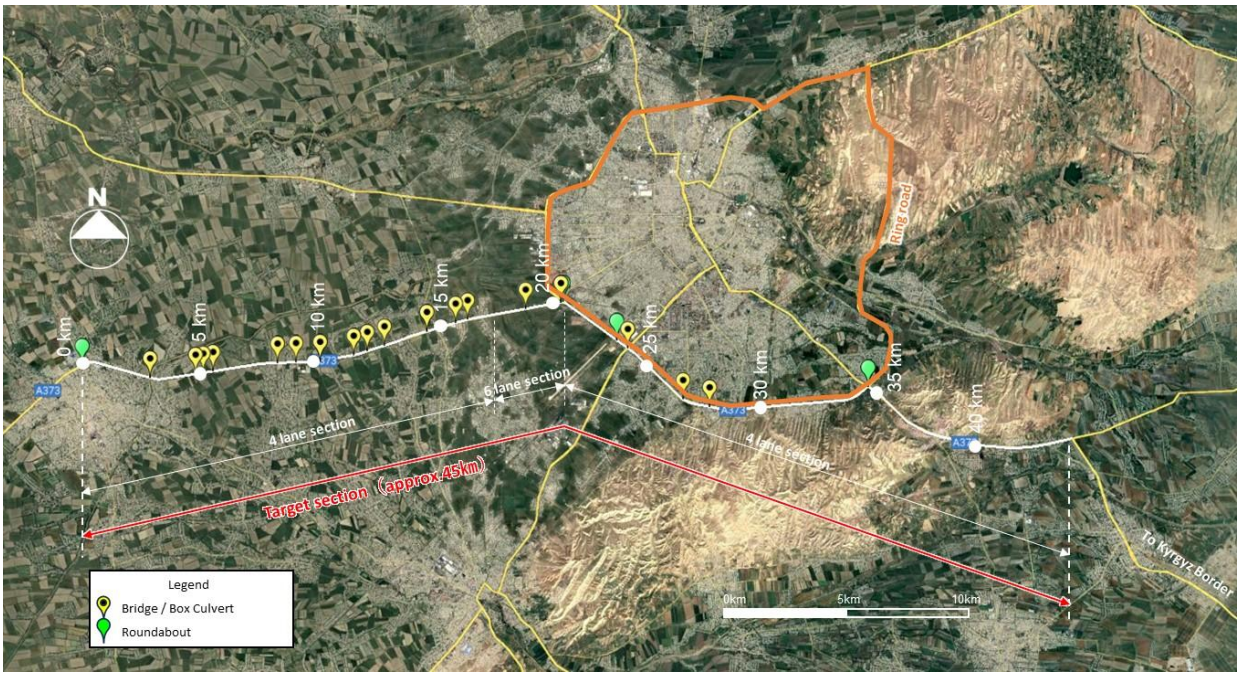


Figure 8-11 RO-1 Project Location Map



Figure 8-12 RO-1 (0km point)



Figure 8-13 RO-1 (13km point)



Figure 8-14 RO-1 (20km point)



Figure 8-15 RO-1 (22 km point)

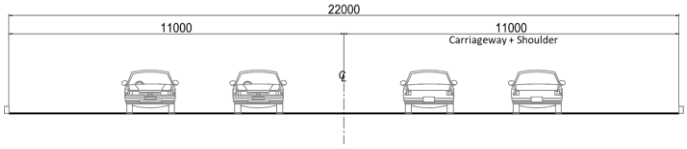


Figure 8-16 RO-1 Existing Road Cross Section (4-lane section without median strip: near the 0 km point)

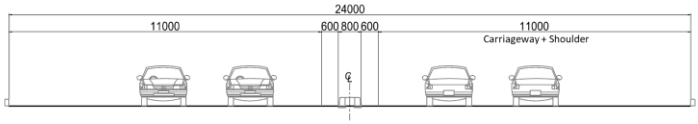


Figure 8-17 RO-1 Existing Road Cross Section (4-lane section with median strip: near the 13 km point)

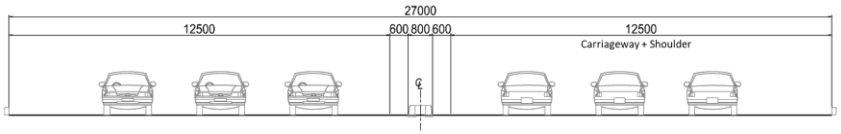


Figure 8-18 RO-1 Existing Road Cross Section (6-lane section: near the 20 km point)

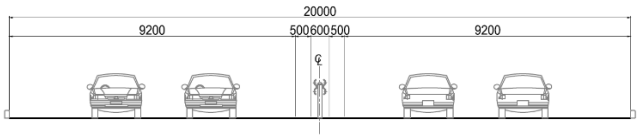


Figure 8-19 RO-1 Existing Road Cross Section (4-lane Ring Road section: near the 22 km Point)

The status and issues of the project section are as follows.

- Based on current traffic volume survey results, the large vehicle mix ratio in this section is approximately 5–9%, and it plays an important role in domestic and international logistics. Additionally, during interviews with the CR Regional Office, we were informed that the proportion of large vehicles has been increasing rapidly in recent years.
- The pavement condition of the project section has an overall IRI ranging from 3.8 to 5.2 (see Figure 8-20). Among these, some sections of the ring road have significant crack patterns and potholes, resulting in poor serviceability (see Figure 8-21).In addition, rutting is also observed around large intersections (see Figure 8-21).
- The CR Regional Office has been conducting pavement maintenance work (crack sealing, patching, etc.), but some sections are not adequately maintained, and the application of durable pavement (concrete pavement) would be effective.
- In some sections of the project area, central median strips are not installed, resulting in low driving safety. Furthermore, despite being a 4-lane to 6-lane road with heavy, large vehicle traffic, pedestrian crossing facilities such as uncontrolled crosswalks are scattered, as shown in Figure 8-21 Enhancement of traffic safety facilities (signal-controlled crosswalks, pedestrian overpasses, installation of central median strips, etc.) is necessary.

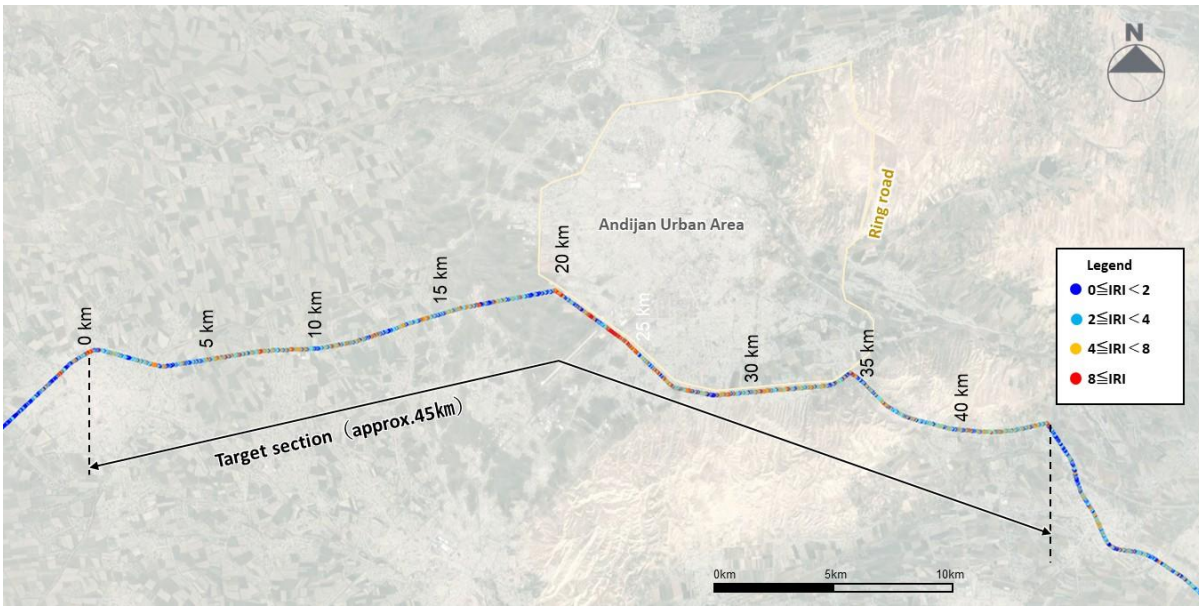


Figure 8-20 IRI Map (RO-1)



Pavement cracks and potholes



Rutting point



4-lane section (without median strip)



Crosswalk without traffic signal

Figure 8-21 Issues in the Project Section

Based on the above, the main components of this project are as follows.

- Rehabilitation of existing roads with concrete pavement (refer to Figure 8-22 to Figure 8-23 for future standard crossings)
- Enhancement of road safety facilities (installation of signal-controlled crosswalks with traffic signals, pedestrian bridges, median strip barriers, etc.)
- Renovation of existing bridges (as needed)

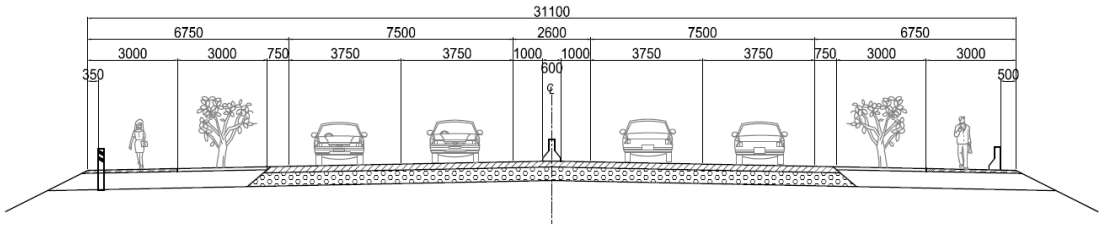


Figure 8-22 RO-1 Future Standard Cross Section (4-lane section)

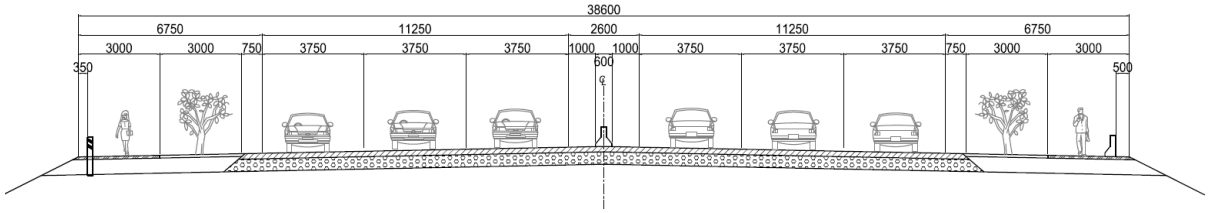


Figure 8-23 RO-1 Future Standard Cross Section (6-lane section)

Source: JICA Survey Team

8.2.1.2 Previous Survey

Regarding this project (the same 45 km section), a feasibility study including road widening to six lanes was conducted by Uzbekistan in 2020 under the initiative of CR. However, the project has not been implemented due to the large number of residential relocations required for land acquisition and the high project cost.

Additionally, since natural condition surveys were not conducted in the Feasibility Study, it will be necessary to conduct these surveys as part of the preparatory survey.

8.2.1.3 Estimated Project Costs

The project cost is approximately 240 million USD. The breakdown of the estimated project cost is shown in Table 8-11. Each item was calculated based on the following conditions.

1. Construction Costs: Please refer to 5.2.3.1 Cost Estimation Methodology for Road Projects
2. Consulting Services: Approximately 5% of Construction Costs
3. Land Acquisition & Compensation: Based on actual figures in Uzbekistan
4. Utility Resettlement: Based on the unit price (0.53 million USD) from the F/S conducted in 2020 (CR procurement, implemented in Uzbekistan) (including electricity, gas, telecommunications, and water supply).
5. Price Escalation：10% of the total of 1 to 4
6. Contingency：5% of the total of 1 to 5

Table 8-11 Breakdown of Project Costs (Million USD)

No.	Item	Cost
1	Construction Costs	173.6
2	Consulting Services	8.9
3	Land Acquisition & Compensation	0
4	Utility Resettlement	23.8
5	Price Escalation (10%)	20.6
6	Contingency (5%)	11.3
Total		238.2

Source: JICA Survey Team

8.2.2 RO-3: A-377 "Samarkand-Ayniy" (0-36 km)

8.2.2.1 Project Details

RO-3 is an International Road (A377) connecting Samarkand and the Tajikistan border. This road is a 2-4 4-lane road located in the southwestern part of the capital city of Tashkent. The overview of the project is shown following. (Overview of the project: Table 8-12, Project location: Figure 8-24, Road condition : Figure 8-27~Figure 8-29, Existing standard cross-section: Figure 8-30~Figure8-32)

Table 8-12 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	9~23m	Based on site survey results
Number of lanes, Pavement type	2~4 lanes/Asphalt pavement	Based on site survey results
Number of Bridges/ Culverts	11	Based on site survey results
Number of Major Intersections	3	Based on site survey results

Source: JICA Survey Team



Figure 8-24 RO-3 Project Location Map



Figure 8-25 Fly-over Planned Site



Figure 8-26 Fly-over Planned Site (Satellite photo)



Figure 8-27 RO-3 (0 km point: 4-lane section)



Figure 8-28 RO-3 (4 km point :4-lane section)



Figure 8-29 RO-3 (9 km point:2-lane section)

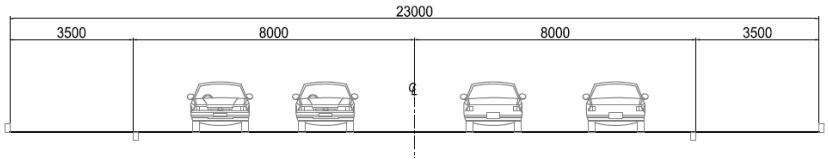


Figure 8-30 RO-3 Existing Road Cross Section (4-lane section without median strip near 0 km point)

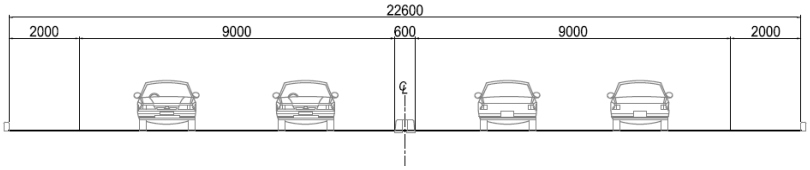


Figure 8-31 RO-3 Existing Road Cross Section (4-lane section with median strip near 4 km point ※East of the ring road)

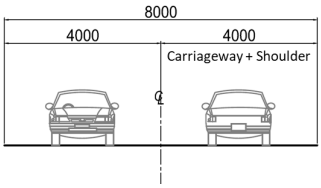


Figure8-32 RO-3 Existing Road Crossing Plan (2-lane section)

Source: JICA Survey Team

The status and issues of the project section are as follows.

- This section serves dual functions as a transportation route for the Samarkand urban area and an international passageway to Tajikistan, necessitating improvements in road service levels and logistics efficiency. However, the current average daily traffic volume is 22,674 vehicles per day, with a VCR of 1.04 for the existing two-lane section (9 km to 36 km), making expansion to four lanes highly necessary.
- Regarding the pavement condition of the project section, the overall IRI ranges from 3.8 to 5.6 (see Figure 8-33). The average IRI for the entire section is 5.2, which is poor, and particularly in the suburban section (two-lane section), the IRI reaches 5.6, indicating significant pavement deterioration (see Figure 8-34).
- The CR Regional Office has been conducting pavement maintenance work (crack sealing, patching, etc.), but some sections are not adequately maintained, and the application of durable pavement (concrete pavement) is considered effective.
- Part of the project section is operated as a four-lane road with a central median, but the suburban sections are two-lane roads. Since the suburban sections include multiple urban areas, the expansion to four lanes will require the enhancement of traffic safety facilities (signal-controlled crosswalks, pedestrian overpasses, installation of central medians, etc.).

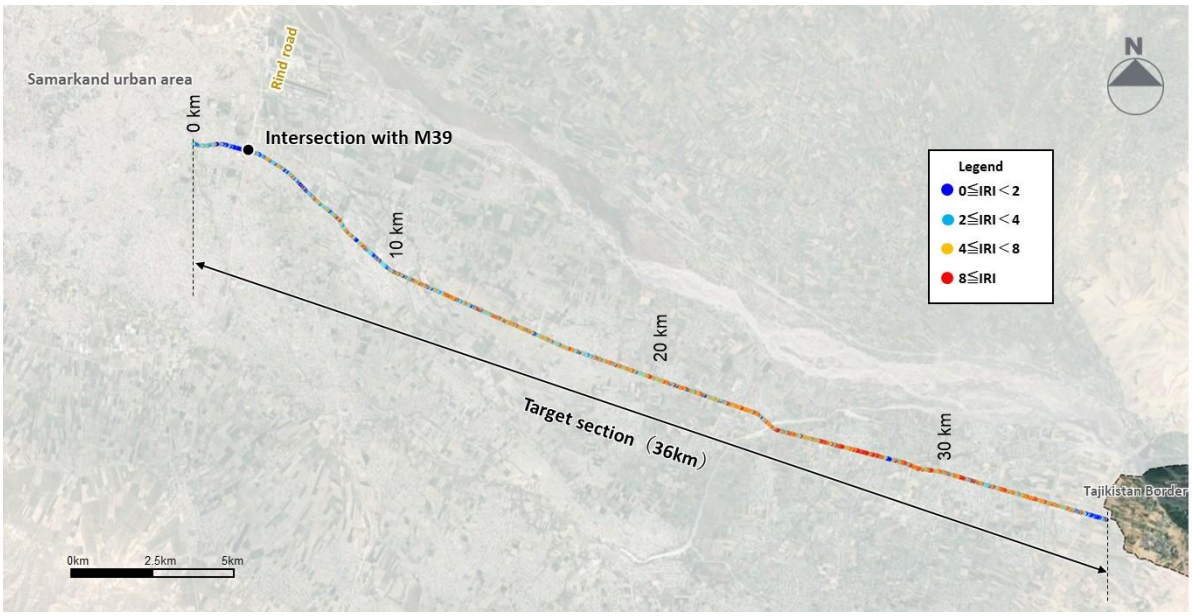


Figure 8-33 IRI Map (RO-3)



Pavement cracks and potholes　　Large intersection between M39 and A373

Figure 8-34 Issues in the Project Section

Based on the above, the main components of this project are as follows.

- Rehabilitation of existing roads (4-lane section) with concrete pavement and widening and rehabilitation of existing roads (2-lane section) (refer to Figure 8-35 for future standard crossings)
- Reinforcement of road safety facilities (installation of signal-controlled crosswalks, pedestrian bridges, median barriers, etc.)
- Expansion of existing bridges (2-lane section)
- Improvement of major intersections

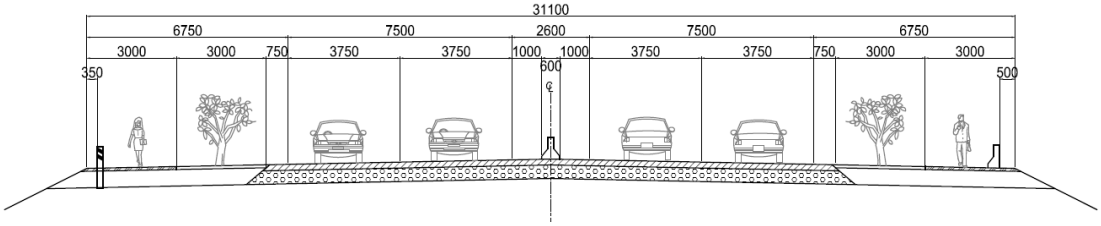
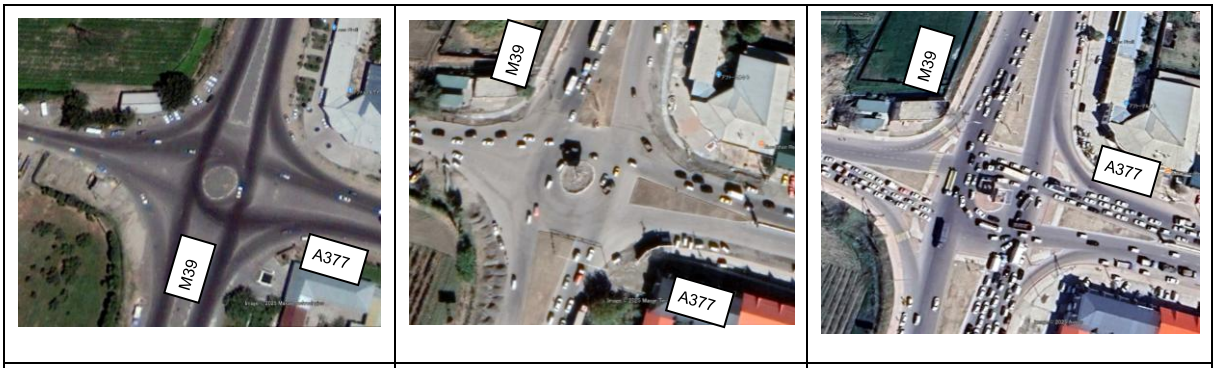


Figure 8-35 RO-3 Future Standard Cross Section

Source: JICA Survey Team

In addition to the above road improvements, the CR side has proposed a plan to construct an interchange at the intersection of A377 and the international trunk road (M39: 6 lanes). As shown in Figure 8-36, this intersection formerly functioned as a roundabout but is currently operated as a signal-controlled four-way intersection. Upon reviewing past satellite images, it is evident that the intersection's shape has changed over time, with improvements such as the addition of traffic signals being implemented in stages. These measures are likely intended to address increasing traffic volumes.



2010	2022	2025

Source: Google Earth

Figure 8-36 Intersection Modifications between A377 and M39

According to a traffic survey conducted in March 2025, the 24-hour traffic volume near the intersection was approximately 55,000 vehicles per day on the main road, M39, and approximately 27,000 vehicles per day on the secondary road, A377.

Assuming a peak rate of approximately 10% and right/left turn rates of 5% each, the intersection demand rate was calculated to be approximately 1.0, indicating a high likelihood of congestion during peak hours. Furthermore, considering the ongoing development along A377 and the expected increase in traffic volume within Samarkand City, it is anticipated that chronic traffic congestion may occur within the next few years. On the other hand, in terms of traffic safety, only one accident was recorded in 2024, and no significant hazards have been identified. However, based on the local traffic conditions, it cannot be ruled out that minor accidents that are not recorded may occur frequently. Therefore, in the detailed design phase, it is essential to establish the plan of the flyover that adequately considers the safety of pedestrians and vehicles based on directional traffic volume surveys and traffic demand forecasts.

8.2.2.2 Estimated Project Cost

The project cost is approximately 142 million USD. The breakdown of the estimated project cost is shown in Table 8-13. Each item was calculated based on the following conditions.

1. Construction Costs： Please refer to 5.2.3.1 Cost Estimation Methodology for Road Projects
2. Consulting Services： Approximately 5% of Construction Costs
3. Land Acquisition & Compensation： Based on actual figures in Uzbekistan
4. Utility Resettlement： Based on the unit price (0.53 million USD) from the F/S conducted in 2020 (CR procurement, implemented in Uzbekistan) (including electricity, gas, telecommunications, and water supply).
5. Price Escalation：10% of the total of 1 to 4
6. Contingency：5% of the total of 1 to 5

Table 8-13 Breakdown of Project Costs (Million USD)

No.	Item	Cost
1	Construction Costs	95.9
2	Consulting Services	4.9
3	Land Acquisition & Compensation	2.8
4	Utility Resettlement	19.0
5	Price Escalation (10%)	12.0
6	Contingency (5%)	6.7
Total		141.7

Source: JICA Survey Team

8.2.3 RO-6: A376 "Ko'kon-Jizzakh" (14-45 km)

8.2.3.1 Project Details

RO-6 is an International Road (A376) connecting Kokand-Tajikistan border. This road is a 2-4 lane road located in the Fergana Basin in eastern Uzbekistan. The overview of the project is shown following. (Overview of the project: Table 8-14, Project location : Figure 8-37, Road condition: Figure 8-38~Figure 8-39, Existing standard cross-section: Figure8-40~Figure8-41)

Table 8-14 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	10.6~11.6m	Based on site survey results
Number of lanes, Pavement type	2 lanes/Asphalt pavement	Based on site survey results
Number of Bridges / Culverts	7	Based on site survey results
Number of Major Intersections	4	Based on site survey results

Source: JICA Survey Team

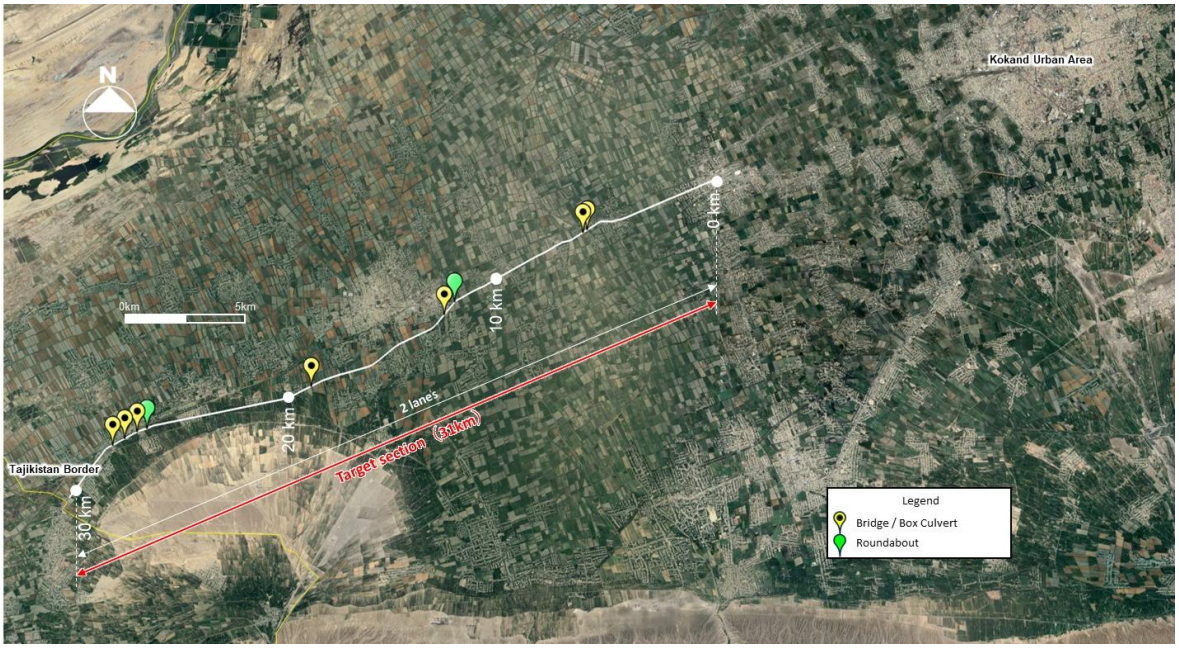


Figure 8-37 RO-6 Project Location Map



Figure 8-38 RO-6 (0 km point)



Figure 8-39 RO-6 (20 km point)

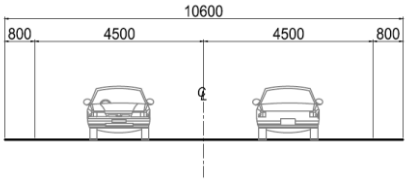


Figure8-40 RO-6 Existing Road Cross Section (0 km Point)

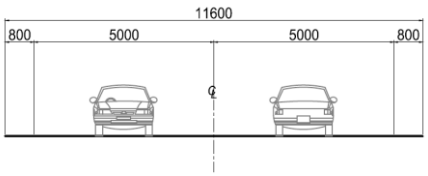


Figure8-41 RO-6 Existing Road Cross Section (20 km point)

Source: JICA Survey Team

The status and issues of the project section are as follows.

- The project section primarily handles cross-border traffic and commercial traffic along the route. The current cross-sectional traffic volume is 22,101 vehicles per day, and the VCR for the existing two-lane section (km 14 to km 45) is 0.87, indicating a high necessity for future expansion to four lanes.
- Regarding the pavement condition of the project section, the overall IRI is approximately 3.9 (see Figure 8-42). Additionally, there are sections with significant pavement deterioration (see Figure 8-43).
- Maintenance work (crack sealing, patching, etc.) is being carried out by the CR Regional Office, but some sections are not adequately maintained, making the application of durable pavement (concrete pavement) effective.
- Given the presence of multiple urban sections (see Figure 8-43), the implementation of a four-lane widening project will require the enhancement of traffic safety facilities (such as signal-controlled crosswalks, pedestrian overpasses, and central median barriers).

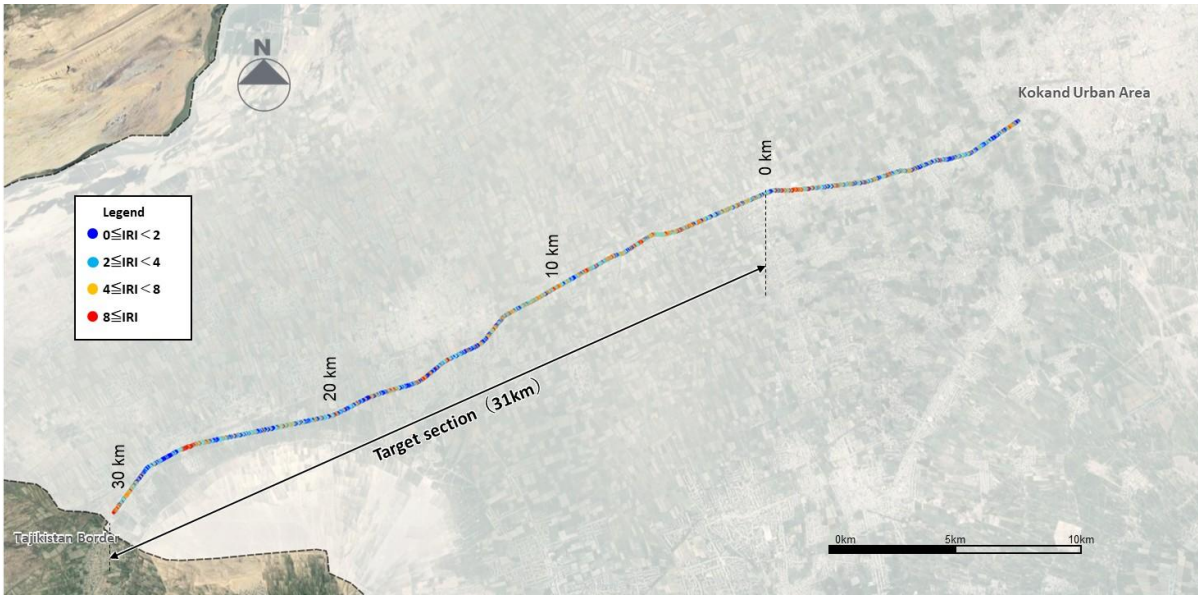


Figure 8-42 IRI Map (RO-6)





Pavement cracks and potholes　　Urban area

Figure 8-43 Project Section Issues

Based on the above, the main components of this project are as follows.

- Road widening and rehabilitation of existing roads (two-lane sections) using concrete pavement (refer to Figure 8-44 for future standard crossings)
- Strengthening of road safety facilities (installation of signal-controlled crosswalks, pedestrian bridges, median barriers, etc.)
- Expansion of existing bridges (two-lane sections)

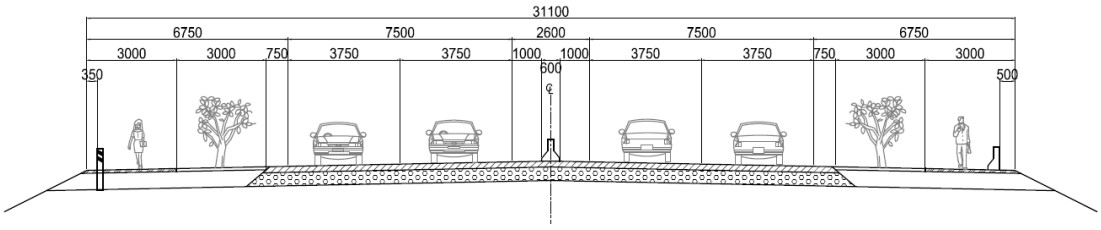


Figure 8-44 RO-6 Future Standard Cross Section

Source: JICA Survey Team

8.2.3.2 Estimated Project Cost

The project cost is approximately 120 million USD. The breakdown of the estimated project cost is shown in Table 8-15. Each item was calculated based on the following conditions.

1. Construction Costs: Please refer to 5.2.3.1 Cost Estimation Methodology for Road Projects
2. Consulting Services: Approximately 5% of Construction Costs
3. Land Acquisition & Compensation: Based on actual figures in Uzbekistan
4. Utility Resettlement: Based on the unit price (0.53 million USD) from the F/S conducted in 2020 (CR procurement, implemented in Uzbekistan) (including electricity, gas, telecommunications, and water supply).
5. Price Escalation：10% of the total of 1 to 4
6. Contingency：5% of the total of 1 to 5

Table 8-15 Breakdown of Project Costs (Million USD）

No.	Item	Cost
1	Construction Costs	81.7
2	Consulting Services	4.2
3	Land Acquisition & Compensation	2.4
4	Utility Resettlement	16.4
5	Price Escalation(10%)	10.2
6	Contingency (5%)	5.6
Total		120.8

Source: JICA Survey Team

8.2.4 RO-7: D089 "Fergana-Kuvasai- Border of the Kyrgyz Republic" (6-25km)

8.2.4.1 Project Details

RO-7 is an International Road (D089) connecting the Fergana-Kyrgyz border. This road is a 2-4 lane road located in the Fergana Basin in eastern Uzbekistan. The overview of the project is shown following. (Overview of the project: Table 8-16, Project location: Figure 8-45, Road condition: Figure 8-46~Figure 8-48, Existing standard cross-section: Figure8-49~Figure 8-51)

Table 8-16 Overview of the Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	10~18m	Based on site survey results
Number of lanes, Pavement type	2~4 lanes/Asphalt pavement	Based on site survey results
Number of Bridges/ Culverts	5	Based on site survey results
Number of Major Intersections	4	Based on site survey results

Source: JICA Survey Team

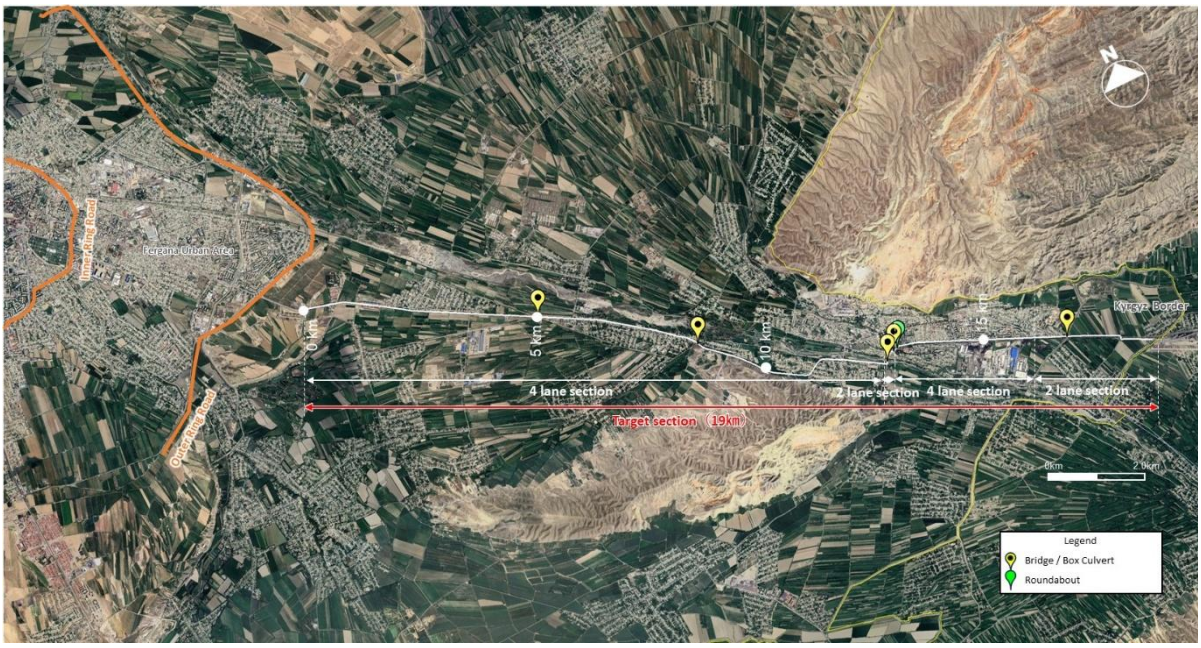


Figure 8-45 RO-7 Project Location Map



Figure 8-46 RO-7 (5 km point:4-lane section)



Figure 8-47 RO-7 (13km point:2-lane section)



Figure 8-48 RO-7 (17 km: 2-lane section)

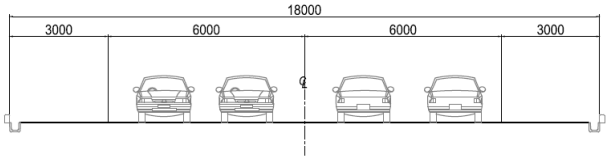


Figure8-49 RO-7 Existing Road Cross Section (5 km point)

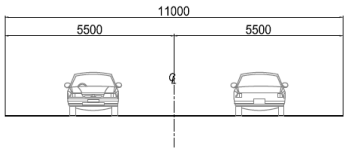


Figure 8-50 RO-7 Existing Road Cross Section (13 km point)

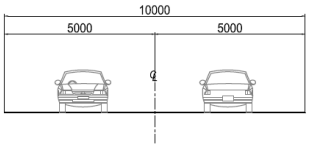


Figure 8-51 RO-7 Existing Road Cross Section (17 km point)

Source: JICA Survey Team

The status and issues of this project section are as follows.

- This route serves as a logistics corridor connecting the border with urban areas (average daily traffic volume: 34,994 to 36,218 vehicles), and traffic is expected to increase further as trade with Kyrgyzstan continues to expand. Most of the project section is currently operated as a four-lane road; however, the shoulder width is narrow, and there is no central median, posing safety concerns.
- Additionally, some sections (including bridge sections) are operated as two-lane roads, creating traffic bottlenecks. Therefore, there is a high priority for widening these sections to four lanes (Figure 8-53).
- Regarding the pavement condition of the project section, the overall IRI is approximately 3.9 (see Figure 8-52). There are areas where surface-wide turtle cracks have developed (see Figure 8-53).
- Maintenance work on the pavement (crack sealing, patching, etc.) is being carried out by the CR Regional Office; however, the pavement is not being adequately maintained, and the application of durable pavement (concrete pavement) would be effective.
- Given the presence of multiple urban sections, the implementation of a four-lane expansion will require the enhancement of traffic safety facilities (signal-controlled crosswalks, pedestrian overpasses, installation of central median barriers, etc.).

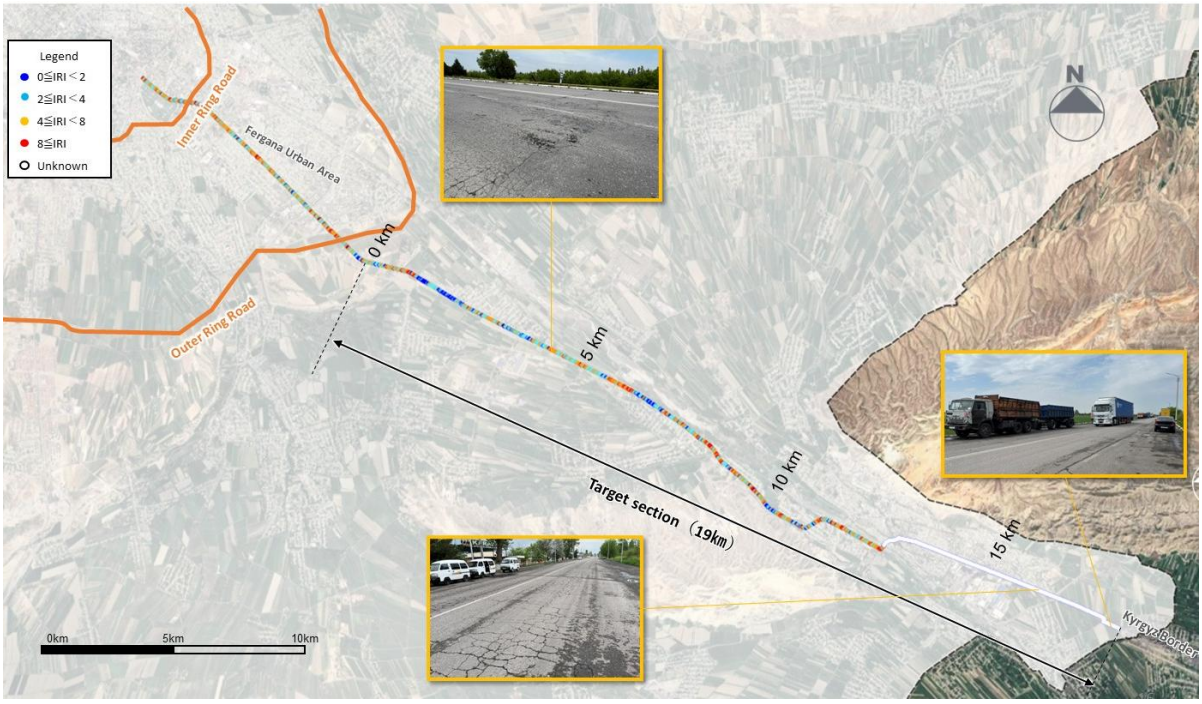


Figure 8-52 IRI Map（RO-7）



2 lanes section（Existing bridge section）



Pavement crack

Figure 8-53 Issues in the Project Section

Based on the above, the main components of this project are as follows.

- Rehabilitation of existing roads (4-lane section) using concrete pavement and widening and rehabilitation of existing roads (2-lane section) (refer to Figure 8-54 for future standard crossings)
- Enhancement of road safety facilities (installation of signal-controlled crosswalks, pedestrian bridges, median barriers, etc.)
- Expansion of existing bridges (2-lane section)

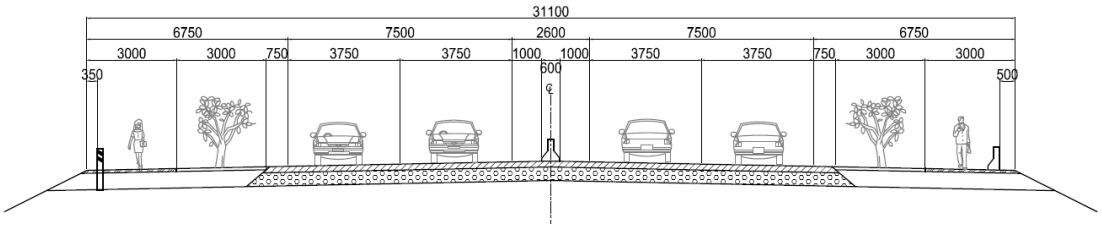


Figure 8-54 RO-7 Future Standard Cross-Section

Source: JICA Survey Team

8.2.4.2 Estimated Project Cost

The project cost is approximately 80 million USD. The breakdown of the estimated project cost is shown in Table 8-17. Each item was calculated based on the following conditions.

1. Construction Costs: Please refer to 5.2.3.1 Cost Estimation Methodology for Road Projects
2. Consulting Services: Approximately 5% of Construction Costs
3. Land Acquisition & Compensation: Based on actual figures in Uzbekistan
4. Utility Resettlement: Based on the unit price (0.53 million USD) from the F/S conducted in 2020 (CR procurement, implemented in Uzbekistan) (including electricity, gas, telecommunications, and water supply).
5. Price Escalation: 10% of the total of 1 to 4
6. Contingency: 5% of the total of 1 to 5

Table 8-17 Breakdown of Project Costs (Million USD）

No.	Item	Cost
1	Construction Costs	53.6
2	Consulting Services	2.7
3	Land Acquisition & Compensation	0.8
4	Utility Resettlement	10.0
5	Price Escalation (10%)	6.7
6	Contingency (5%)	3.7
Total		77.5

Source: JICA Survey Team

8.2.5 RO-10: M39 "Takhtaqoracha Tunnel Construction Project"

8.2.5.1 Project Details

RO-10 is the construction of a new bypass mountain tunnel on the international highway (M39) connecting Yanakishlak, south of Samarkand, to Kishylk. The overview of the project is shown following. (Overview of the project: Table 8-18, Project location: Figure 8-55, Existing standard cross-section: Figure 8-56)

Table 8-18 Overview of The Project

Items	Contents	Remarks
Road class	1B	ShNK2.05.02-07
Road width	9m	Based on site survey results
Number of lanes, Pavement type	2~4 lanes/Asphalt pavement	Based on site survey results

Source: JICA Survey Team

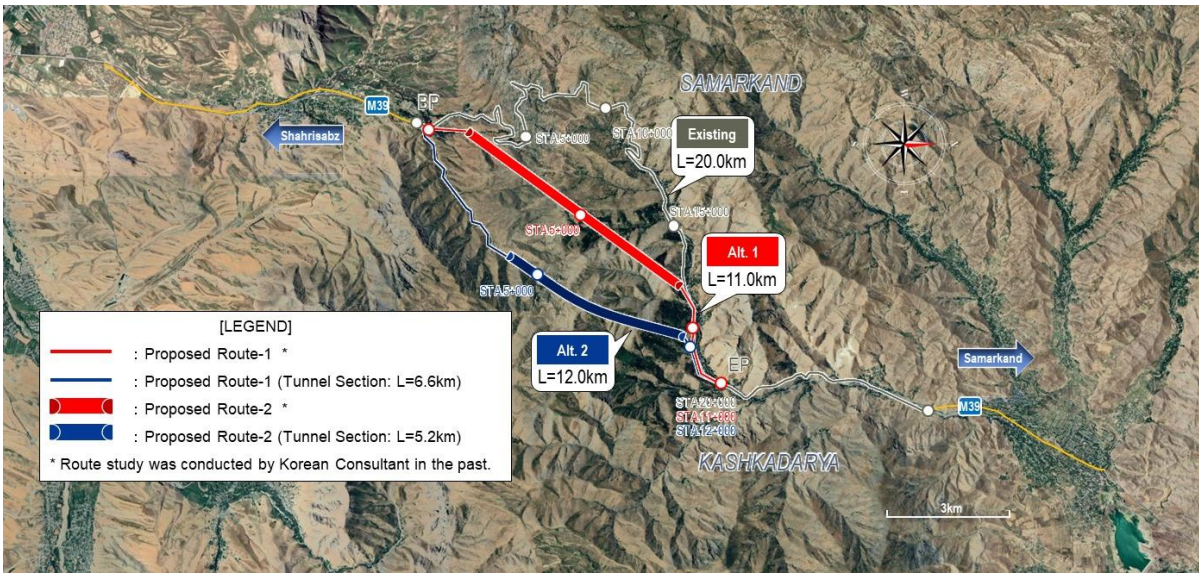


Figure 8-55 RO-10 Project Location Map

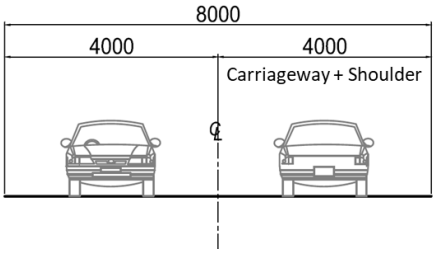
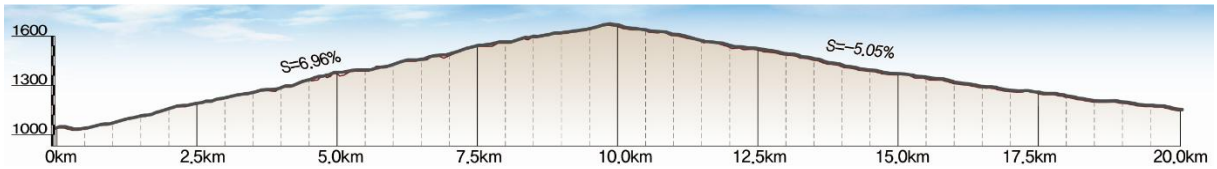


Figure 8-56 Standard Cross-section of Mountain Pass Road (M39) (two-lane section)

The status and issues of the project section are as follows.

- The project section is a two-lane road passing through a mountainous area (Takhtaqoracha Pass), with a steep road gradient of approximately 5–7% in the pass section (see Figure 8-57). There are also several sections with consecutive sharp curves.
- The slopes in the pass section also have areas prone to rockfalls, with rockfalls occurring annually.
- The area experiences snowfall, and due to the challenging road alignment, the passage of vehicles exceeding 12 tons, including cargo trucks, large trucks, trailers, buses, and microbuses, is restricted. A bypass plan for fundamental road alignment improvements is considered effective.
- Part of the project area is designated as a national natural park (established in 2022)



Source: Prepared by JICA Survey Team based on previous survey

Figure 8-57 Existing Road Profile (Mountain Pass Section)



Steep curve section of the mountain pass（M39）

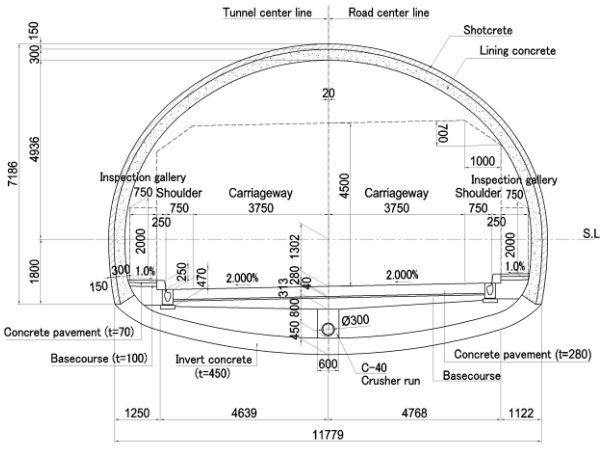


Rockfall hazard areas in mountain pass sections（M39）

Figure 8-58 Issues in The Project Section（RO-10）

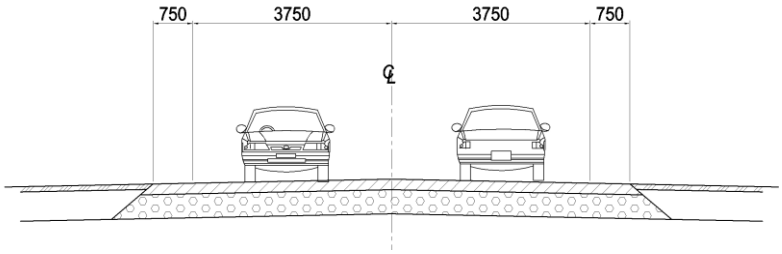
Based on the above, the main components of this project are as follows.

- Construction of a mountain tunnel (L=approx. 5‐7 km)
- Installation of emergency facilities for the mountain tunnel
- Construction of a new bypass road (L=approx. 5‐7 km)



Source: Prepared by the JICA Survey Team based on previous survey materials

Figure 8-59 Standard Cross Section (Tunnel Section)



Source: Prepared by JICA Survey Team based on previous survey materials

Figure 8-60 Standard Cross Section (Road Section)

8.2.5.2 Previous Surveys

Regarding this project, a preliminary route study was conducted by a Korean consultant in 2024, and two tunnel route proposals are currently planned (refer to Figure 8-55). However, this was only a desk-based route study, and no field surveys, such as topographic surveys, geological surveys, or traffic volume surveys, have been conducted. Moving forward, various field surveys, including natural condition surveys and traffic volume surveys, as well as a review of the existing route proposals based on these findings, will be necessary as part of the preparatory survey.

8.2.5.3 Estimated Project Cost

The project cost is approximately 323 million USD. The breakdown of the estimated project cost is shown in Table 8-19. Each item was calculated based on the following conditions.

1. Construction Costs: Based on previous survey results (Korean consultant: 2024)
2. Consulting Services: Approximately 5% of Construction Costs
3. Land Acquisition & Compensation: Based on actual figures in Uzbekistan
4. Utility Resettlement: This project is a new bypass project, and relocation of existing utilities (water, gas, communication lines, power lines, etc.) will be limited. However, a permanent power supply will be required for road and tunnel lighting and emergency equipment in tunnels. The cost of this will be included in the construction cost.
5. Price Escalation：10% of the total of 1 to 4
6. Contingency：5% of the total of 1 to 5

Table 8-19 Breakdown of Project Costs (Million USD)

No.	Item	Cost
1	Construction Costs	262.0
2	Consulting Services	17.0
3	Land Acquisition & Compensation	0.2
4	Utility Resettlement	0.0
5	Price Escalation (10%)	27.9
6	Contingency (5%)	15.4
Total		322.4

Source: JICA Survey Team

8.2.6 RD-3: M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" (1,115-1,145 km)

8.2.6.1 Project Details

It is an international road, M39 (two-lane road) that connects Yanakishlak, located south of Samarkand, to Kishylk and passes through a mountainous area (Takhtaqoracha Pass) with many hazardous slopes of rockfall where rockfalls have occurred every year. The traffic volume is 11,789 vehicles per day, and there is a large flow of people, including tourists, intercity commuters, and commuters to Samarkand. It is part of an international logistics route on M39 and plays a major function in the transportation of supplies, agricultural products, etc.

The road is generally composed of 2 lanes, and the pavement condition is favorable. A considerable number of residential houses are located along the roadside, and from the perspectives of traffic safety and disaster prevention, the necessity of road improvement is high. In particular, it is essential to ensure the structural integrity of bridges and box culverts, as well as to secure evacuation routes for local residents.

There are 7 hazardous slopes of rockfall with unstable boulders at a height of about 10 to 20m along the existing road. The rock net method (pocket type or covered type) is planned as a countermeasure.

The location map of the proposed project, slope hazard areas, and countermeasures are shown in Figure 8-61 and Table 8-20.

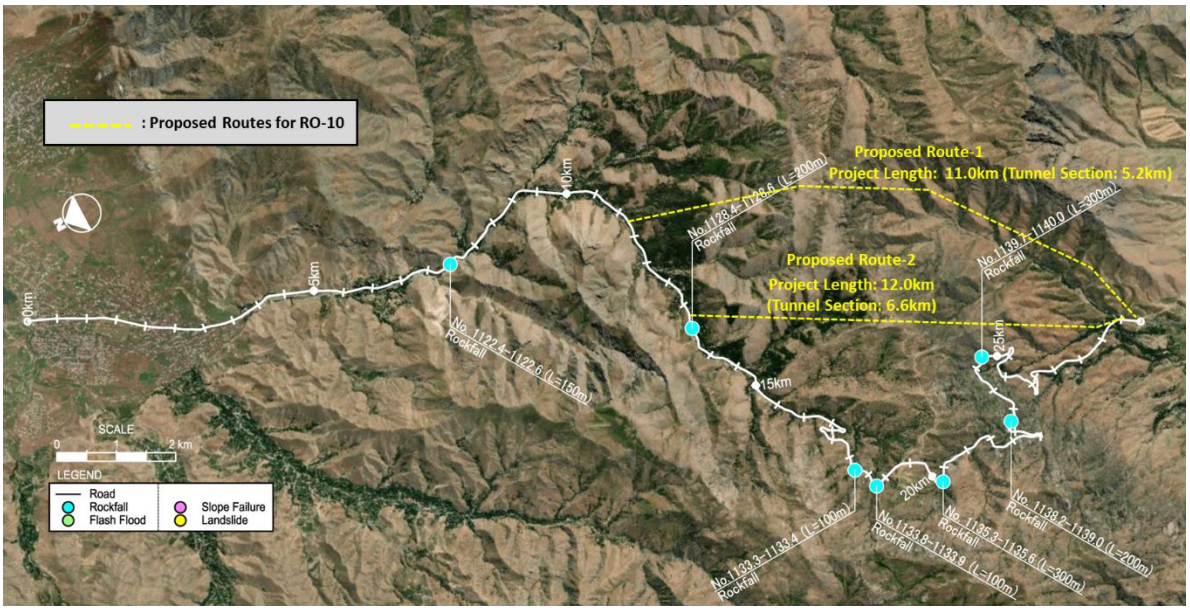
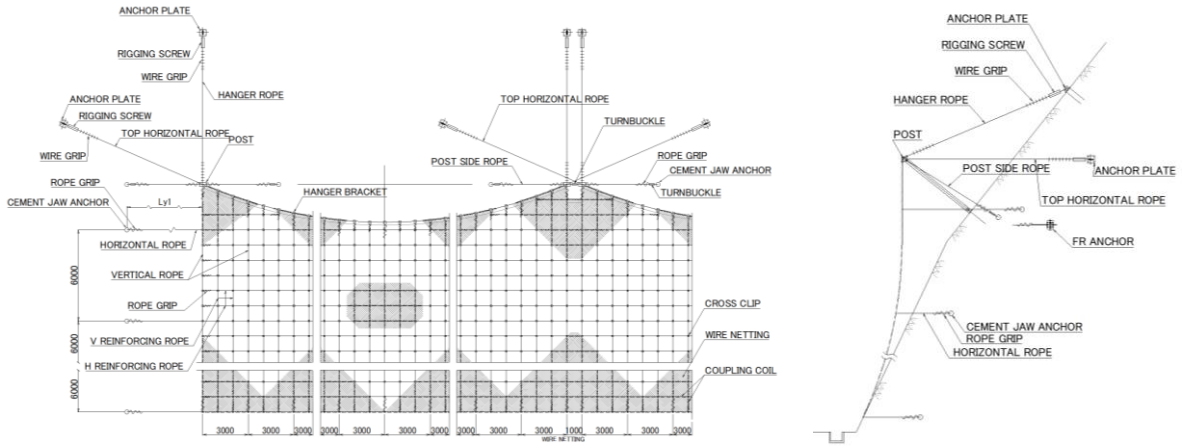


Figure 8-61 RD-3 Project Location Map

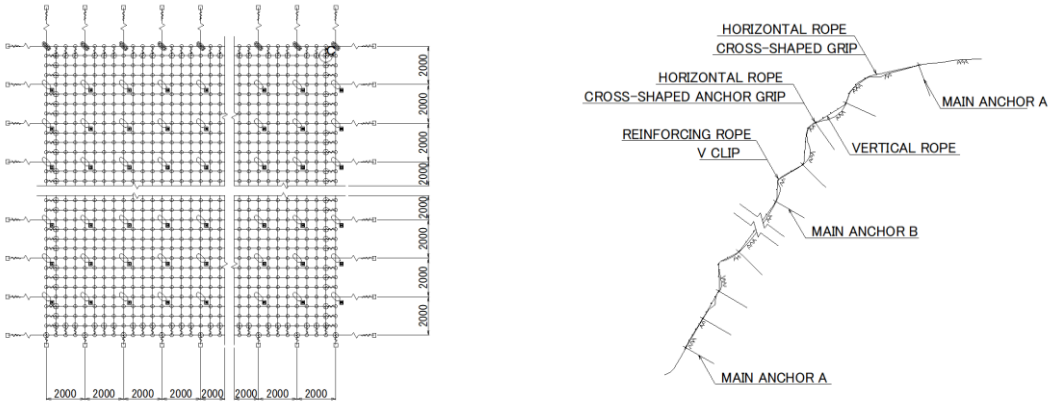
Table 8-20 Hazardous Slope Areas and Countermeasures (RD-3)

Hazardous Areas	Countermeasure Scope		Countermeasure Works
	L (m)	B or H (m)	
1122.4–1122.6 km	15	20	Rockfall net (pocket type)
1128.4–1128.6 km	200	12	Rockfall net (cover type)
1133.3–1133.4 km	100	20	Rockfall net (covered type)
1133.8-1138.9 km	100	20	Rockfall net (covered type/pocket type)
1135.3–1135.6 km	300	20	Rockfall net (pocket type)
1138.2–1138.4 km	20	20	Rockfall net (pocket type)
1139.7–1140.0 km	300	2	Rockfall net (pocket type)



Side View Front View

Figure 8-62 Rockfall Net (Pocket Type) Standard Drawing



Side view Front view

Figure 8-63 Rockfall Net (Covered Type) Standard Drawing

8.2.6.2 Estimated Project Cost

The project cost is approximately 12 million USD. The breakdown of the estimated project cost is shown in Table 8-21. Each item was calculated based on the following conditions.

1. Construction Costs: Based on candidate countermeasures identified through on-site surveys, estimates are calculated.
2. Consulting Services: Approximately 5% of Construction Costs
3. Land Acquisition & Compensation: Based on actual figures in Uzbekistan
4. Utility Resettlement: Based on the unit price (0.53 million USD) from the F/S conducted in 2020 (CR procurement, implemented in Uzbekistan) (including electricity, gas, telecommunications, and water supply).
5. Price Escalation: 10% of the total of 1 to 4
6. Contingency: 5% of the total of 1 to 5

Table 8-21 Breakdown of Project Costs (Million USD)

No.	Item	Cost
1	Construction Costs	10
2	Consulting Services	0.5
3	Land Acquisition & Compensation	0
4	Utility Resettlement	0
5	Price Escalation (10%)	1.1
6	Contingency (5%)	0.6
Total		12.1

Source: JICA Survey Team

8.3 Analysis of Project Effects

8.3.1 RO-1: A373 "Tashkent-Osh" (309-354 km)

8.3.1.1 Beneficiaries of the Project

The direct beneficiaries are local residents and commuters who pass through the targeted section daily, as well as truck drivers and logistics operators transporting fruit, textiles, and cotton. In particular, vehicles traveling from the Fergana area to Tashkent and Kyrgyzstan will directly benefit from the improved roads in terms of reduced travel time and vehicle wear and tear. There are also immediate benefits for industrial estates and agricultural areas along the road in terms of smoother removal and distribution of production. On the other hand, the ultimate beneficiaries are the producer class, such as farmers and manufacturers of industrial products in the Fergana Basin, as well as domestic and foreign consumers and traders who receive their products, and the citizens of both countries who benefit from economic growth due to facilitated trade between Uzbekistan and Kyrgyzstan. The development of trunk roads incorporated into international corridors (CAREC and TRACECA) will also contribute to logistics efficiency and the revitalization of the wider economy in Central Asia as a whole by increasing transport efficiency and economic linkages throughout the region.

The population that is covered within 3 km of the central line of the targeted route is estimated as 208,629.

8.3.1.2 Quantitative and Qualitative Effects

(1) Qualitative Effects

1) Main Transport Indicator

RO-1 is located on the A373 international road connecting Tashkent, the capital of Uzbekistan, with the Kyrgyz border. In the 45 km long section to be rehabilitated, the average speed was 60 km/h and the travel time was about 45 minutes due to existing pavement deterioration and congestion.

The project is expected to improve the average speed to 70 km/h and shorten the travel time to 39 minutes through the rehabilitation of the pavement.

Traffic volume is already very high at 35,822 vehicles per day, and the capacity and functional enhancement of the road is essential in view of the future expansion of international logistics and an increase in intercity travel. In particular, since this route is part of the CAREC and TRACECA international corridors and is a strategically important trunk line, it will have a wide ripple effect on the national economy and intra-regional cooperation.

Table 8-22 Quantitative Effects

Indicator	Before Improvement (Current)	After Improvement (Post-Project)	Remarks
Average Speed	60 km/h	70 km/h	Speed improvement due to pavement rehabilitation
Distance	45 km	45 km	Length of the target section
Travel Time	45 minutes	39 minutes	Approx. 6-minute (13%) reduction in travel time
Traffic Volume	35,822 vehicles/day	Same	International logistics, commuting, intercity travel, and cross-border traffic

Source: JICA Survey Team

2) Economic Analysis

Table 8-23 shows the results of the economic evaluation of the project, which quantitatively verifies whether the benefits brought by the maintenance are commensurate with the investment.

The economic internal rate of return (EIRR) is 15%, which is much higher than the evaluation standard of 12% adopted by international organizations, indicating a high return on investment. The cost-benefit ratio (B/C ratio) is 1.79, well above 1.0, indicating that the benefits obtained are high in relation to the costs incurred. Furthermore, the Net Present Value (NPV) of the project was also significantly positive at approximately 53.3 billion yen, which confirms that the project will generate economic value over the long term.

These indicators confirm that the project is a public investment with high economic efficiency and cost-effectiveness, and thus have sufficient validity in investment decisions.

Table 8-23 Economic Indicators (EIRR, NPV, B/C)

Indicator	Estimated Value	Remarks
EIRR (Economic Internal Rate of Return)	15%	Significantly exceeds the threshold (12%)
B/C Ratio	1.79	High cost-effectiveness
NPV (Net Present Value)	53.3 billion JPY	Large positive economic benefit
Initial Investment Cost	34.6 billion JPY	Asphalt pavement is assumed
Annual O&M Cost	0 JPY/year	O&M cost is zero because of the concrete pavement
Main Benefit Item	Time and operation cost saving	Contributing to the efficiency of cross-border traffic and economic activities along the route

Source: JICA Survey Team

Table 8-24 Economic Analysis Result

Project	289-379 km of the A373 "Tashkent-Osh" highway
B/C	1.79
NPV (JPY)	53,301,133,955
EIRR	15%
Social Discount Rate	9%

(Unit: JPY)

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2025			0	150,000,000	-150,000,000
2026			0	150,000,000	-150,000,000
2027			0	11,433,333,333	-11,433,333,333
2028			0	11,433,333,333	-11,433,333,333
2029			0	11,433,333,333	-11,433,333,333
2030	47,013,574,193	42,586,380,253	4,427,193,940		4,427,193,940
2031	48,894,117,161	44,289,835,463	4,604,281,698		4,604,281,698
2032	50,849,881,848	46,061,428,882	4,788,452,966		4,788,452,966
2033	52,883,877,122	47,903,886,037	4,979,991,084		4,979,991,084
2034	54,999,232,206	49,820,041,479	5,179,190,728		5,179,190,728
2035	57,199,201,495	51,812,843,138	5,386,358,357		5,386,358,357
2036	59,487,169,554	53,885,356,863	5,601,812,691		5,601,812,691
2037	61,866,656,337	56,040,771,138	5,825,885,199		5,825,885,199
2038	64,341,322,590	58,282,401,983	6,058,920,607		6,058,920,607
2039	66,914,975,494	60,613,698,063	6,301,277,431		6,301,277,431
2040	69,591,574,513	63,038,245,985	6,553,328,528		6,553,328,528
2041	72,375,237,494	65,559,775,824	6,815,461,670		6,815,461,670
2042	75,270,246,994	68,182,166,857	7,088,080,136		7,088,080,136
2043	78,281,056,873	70,909,453,532	7,371,603,342		7,371,603,342
2044	81,412,299,148	73,745,831,673	7,666,467,475		7,666,467,475

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2045	84,668,791,114	76,695,664,940	7,973,126,174		7,973,126,174
2046	88,055,542,759	79,763,491,537	8,292,051,221		8,292,051,221
2047	91,577,764,469	82,954,031,199	8,623,733,270		8,623,733,270
2048	95,240,875,048	86,272,192,447	8,968,682,601		8,968,682,601
2049	99,050,510,050	89,723,080,145	9,327,429,905		9,327,429,905
2050	103,012,530,452	93,312,003,351	9,700,527,101		9,700,527,101
2051	107,133,031,670	97,044,483,485	10,088,548,185		10,088,548,185
2052	111,418,352,937	100,926,262,824	10,492,090,113		10,492,090,113
2053	115,875,087,054	104,963,313,337	10,911,773,717		10,911,773,717
2054	120,510,090,536	109,161,845,870	11,348,244,666		11,348,244,666
2055	125,330,494,158	113,528,319,705	11,802,174,453		11,802,174,453
2056	130,343,713,924	118,069,452,493	12,274,261,431		12,274,261,431
2057	135,557,462,481	122,792,230,593	12,765,231,888		12,765,231,888
2058	140,979,760,980	127,703,919,817	13,275,841,163		13,275,841,163
2059	146,618,951,420	132,812,076,610	13,806,874,810		13,806,874,810
2060	152,483,709,476	138,124,559,674	14,359,149,802		14,359,149,802
Total	2,789,237,091,552	2,526,579,045,197	262,658,046,355	34,600,000,000	228,058,046,355

Source: JICA Survey Team

(2) Qualitative Effects

The RO-1 improvement project is located on an international trunk line (CAREC/TRACECA) and the main artery of the country, and therefore, there is high demand for both logistics and human flow, and the traffic volume level of 35,822 vehicles/day is extremely high. The improvement will increase the travel speed from 45 km/h to 60 km/h and shorten the travel time by 30 minutes. As a result, the EIRR was 15%, well above the standard value, and the B/C ratio reached 1.79, confirming that this is a public investment with high economic efficiency.

This project is not only a simple road rehabilitation, but also an extremely promising national strategic investment, as it is in line with the multiple objectives of the national strategy "Uzbekistan Strategy 2030" (Nos. 53, 91, 92), including regional development, export promotion, and strengthening international ties with Kyrgyzstan.

8.3.2 RO-3: A-377 "Samarkand-Ayniy" (0-36 km)

8.3.2.1 Beneficiaries of the Project

The direct beneficiaries of RO-3 are tourists engaged in cross-border travel through the Samarkand - Tajikistan border and the tourist and small logistics companies involved in their transportation, in addition to local residents who use the subject road in Samarkand daily. It is important to note that road widening and pavement improvements will improve travel comfort and time reliability, and will improve cross-border tourist access, among other things. Current tourist flows are small, but in view of the future expansion of border tourism, qualitative improvements in road services will directly lead to an increase in the number of users.

The ultimate beneficiaries include Tajik tourists visiting Samarkand, local residents engaged in tourism-related transportation, lodging, sales, and service industries, and producers and sellers of tourism-related goods. In addition, through enhanced linkages with the international corridors (CAREC and

TRACECA) to which the route connects, improved cross-border logistics and tourism networks could promote economic activity throughout the region and spill over to wider regional benefits.

Based on the total population in the mixed urban-rural area within 3km from the center line of the subject road, 15,027 people will benefit from the project, and an estimated population of several tens of thousands of people will live in and transit through the area.

8.3.2.2 Quantitative and Qualitative Effects

(1) Qualitative Effects

1) Main Transport Indicators

RO-3 (Route A-377: Samarkand - Ayni), the international road connecting the tourist city of Samarkand with the border of Tajikistan, has a low average speed of approximately 60 km/h, and it takes approximately 36 minutes to travel the 36 km section of the road.

After the improvement, the average speed is expected to increase to 70km/h due to road widening and surface improvements, which will reduce the travel time to about 31 minutes. This means that travel time will be improved by about 5 minutes (about 14%), which will significantly increase the efficiency of traffic.

Traffic volume has already reached approximately 24,829 vehicles per day, many of which are cross-border tourists and small logistics vehicles. In light of the recent tourism promotion policy and visa relaxation with Tajikistan, a further increase in traffic volume is expected after the improvement, and the increased road capacity due to the widening will be sufficient to meet this increase in traffic demand.

Thus, the construction of RO-3 will not only increase speed, but will also bring multifaceted benefits such as time savings, improved transportation efficiency, and promotion of international tourism and trade, and the ripple effects on the local economy can be evaluated to be extremely large.

Table 8-25 Qualitative Indicators

Indicator	Before Improvement (Current)	After Improvement (Post-Project)	Remarks
Average Speed	60 km/h	70 km/h	Speed improvement due to pavement rehabilitation
Distance	36 km	36 km	Length of the target section
Travel Time	36 minutes	31 minutes	Approx. 5-minute (14%) reduction in travel time
Traffic Volume	35,822 vehicles/day	Same	Including sightseeing and logistics trucks, and general vehicles

Source: JICA Survey Team

2) Economic Analysis

The economic and financial analysis was conducted based on the assumption that transportation efficiency would be improved due to such reduced travel time and increased road capacity, resulting in an economic internal rate of return (EIRR) of 18.4%, which is higher than the international standard of 12%. The cost-benefit ratio (B/C ratio) was 2.47, indicating that the economic benefits obtained are very high relative to the costs incurred. The Net Present Value (NPV) was also significantly positive at approximately 38.3 billion yen.

Table 8-26 Economic Indicators（EIRR・NPV・B/C）

Indicator	Estimated Value	Remarks
EIRR (Economic Internal Rate of Return)	18.4%	Significantly exceeds the threshold (12%)
B/C Ratio	2.47	High cost-effectiveness
NPV (Net Present Value)	38.3 billion JPY	Large positive economic benefit
Initial Investment Cost	20.6 billion JPY	Concrete pavement is assumed, elevated intersection is included
Annual O&M Cost	0 JPY/year	O&M cost assumed zero JPY.
Main Benefit Item	Time and operation cost saving	Contributing to the efficiency of cross-border traffic and economic activities along the route

Source: JICA Survey Team

The initial investment for the project is estimated to be approximately 20.6 billion yen, assuming asphalt pavement, compared to annual operation and maintenance (O&M) costs of approximately 0 million yen. Since traffic demand is expected to increase in both tourism and trade after the project is completed, the cumulative benefits far exceed the investment cost, and the project is evaluated as a public infrastructure investment that provides stable cost-effectiveness.

Table 8-27 Economic Analysis Result

Project	A-377 "Samarkand sh-Ayniy" highway 0-36 km
B/C	2.47
NPV (JPY)	38,256,587,476
EIRR	18.4%
Social Discount Rate	9%

(Unit: JPY)

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2025			0	150,000,000	-150,000,000
2026			0	150,000,000	-150,000,000
2027			0	6,766,666,667	-6,766,666,667
2028			0	6,766,666,667	-6,766,666,667
2029			0	6,766,666,667	-6,766,666,667
2030	27,253,956,876	23,614,390,607	3,639,566,269		3,639,566,269
2031	28,344,115,151	24,558,966,231	3,785,148,920		3,785,148,920
2032	29,477,879,757	25,541,324,880	3,936,554,877		3,936,554,877
2033	30,656,994,948	26,562,977,875	4,094,017,072		4,094,017,072
2034	31,883,274,745	27,625,496,990	4,257,777,755		4,257,777,755
2035	33,158,605,735	28,730,516,870	4,428,088,865		4,428,088,865
2036	34,484,949,965	29,879,737,545	4,605,212,420		4,605,212,420
2037	35,864,347,963	31,074,927,047	4,789,420,917		4,789,420,917
2038	37,298,921,882	32,317,924,128	4,980,997,753		4,980,997,753
2039	38,790,878,757	33,610,641,094	5,180,237,663		5,180,237,663
2040	40,342,513,907	34,955,066,737	5,387,447,170		5,387,447,170
2041	41,956,214,464	36,353,269,407	5,602,945,057		5,602,945,057
2042	43,634,463,042	37,807,400,183	5,827,062,859		5,827,062,859
2043	45,379,841,564	39,319,696,190	6,060,145,373		6,060,145,373
2044	47,195,035,226	40,892,484,038	6,302,551,188		6,302,551,188
2045	49,082,836,636	42,528,183,400	6,554,653,236		6,554,653,236
2046	51,046,150,101	44,229,310,736	6,816,839,365		6,816,839,365
2047	53,087,996,105	45,998,483,165	7,089,512,940		7,089,512,940
2048	55,211,515,949	47,838,422,492	7,373,093,458		7,373,093,458
2049	57,419,976,587	49,751,959,391	7,668,017,196		7,668,017,196
2050	59,716,775,651	51,742,037,767	7,974,737,884		7,974,737,884
2051	62,105,446,677	53,811,719,278	8,293,727,399		8,293,727,399
2052	64,589,664,544	55,964,188,049	8,625,476,495		8,625,476,495
2053	67,173,251,125	58,202,755,571	8,970,495,555		8,970,495,555
2054	69,860,181,171	60,530,865,794	9,329,315,377		9,329,315,377
2055	72,654,588,417	62,952,100,425	9,702,487,992		9,702,487,992

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2056	75,560,771,954	65,470,184,442	10,090,587,512		10,090,587,512
2057	78,583,202,832	68,088,991,820	10,494,211,012		10,494,211,012
2058	81,726,530,945	70,812,551,493	10,913,979,453		10,913,979,453
2059	84,995,592,183	73,645,053,552	11,350,538,631		11,350,538,631
2060	88,395,415,871	76,590,855,695	11,804,560,176		11,804,560,176
Total	1,616,931,890,732	1,401,002,482,891	215,929,407,840	20,600,000,000	195,329,407,840

Source: JICA Survey team

(2) Qualitative Effects

RO-3 is an international highway connecting Samarkand, one of Uzbekistan's leading tourist cities, and Jartepa, a border point with Tajikistan, and plays an extremely important role in promoting tourism and international cooperation in the country. The route is part of the Central Asia Regional Economic Cooperation Corridor (CAREC) and TRACECA (Europe-Caucasus-Asia Transportation Corridor), and is an international transportation axis that supports both tourism and trade.

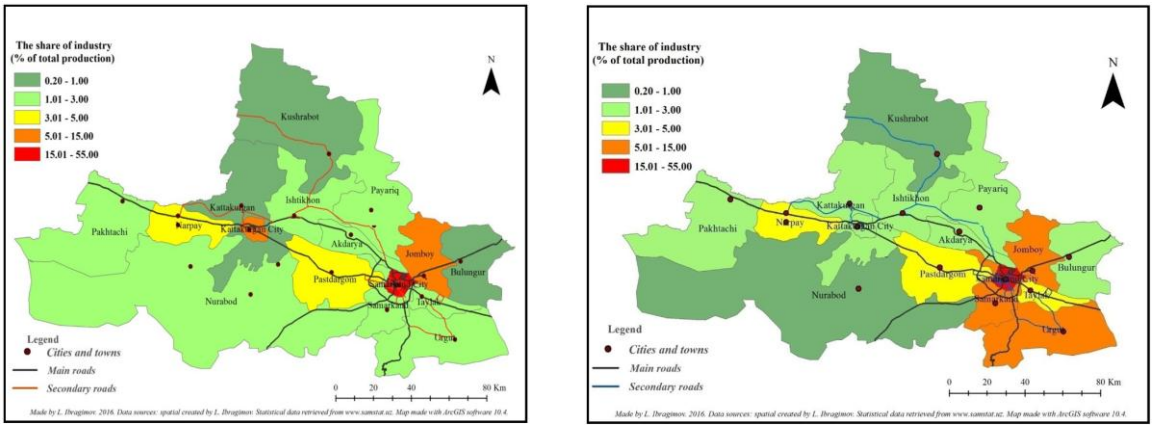
In particular, in terms of tourism, according to pre-pandemic statistics, the Samarkand region receives approximately 2 million tourists annually, and the tourism sector is considered an important growth industry in Uzbekistan's economy. The government has set a goal of increasing the number of foreign visitors to 12 million per year by 2030, of which Samarkand is positioned as a priority tourist center. This route is a key infrastructure to support the realization of such a policy, and in particular, it functions to support the movement of foreign tourists visiting Samarkand across the border with Tajikistan.

In addition, visa relaxation measures and tourism promotions between Uzbekistan and Tajikistan are being promoted one after another after 2023, and the resulting expansion of cross-border human flow is further expected in the future. The RO-3 is expected to play a role in supporting such two-way tourism and economic exchanges by increasing road capacity and improving the driving environment, thereby contributing to the promotion of exchanges not only at the regional level but also between countries.

Samarkand is a leading region in Uzbekistan in terms of industrial development and has achieved sustainable economic growth and job creation through coordination between national and regional policies. The food, light industry, and building materials industries are particularly central, contributing to job creation and economic growth in the region. Between 2005 and 2022, industrial production increased sevenfold and consumer goods production increased 5.5-fold, with the share of industry in the region's GDP rising from 8.6% to 16.5%. In the Urgut region, industries are growing rapidly, centered around the FEZ (Free Economic Zone), making it the center of employment and economic activity in the region.[2] Meanwhile, industrial development in the Taylak area, through which the A377 passes, is somewhat behind that in the Urgut district, but the A377 improvement project is expected to revitalize industry in the district. The Urgut Free Economic Zone (FEZ Urgut: UFEZ), which is driving the economic development of the Urgut district, is an industrial promotion center established in Uzbekistan in 2017. More than 60 projects are underway in the zone, with

[2] 『Industrial development and assessment of its impact in Samarkand region - a GIS mapping based study』(2024: Lutfullo Ibragimov1* , Olimjon Sherxolov2 , Bekzod Musayev, 2, Shodiyor Boboyev1, 3, Muazzam Sobirova 4, Gulmira Boratova)

126 companies (20 of which are foreign) investing a total of approximately $196.2 million and creating approximately 5,000 jobs.[3] UFEZ is adjacent to national highway A377 and Samarkand Airport, making logistics highly efficient, and future expansion of production is expected. Strengthening the logistics capabilities of the A377 is important to meet the logistics demands that accompany the expansion of UFEZ. From this perspective, the improvement of RO-3 is not only a simple road rehabilitation, but also a strategic infrastructure investment that will contribute to the promotion of tourism, international economic exchange, and the multiple goals of the Uzbekistan Strategy 2030 (Goals Nos. 53, 91, and 92).



As of 2000 As of 2022

Figure 8-64 Industrial Production Ratio by Region in Samarkand Province [4]

[3] Free Economic Zone "Urgut" Territory Of Big Opportunities (https://www.uzbekembassy.in/wp-content/uploads/2018/05/Presentation-of-FEZ-Urgut.pdf)

[4] 『Industrial development and assessment of its impact in Samarkand region - a GIS mapping based study』(2024: Lutfullo Ibragimov1* , Olimjon Sherxolov2 , Bekzod Musayev, 2, Shodiyor Boboyev1, 3, Muazzam Sobirova 4, Gulmira Boratova)

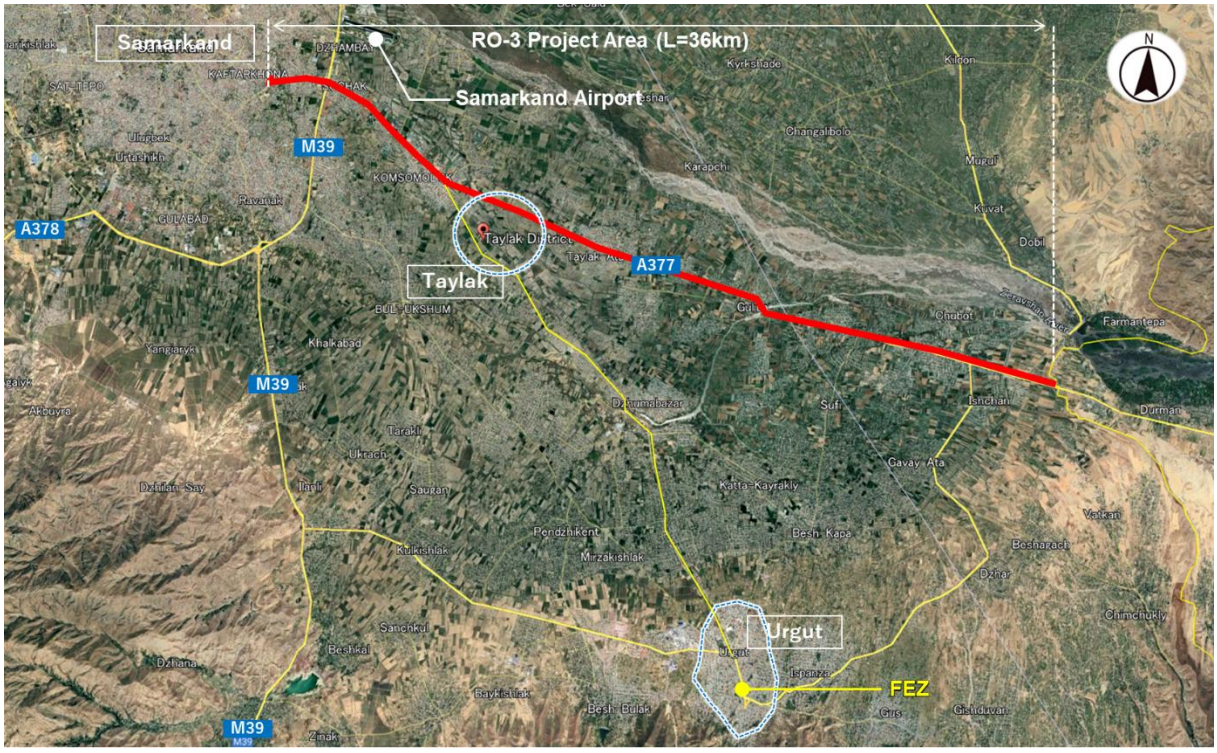


Figure 8-65 Location Map on UFEZ and A377

8.3.3 RO-6: A376 "Ko'kon-Jizzakh" (14-45 km)

8.3.3.1 Beneficiaries of the Project

The direct beneficiaries are local residents and commuters who use this section of road (14km-45km) daily, long-distance bus users, and commercial transport drivers who transport daily necessities and agricultural products along the route. The road is located within the Fergana Basin and is surrounded by a small but active area of human movement and commerce. Improved pavement conditions and widening of the road are expected to improve vehicle travel and traffic reliability, as well as improve operational comfort and safety for the transit operators.

In addition, the city of Khujand on the Tajikistan side and the Jizzakh region on the Uzbekistan side, which will be connected via this road, are expected to indirectly benefit through improved efficiency of cross-border human flow and logistics. As the route belongs to CAREC and TRACECA, which are important international corridors for both Tajikistan and Uzbekistan, the development of the subject section will contribute to improving the reliability of cross-border economic exchange and inter-regional logistics, and the ultimate beneficiaries will include international commercial parties and the general public who will enjoy the associated services. The ultimate beneficiaries of the project will be international commercial interests and the general public, who will enjoy the associated services.

Furthermore, the population within a 3km radius on either side of the center line of the subject road is estimated to be 109,405, which is a significant increase in the reliability of the infrastructure that supports the daily lives and economic activities of the many residents living in the areas along the road.

8.3.3.2 Quantitative and Qualitative Effects

(1) Quantitative Effects（EIRR）

1) Main transport Indicators

The section covered by RO-6 (between Ko'kon and Jizzakh) is an international highway with a total length of 31 km. Prior to the improvement, the average travel speed was about 60 km/h, and the travel time was about 31 minutes. With the improvement of the road's pavement condition and widening, the project is expected to increase the average speed to 70 km/h and shorten the travel time to about 27 minutes.

This 4-minute reduction will directly translate into increased transportation efficiency and reduced time costs, especially for long-distance buses and commercial vehicles. In addition, the smoother traffic will create a more reliable logistics network and improve the convenience of daily travel for residents along the route.

Before the improvement, traffic volume was 22,247 vehicles/day, and traffic demand was already at a high level. After the improvement, traffic volume is expected to increase further due to the improved road conditions. In particular, cross-border traffic to Tajikistan is expected to be facilitated, and the function under these conditions. National logistics corridor will be strengthened.

Table 8-28 Qualitative Indicators

Indicator	Before Improvement (Current)	After Improvement (Post-Project)	Remarks
Average Speed	60 km/h	70 km/h	Speed improvement due to pavement rehabilitation
Distance	31km	31 km	No change
Travel Time	31 min.	27 min.	Approx. 4-minute reduction in travel time
Traffic Volume	22,247 vehicles/day	Same (high demand level)	International logistics, commuting, intercity travel, and cross-border traffic

Source：JICA Survey Team

2) Economic Analysis

The economic evaluation conducted for the RO-6 maintenance project showed an economic internal rate of return (EIRR) of 13%, which is much higher than the evaluation threshold (12%) adopted by JICA and other international organizations. This indicates that while the amount of investment is relatively low, benefits will steadily accumulate over the medium to long term.

The cost-benefit ratio (B/C ratio) is 1.50, which is above the standard value, and the Net Present Value (NPV) is approximately 24.8 billion yen, which is significantly positive, indicating that the net economic benefits to society are expected to continue to accrue over the long term.

Table 8-29 Economic Indicators（EIRR・NPV・B/C）

Indicator	Estimated Value	Remarks
EIRR (Economic Internal Rate of Return)	13%	Significantly exceeds the threshold (12%)
B/C Ratio	1.5	High cost-effectiveness
NPV (Net Present Value)	24.8 billion JPY	Large positive economic benefit
Initial Investment Cost	17.6 billion JPY	Concrete pavement is assumed

Indicator	Estimated Value	Remarks
Annual O&M Cost	0 JPY/year	O&M cost assumed zero
Main Benefit Item	Time and operating cost savings	Contributing to the efficiency of cross-border traffic and economic activities along the route

Source: JICA Survey Team

Table 8-30 Economic Analysis Result

Project	A-376 "Ko'kon-Jizzakh" highway 0-45 km
B/C	1.50
NPV (JPY)	24,819,359,928
EIRR	13%
Social Discount Rate	9%

(Unit: JPY)

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2,025			0	150,000,000	-150,000,000
2,026			0	150,000,000	-150,000,000
2,027			0	5,766,666,667	-5,766,666,667
2,028			0	5,766,666,667	-5,766,666,667
2,029			0	5,766,666,667	-5,766,666,667
2,030	20,113,867,506	18,219,776,409	1,894,091,097		1,894,091,097
2,031	20,918,422,207	18,948,567,465	1,969,854,741		1,969,854,741
2,032	21,755,159,095	19,706,510,164	2,048,648,931		2,048,648,931
2,033	22,625,365,459	20,494,770,570	2,130,594,888		2,130,594,888
2,034	23,530,380,077	21,314,561,393	2,215,818,684		2,215,818,684
2,035	24,471,595,280	22,167,143,849	2,304,451,431		2,304,451,431
2,036	25,450,459,091	23,053,829,603	2,396,629,488		2,396,629,488
2,037	26,468,477,455	23,975,982,787	2,492,494,668		2,492,494,668
2,038	27,527,216,553	24,935,022,099	2,592,194,455		2,592,194,455
2,039	28,628,305,215	25,932,422,982	2,695,882,233		2,695,882,233
2,040	29,773,437,424	26,969,719,902	2,803,717,522		2,803,717,522
2,041	30,964,374,921	28,048,508,698	2,915,866,223		2,915,866,223
2,042	32,202,949,918	29,170,449,046	3,032,500,872		3,032,500,872
2,043	33,491,067,914	30,337,267,008	3,153,800,907		3,153,800,907
2,044	34,830,710,631	31,550,757,688	3,279,952,943		3,279,952,943
2,045	36,223,939,056	32,812,787,995	3,411,151,061		3,411,151,061
2,046	37,672,896,619	34,125,299,515	3,547,597,103		3,547,597,103
2,047	39,179,812,483	35,490,311,496	3,689,500,987		3,689,500,987
2,048	40,747,004,983	36,909,923,956	3,837,081,027		3,837,081,027
2,049	42,376,885,182	38,386,320,914	3,990,564,268		3,990,564,268
2,050	44,071,960,589	39,921,773,750	4,150,186,839		4,150,186,839
2,051	45,834,839,013	41,518,644,700	4,316,194,312		4,316,194,312
2,052	47,668,232,573	43,179,390,489	4,488,842,085		4,488,842,085
2,053	49,574,961,876	44,906,566,108	4,668,395,768		4,668,395,768
2,054	51,557,960,351	46,702,828,752	4,855,131,599		4,855,131,599
2,055	53,620,278,765	48,570,941,902	5,049,336,863		5,049,336,863
2,056	55,765,089,916	50,513,779,579	5,251,310,337		5,251,310,337
2,057	57,995,693,513	52,534,330,762	5,461,362,751		5,461,362,751
2,058	60,315,521,253	54,635,703,992	5,679,817,261		5,679,817,261
2,059	62,728,142,103	56,821,132,152	5,907,009,951		5,907,009,951
2,060	65,237,267,787	59,093,977,438	6,143,290,349		6,143,290,349
Total	1,193,322,274,809	1,080,949,003,163	112,373,271,646	17,600,000,000	94,773,271,646

Source: JICA Survey Team

Although the initial investment is of medium scale, amounting to approximately 17.6 billion yen, the project is expected to generate annual benefits of over 1 billion yen after the project is completed, and is evaluated to be a public works project that will be sufficient as an infrastructure base for eastern Uzbekistan in the long term. In addition, the project is expected to have a ripple effect of increasing the reliability of international logistics and promoting border trade and regional economic activities in a more stable manner.

(2) Qualitative Effects

RO-6 is an international trunk line connecting Kokand in the Fergana Basin with the main city of Tajikistan, Khujand, and is located on a strategic transportation axis connecting with the Central Asia Regional Economic Cooperation Corridor (CAREC) and TRACECA (Europe-Caucasus-Asia Transportation Corridor). Although the pavement condition of the section to be developed is considered relatively good, traffic volume is high at approximately 17,467 vehicles/day, and there is active cross-border movement of people, including long-distance buses and commercial vehicles.

This route functions as an artery for intra-regional commercial distribution, especially in the transportation of small-scale agricultural products and daily necessities, and the improvement of the route is expected to enhance the safety and comfort of travel, thereby increasing the efficiency of daily economic activities. In addition, the deepening of cross-border linkages with Tajikistan will improve reliability and reduce time loss in international trade and logistics. Furthermore, this route is consistent with several goals (Nos. 53, 91, and 92) in the national growth vision of the Uzbekistan Strategy 2030, and is an important route in the national strategy, contributing to both regional development and the promotion of international exchange.

Although the development effect is considered to be limited compared to other routes, given the high existing transportation demand and the future strengthening of border linkages, it is expected to play an important role in the long run as part of the infrastructure that contributes to the economic revitalization of the eastern region and the strengthening of inter-corridor linkages.

8.3.4 RO-7: D089 "Fergana-Kuvasai- Border of the Kyrgyz Republic" (6-25km)

8.3.4.1 Beneficiaries of The Project

The direct beneficiaries of the project are residents in Fergana and Kvasai, commuters who travel this route daily, long-distance bus passengers, and truck drivers and logistics companies engaged in cross-border freight transportation. In particular, as a goods flow line connecting Uzbekistan and Kyrgyzstan, the route is heavily trafficked by large vehicles, which will directly benefit from the improvement of pavement condition and traffic facilitation through widening and improvement.

The ultimate beneficiaries are producers and distributors in the Fergana Basin, businesses involved in trade with Tajikistan and Kyrgyzstan, and urban residents and consumers who depend on imports and exports between the two countries. In addition, the connection with the cities connected to the Kyrgyz side will contribute to the facilitation of trade throughout Central Asia as a whole, as it will streamline the overall international logistics in the region.

The population within 3 km of the center line of RO-7 is 67,055, which is relatively high among other projects.

8.3.4.2 Quantitative and Qualitative Effects

(1) Quantitative effects

1) Main Transport Indicators

The project is an important arterial road that serves as a transit route for long-distance and cross-border traffic. The average travel speed was approximately 60 km/h, and the travel time was 19 minutes before the improvement, but after the road was rehabilitated and widened through this project, the average speed will increase to 70 km/h, and the travel time will be reduced to approximately 16 minutes.

This reduction of approximately 3 minutes (16%) will contribute to a reduction in time costs, especially in logistics and long-distance transportation, and will contribute to the establishment of an efficient transportation network. In addition, the development of a reliable transportation environment is expected to improve the convenience of residents and transit traffic along the route.

The daily traffic volume before the construction of this section reached 35,413 vehicles, most of which are long-distance and cross-border vehicles. Therefore, the construction of this section is an important measure to facilitate the entire international logistics corridor and to meet sustainable traffic demand.

Table 8-31 Quantitative Effects

Indicator	Before Improvement (Current)	After Improvement (Post-Project)	Remarks
Average Speed	60 km/h	70 km/h	Speed improvement due to pavement rehabilitation
Distance	19 km	19 km	Length of the target section
Travel Time	19 minutes	16 minutes	16% reduction in travel time
Traffic Volume	35,413 vehicles/day	Same (high demand level)	Many long-distance and cross-border vehicles

Source: JICA Survey Team

2) Economic Analysis

Financial and economic analysis results indicate that the project is extremely effective in terms of maintenance. The economic internal rate of return (EIRR) reached 20%, far exceeding the 12% standard for adoption by JICA and other organizations. The cost-benefit ratio (B/C ratio) is 2.83, well above 1, clearly indicating the high level of benefits relative to expenditures. The Net Present Value (NPV) is also positive at approximately 22.9 billion yen, confirming that the project is economically viable.

The initial investment is estimated to be approximately 11.3 billion yen, with annual O&M expenses of 0 million yen. On the other hand, the annual benefit amount after the development of the project is expected to increase from over 4 billion yen year by year, and the economic effect is expected to more than double in the long term.

Table 8-32 Economic Indicators（EIRR・NPV・B/C）

Indicator	Estimated Value	Remarks
EIRR (Economic Internal Rate of Return)	20%	Significantly exceeds the threshold (12%)
B/C Ratio	2.83	High cost-effectiveness
NPV (Net Present Value)	22.9 billion JPY	Large positive economic benefit
Initial Investment Cost	11.3 billion JPY	Concrete pavement is assumed
Annual O&M Cost	0 JPY/year	O&M cost assumed zero
Main Benefit Item	Time and operating cost saving	Contributing to international logistics and intercity transportation

Source: JICA Survey Team

Table 8-33 Economic Analysis Result

Project	D089 "Fergana city - Kuvasai city - border of the Kyrgyz Republic" highway 0-25 km
B/C	2.83
NPV (JPY)	22,934,237,693
EIRR	20%
Social Discount Rate	9%

(Unit: JPY)

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2025			0	150,000,000	-150,000,000
2026			0	150,000,000	-150,000,000
2027			0	3,666,666,667	-3,666,666,667
2028			0	3,666,666,667	-3,666,666,667
2029			0	3,666,666,667	-3,666,666,667
2030	20,069,229,800	17,775,458,774	2,293,771,026		2,293,771,026
2031	20,871,998,992	18,486,477,125	2,385,521,867		2,385,521,867
2032	21,706,878,952	19,225,936,210	2,480,942,742		2,480,942,742
2033	22,575,154,110	19,994,973,659	2,580,180,451		2,580,180,451
2034	23,478,160,275	20,794,772,605	2,683,387,669		2,683,387,669
2035	24,417,286,686	21,626,563,509	2,790,723,176		2,790,723,176
2036	25,393,978,153	22,491,626,050	2,902,352,103		2,902,352,103
2037	26,409,737,279	23,391,291,092	3,018,446,187		3,018,446,187
2038	27,466,126,770	24,326,942,735	3,139,184,035		3,139,184,035
2039	28,564,771,841	25,300,020,445	3,264,751,396		3,264,751,396
2040	29,707,362,715	26,312,021,263	3,395,341,452		3,395,341,452
2041	30,895,657,223	27,364,502,113	3,531,155,110		3,531,155,110
2042	32,131,483,512	28,459,082,198	3,672,401,315		3,672,401,315
2043	33,416,742,853	29,597,445,485	3,819,297,367		3,819,297,367
2044	34,753,412,567	30,781,343,305	3,972,069,262		3,972,069,262
2045	36,143,549,069	32,012,597,037	4,130,952,032		4,130,952,032
2046	37,589,291,032	33,293,100,919	4,296,190,114		4,296,190,114
2047	39,092,862,673	34,624,824,955	4,468,037,718		4,468,037,718
2048	40,656,577,180	36,009,817,954	4,646,759,227		4,646,759,227
2049	42,282,840,268	37,450,210,672	4,832,629,596		4,832,629,596
2050	43,974,153,878	38,948,219,099	5,025,934,780		5,025,934,780
2051	45,733,120,033	40,506,147,862	5,226,972,171		5,226,972,171
2052	47,562,444,835	42,126,393,777	5,436,051,058		5,436,051,058
2053	49,464,942,628	43,811,449,528	5,653,493,100		5,653,493,100
2054	51,443,540,333	45,563,907,509	5,879,632,824		5,879,632,824
2055	53,501,281,947	47,386,463,810	6,114,818,137		6,114,818,137
2056	55,641,333,225	49,281,922,362	6,359,410,863		6,359,410,863
2057	57,866,986,554	51,253,199,256	6,613,787,297		6,613,787,297
2058	60,181,666,016	53,303,327,227	6,878,338,789		6,878,338,789
2059	62,588,932,656	55,435,460,316	7,153,472,341		7,153,472,341
2060	65,092,489,963	57,652,878,728	7,439,611,234		7,439,611,234
Total	1,190,673,994,018	1,054,588,377,578	136,085,616,440	11,300,000,000	124,785,616,440

Source: JICA Survey Team

(2) Qualitative Effect

RO-7 is a key international human and logistics link between Uzbekistan and Kyrgyz, especially serving as a major logistics axis connecting the city of Fergana and the city of Kizilkiyah on the Kyrgyz side. Improved pavement conditions and lane widening will greatly improve the driving environment for logistics trucks and long-distance buses, thereby promoting more efficient border trade.

In addition, this route will be linked to the Obi road on the Kyrgyz side, which is currently being supported by JICA. This will increase the consistency of the trunk line network between the two countries and play a strategic role as part of an international corridor for the entire Central Asian region. The project is highly consistent with the goals set forth in the Uzbekistan Strategy 2030 (Nos. 53, 91, and 92), and from the perspective of strengthening international linkages and promoting regional economies, this improvement project has an important policy position.

8.3.5 RO-10: M39 "Takhtaqoracha Tunnel Construction Project"

8.3.5.1 Beneficiaries of The Project

RO-10 is a mountain road that passes through the Takhtaqoracha Pass, part of the M39, and is located on a section of the road with a very high risk of disasters due to falling rocks. Direct beneficiaries include residents, commuters, and tourists of Samarkand and surrounding areas who pass through this section daily, as well as logistics companies and truck drivers transporting goods and agricultural products. Since the road is used on a daily basis with a high risk of falling rocks and inadequate safety, improving travel safety through slope disaster prevention measures will bring direct and immediate benefits.

The ultimate beneficiaries are the transit hub areas that play a part in international logistics, the importers and exporters who will be incorporated into the trade network via the Caspian Sea, and the producers and consumers who depend on stable means of transportation from the agricultural production areas. In addition, the section in question is a toll road (long tunnel) that will be constructed in the future, which will dramatically improve transportation speed and safety, and the benefits will be long-lasting and wide-ranging.

The population living within 3 km of the center line of the section is estimated to be 9,414 due to the low population density in the mountainous area.

8.3.5.2 Quantitative and Qualitative Effects

(1) Qualitative Effects

1) Main Transport Indicators

The Takhtaqoracha Pass section, which is the subject of RO-10's maintenance, has many fallen rocks, steep inclines, and sharp curves, and the current average speed is only approximately 40 km/h, requiring approximately 30 minutes to travel a 20 km section due to the poor driving environment. Such long

travel time is a daily travel burden for commuters and tourists, as well as an economic loss for logistics companies in terms of delivery delays and increased transportation costs.

This project is the construction of a new bypass road, including a mountain tunnel. It is expected to increase the maximum speed to 100 km/h by improving road surface stability, alignment, visibility, and safety facilities. This will shorten the travel time by about 23 minutes, enabling traffic to pass through the area in about 7 minutes. This is an improvement of approximately 77% in terms of time savings and will noticeably improve the smoothness of traffic for a given distance.

Table 8-34 Qualitative Effects

Indicator	Before Improvement (Current)	After Improvement (Post-Project)	Remarks
Average Speed	40km/h	100 km/h	Speed Improvement by Tunnel
Distance	20 km	12km	Shortcut the routes compared to the current routes
Travel Time	30 minutes	7 minutes	Time savings of approximately 23 minutes (77%)
Traffic Volume	11,789 vehicles/day	Same	Mainly commuter, tourist, and logistics vehicles

Source: JICA Survey Team

2) Economic Analysis

The results of the economic analysis show that the tunnel construction of this project will improve travel speed. The Economic Internal Rate of Return (EIRR) is calculated to be 13%, which falls slightly higher than the JICA selection criterion of 12%. The cost-benefit ratio (B/C ratio) is 1.63, well above 1, clearly indicating the high level of benefits relative to expenditure. The Net Present Value (NPV) is also positive at approximately 51.0 billion yen, confirming that the project is economically viable.

This improvement effect is not limited to a mere reduction in travel time, but, in combination with improved traffic safety and reliability, will greatly enhance the convenience of all uses, including tourism, commuting, and logistics. In particular, the project should be highly regarded both economically and socially for its contribution to the stabilization of logistics and the stimulation of inter-regional exchanges.

Furthermore, the target route (existing road) has poor road alignment, which restricts the passage of large vehicles, but this project will drastically improve the road alignment, making it possible for large vehicles to pass through. In the current economic analysis, an OD study focusing on the future shift in large vehicle traffic volume after this project has not been carried out, so future traffic volume that takes into account future growth rates is used in addition to current traffic volume (no large vehicles passing through), but further benefits are expected as new large vehicle traffic volume will be shifted after the project.

Table 8-35 Economic Indicators（EIRR・NPV・B/C）

Indicator	Estimated Value	Remarks
EIRR (Economic Internal Rate of Return)	13%	Significantly exceeds the threshold (12%)
B/C Ratio	1.63	High cost-effectiveness
NPV (Net Present Value)	51.0 billion JPY	Large positive economic benefit
Initial Investment Cost	46.8 billion JPY	Payment is concentrated in 2028–2032
Annual O&M Cost	See Table 8-36	Considering tunnel operation power and tunnel facility maintenance costs
Main Benefit Item	Time and operating cost savings	Contributing to the facilitation of international logistics and intercity transportation

Source: JICA Survey Team

Table 8-36 Economic Analysis Result

Project	M39 "Almaty- Bishkek-Tashkent- Shahrisabz - Termez "(1115-1145 km)
B/C	1.63
NPV (JPY)	51,275,903,592
EIRR	13%
Social Discount Rate	9%

(Unit: JPY)

Year	Benefit (JPY)			Cost (JPY)		Benefit-Cost (JPY)
	Without	With	Without-With	With	O&M Cost	
2025			0	150,000,000		-150,000,000
2026			0	150,000,000		-150,000,000
2027			0	150,000,000		-150,000,000
2028			0	9,270,000,000		-9,270,000,000
2029			0	9,270,000,000		-9,270,000,000
2030			0	9,270,000,000		-9,270,000,000
2031			0	9,270,000,000		-9,270,000,000
2032			0	9,270,000,000		-9,270,000,000
2033	9,229,429,837	3,172,211,060	6,057,218,777		43,800,000	6,013,418,777
2034	9,598,607,031	3,299,099,503	6,299,507,528		43,800,000	6,255,707,528
2035	9,982,551,312	3,431,063,483	6,551,487,829		43,800,000	6,507,687,829
2036	10,381,853,364	3,568,306,022	6,813,547,342		43,800,000	6,769,747,342
2037	10,797,127,499	3,711,038,263	7,086,089,236		55,890,000	7,030,199,236
2038	11,229,012,599	3,859,479,794	7,369,532,805		111,010,000	7,258,522,805
2039	11,678,173,103	4,013,858,985	7,664,314,117		43,800,000	7,620,514,117
2040	12,145,300,027	4,174,413,345	7,970,886,682		43,800,000	7,927,086,682
2041	12,631,112,028	4,341,389,878	8,289,722,149		43,800,000	8,245,922,149
2042	13,136,356,509	4,515,045,474	8,621,311,035		175,890,000	8,445,421,035
2043	13,661,810,769	4,695,647,293	8,966,163,477		43,800,000	8,922,363,477
2044	14,208,283,200	4,883,473,184	9,324,810,016		111,010,000	9,213,800,016
2045	14,776,614,528	5,078,812,112	9,697,802,417		43,800,000	9,654,002,417
2046	15,367,679,109	5,281,964,596	10,085,714,513		43,800,000	10,041,914,513
2047	15,982,386,274	5,493,243,180	10,489,143,094		298,480,200	10,190,662,894
2048	16,621,681,725	5,712,972,907	10,908,708,818		43,800,000	10,864,908,818
2049	17,286,548,994	5,941,491,823	11,345,057,170		43,800,000	11,301,257,170
2050	17,978,010,953	6,179,151,496	11,798,859,457		111,010,000	11,687,849,457
2051	18,697,131,392	6,426,317,556	12,270,813,835		43,800,000	12,227,013,835
2052	19,445,016,647	6,683,370,258	12,761,646,389		535,080,000	12,226,566,389
2053	20,222,817,313	6,950,705,069	13,272,112,244		43,800,000	13,228,312,244
2054	21,031,730,006	7,228,733,272	13,802,996,734		43,800,000	13,759,196,734
2055	21,872,999,206	7,517,882,602	14,355,116,603		43,800,000	14,311,316,603
2056	22,747,919,174	7,818,597,907	14,929,321,268		111,010,000	14,818,311,268
2057	23,657,835,941	8,131,341,823	15,526,494,118		333,490,000	15,193,004,118
2058	24,604,149,379	8,456,595,496	16,147,553,883		43,800,000	16,103,753,883
2059	25,588,315,354	8,794,859,316	16,793,456,038		43,800,000	16,749,656,038
2060	26,611,847,968	9,146,653,688	17,465,194,280		43,800,000	17,421,394,280

Year	Benefit (JPY)			Cost (JPY)		Benefit-Cost (JPY)
	Without	With	Without-With	With	O&M Cost	
2061	27,676,321,887	9,512,519,836	18,163,802,051		43,800,000	18,120,002,051
2062	28,783,374,762	9,893,020,629	18,890,354,133		485,690,200	18,404,663,933
Tota l	517,631,997,890	177,913,259,8 50	339,718,738,040	46,800,000,000	3,204,560,400	289,714,177,640

Source: JICA Survey Team

(2) Qualitative Effects

The Takhtaqoracha Pass section of the M39 road, which is the target of RO-10 development, is a key mountain transportation route connecting Samarkand and the southern region, serving diverse human flows such as logistics, tourism, and commuting. The risk of falling rocks is extremely high in this section, and human casualties have actually occurred. This tunnel project has an extremely high level of disaster prevention.

It is envisioned to be a toll tunnel road and is expected to take more than 10 years to be put into service. However, this project will ensure safety and reliability, which will dramatically improve high-speed transportation and traffic safety performance, and contribute to maintaining the function of the current road as a major route.

The project is also consistent with the Uzbekistan Strategy 2030's goals of "improving infrastructure safety" and "building resilient transportation networks," and the project is positioned as a priority development target from both disaster prevention and transportation policy perspectives.

8.3.6 RD-3: M39 "Almaty-Bishkek-Tashkent-Shahrisabz-Termez" (1,115-1,145 km)

8.3.6.1 Beneficiaries of The Project

The direct beneficiaries of the project are local residents who use the Takhtaqoracha Pass section of the M39 daily, commuters and students between Samarkand and the southern region, as well as tourists to Samarkand and tourism-related businesses. They will directly improve their mobility and continuity of economic activities by ensuring safe and stable road traffic due to reduced risk of falling rocks.

The final beneficiaries will include international logistics companies and agricultural transporters using the route, as well as domestic and foreign companies and consumers who will benefit from the improved efficiency of their logistics. In addition, the existing M39 remains an important public road, regardless of the trend toward toll highways and future tunneling, and will benefit both the region and the nation in terms of securing a reliable alternative route. The population along a 3km radius of the subject section is expected to be about 23,535, although the population is small due to the mountainous region.

8.3.6.2 Quantitative and Qualitative Effects

(1) Qualitative effects（EIRR）

1) Main Transport Indicator

RD-3's maintenance targets are not pavement improvement but safety projects, mainly slope disaster prevention works, and the benefits are categorized as lost opportunity benefits through "avoidance of impassability," "avoidance of accidents," and "assurance of safety," rather than "time savings.

The Takhtaqoracha Pass section, which is the target of RD-3 improvement, is prone to rockfall, with large rockfalls occurring once every 4-10 years and small rockfalls occurring annually, causing a daily travel burden for commuters and tourists, as well as economic losses for logistics companies in terms of delivery delays and increased transportation costs.

The main component of the benefit assessment was based on the assumption that traffic loss due to impassable traffic caused by falling rocks occurs once every 4 years for 1 day in the ex-ante period and once every 10 years in the ex-post period.

Table 8-37 Qualitative Effects

Indicator	Before Improvement (Current)	After Improvement (Post-Project)	Remarks
Average Speed	45 km/h	Same	None
Distance	30 km	Same	M39 (Takhtaqoracha pass section)
Travel Time	30 minutes	Same	No change
Traffic Volume	11,789 vehicles/day	Same	Mainly commuter, tourist, and logistics vehicles

Source: JICA Survey Team

2) Economic Analysis

The RD-3 improvement targets are accounted for in terms of loss-avoidance benefits due to "avoidance of impassable traffic," and although there are eight improvement locations, the overall average is calculated. The project cost is estimated to be approximately 1.8 billion yen for the initial investment, and 0 yen/year on average for maintenance and management. As a result, EIRR was 17%, far exceeding the standard value of 12%, B/C was 2.20, and NPV was a large value of 3.1 billion yen, which can be judged to be acceptable in terms of balance with benefits.

Table 8-38 Economic Indicators（EIRR・NPV・B/C）

Indicator	Estimated Value	Remarks
EIRR (Economic Internal Rate of Return)	17%	Significantly exceeds the threshold (12%)
B/C Ratio	2.20	High cost-effectiveness
NPV (Net Present Value)	3.1 billion JPY	Large positive economic benefit
Initial Investment Cost	1.8 billion JPY	Concentrated in 2027–2029
Annual O&M Cost	0 JPY/year	O&M cost is assumed at 0
Main Benefit Item	Avoided opportunity loss	Avoided opportunity loss equivalent to one-day road closure due to rockfall

Source: JICA Survey Team

Table 8-39 Economic Analysis Result

Project	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"
B/C	2.20
NPV	3,120,098,052
EIRR	17%
Social Discount rate	9%

(Unit: JPY)

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2025			0	15,000,000	-15,000,000
2026			0	15,000,000	-15,000,000
2027			0	590,000,000	-590,000,000
2028			0	590,000,000	-590,000,000
2029			0	590,000,000	-590,000,000
2030	472,567,169	189,026,868	283,540,301		283,540,301
2031	491,469,856	196,587,942	294,881,913		294,881,913
2032	511,128,650	204,451,460	306,677,190		306,677,190
2033	531,573,796	212,629,518	318,944,278		318,944,278
2034	552,836,748	221,134,699	331,702,049		331,702,049
2035	574,950,218	229,980,087	344,970,131		344,970,131
2036	597,948,227	239,179,291	358,768,936		358,768,936
2037	621,866,156	248,746,462	373,119,693		373,119,693
2038	646,740,802	258,696,321	388,044,481		388,044,481
2039	672,610,434	269,044,174	403,566,260		403,566,260
2040	699,514,851	279,805,940	419,708,911		419,708,911
2041	727,495,445	290,998,178	436,497,267		436,497,267
2042	756,595,263	302,638,105	453,957,158		453,957,158
2043	786,859,074	314,743,629	472,115,444		472,115,444
2044	818,333,437	327,333,375	491,000,062		491,000,062
2045	851,066,774	340,426,710	510,640,064		510,640,064
2046	885,109,445	354,043,778	531,065,667		531,065,667
2047	920,513,823	368,205,529	552,308,294		552,308,294
2048	957,334,376	382,933,750	574,400,625		574,400,625
2049	995,627,751	398,251,100	597,376,650		597,376,650
2050	1,035,452,861	414,181,144	621,271,716		621,271,716
2051	1,076,870,975	430,748,390	646,122,585		646,122,585
2052	1,119,945,814	447,978,326	671,967,488		671,967,488
2053	1,164,743,647	465,897,459	698,846,188		698,846,188
2054	1,211,333,393	484,533,357	726,800,036		726,800,036
2055	1,259,786,728	503,914,691	755,872,037		755,872,037
2056	1,310,178,197	524,071,279	786,106,918		786,106,918
2057	1,362,585,325	545,034,130	817,551,195		817,551,195
2058	1,417,088,738	566,835,495	850,253,243		850,253,243

Year	Benefit			Cost	Benefit-Cost
	Without	With	Without-With	With	
2059	1,473,772,288	589,508,915	884,263,373		884,263,373
2060	1,532,723,179	613,089,272	919,633,908		919,633,908
Total	28,036,623,438	11,214,649,375	16,821,974,063	1,800,000,000	15,021,974,063

Source: JICA Survey Team

(2) Qualitative Effects

Takhtaqoracha Pass section of the M39, which is the subject of RD-3 development, is a key mountain transportation route connecting Samarkand and the southern region, serving diverse human flows such as logistics, tourism, and commuting. The risk of falling rocks is extremely high along this section, and human casualties have actually occurred, making the need for disaster prevention measures extremely high.

The parallel tunnel road improvement plan is expected to take eight years to be put into service, and until then, the existing road will be the only means of passage for local residents and logistics providers. This project will ensure the safety and reliability of the road, minimize adverse effects on daily life and economic activities, and contribute to maintaining its function as an alternative route in the event of a disaster after it is put into service.

The project is also consistent with the Uzbekistan Strategy 2030's goals of "improving infrastructure safety" and "building resilient transportation networks," and is positioned as a priority development target from both disaster prevention and transportation policy perspectives.

8.4 Operation and Maintenance Management System (Organizational, Technical, and Financial Aspects)

After the priority projects are implemented, the operation and maintenance of the roads will be done under the regional offices of CR. Figure 8-66 shows the CR Related Organizations Organizational Chart, and Figure 8-67 shows the CR Regional Office Organizational Chart. For details on the organizational structure of the CR (Headquarters), see Section 3.3.2. Regional offices responsible for priority projects are under the jurisdiction of the CR Headquarters, and road maintenance companies (Road Maintenance Enterprises) responsible for maintenance and management are under the jurisdiction of the regional offices of CR. The staff of the regional offices of CR consists of approximately 20 persons, and the three regional offices in Samarkand Province (RO-3), Andijan Province (RO-1), and Fergana Province (RO-6, 7), where priority projects are implemented, each carries out its respective operations and maintenance.

Additionally, road maintenance companies responsible for maintenance and management are divided into regional (District) and specialized categories. Regional (District) companies primarily manage local roads and have limited ownership of large-scale equipment. On the other hand, specialized entities are responsible for the maintenance of arterial roads, own large-scale equipment, and have the capability to maintain both asphalt and concrete roads (for details on the equipment and capabilities owned by each

regional office, refer to Section 7.2.2). Furthermore, regional offices conduct inspections twice a year (spring and fall) and implement road repairs based on the results, and there are no issues with the operational maintenance management system or technical capabilities for priority projects.

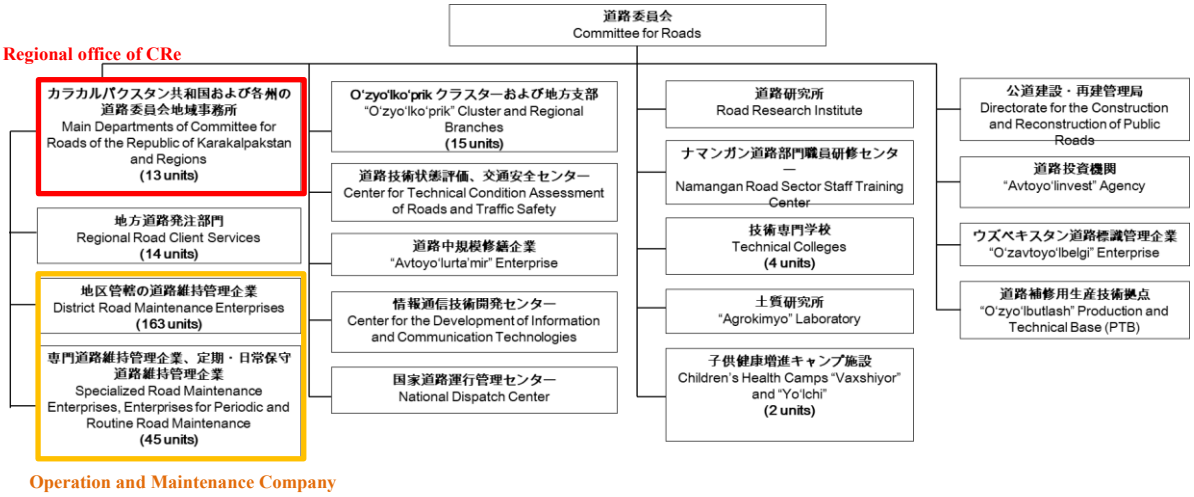
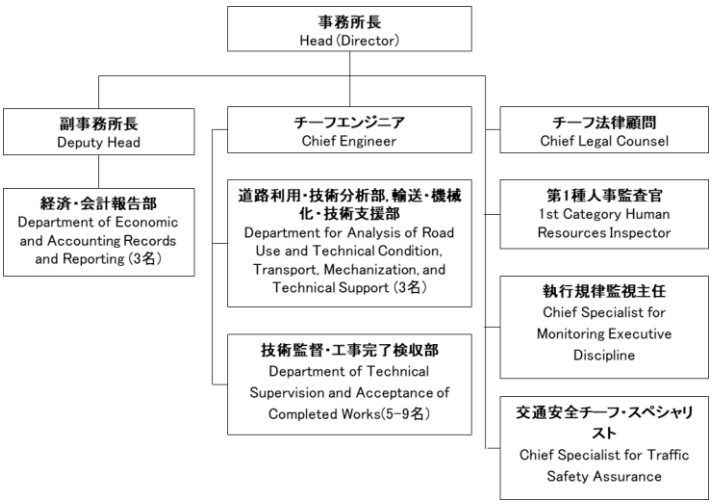


Figure 8-66 CR Related Organizations Organizational Chart



* Fergana Regional Office: Total staff: 22, Samarkand Office: Total staff: 21, Andijan Office: Total staff: 19

Source: JICA Survey Team

Figure 8-67 CR Regional Office Organizational Chart

Additionally, each regional office has allocated maintenance budgets for the priority projects RO-1 (A373) and RO-3 (A377) as shown below. The Fergana Office, which is responsible for the maintenance of RO-6 (A376) and RO-7 (D089), was unable to provide maintenance budgets. However, it conducts road inspections twice a year and implements road repairs as needed, ensuring that there are no financial issues regarding maintenance.

Table 8-40 Maintenance Costs for Priority Projects (Unit: Million soms)

	2020	2021	2022	2023	2024
Andijan Office	115,187.0	140,359.9	94,379.4	118,924.8	162,217.1
A373 Maintenance and management expenses (RO-1)	13,775.0	13,049.0	15,431.0	15,933.0	15,274.0
Samarkand Office	-	-	-	-	-
A377 Maintenance and Management Expenses (RO-3)	4,042.2	1,606.6	2,571.0	10,854.5	47,350.7
Fergana Office	-	-	-	-	-
A376 Maintenance and management expenses (RO-6)	-	-	-	-	-
D089 Maintenance and management expenses (RO-7)	-	-	-	-	-

Source: JICA Survey Team

8.5 Environmental and Social Considerations

8.5.1 Confirmation of Consistency with Systems, Permits, and Guidelines

Information on institutions related to environmental and social consideration systems, permits, and licenses in Uzbekistan was collected and verified. Necessary ecological permits and licenses were identified and categorized, and their consistency with the “JICA Guidelines for Environmental and Social Considerations” (promulgated in January 2022) was confirmed.

8.5.1.1 Environmental and Social Consideration System and Licensing System in Uzbekistan

(1) Current System and Issues

Uzbekistan's environmental impact assessment (EIA) system is governed by the "Law on Ecological Expertise," enacted in 2000, and Cabinet Resolution No. 541 from 2020. Projects eligible for assessment are classified into four categories based on their level of risk. Each category is required to undergo an EIA that corresponds to the specific risk level.

The State Environmental Expertise Center under the Ministry of Ecology, Environmental Protection and Climate Change (MEEPCC) is in charge of the review. The briefing session for residents will be held as a formality. Although some informational meetings for residents are held as a formality, there are still issues regarding information disclosure, substantive involvement of residents, and transparency of the review process.

(2) Introduction and Development of New Laws and Systems

The new environmental impact assessment law, “Law of the Republic of Uzbekistan ‘On Environmental Expertise, Environmental Impact Assessment and Strategic Environmental Assessment” (ZRU No.1036), enacted in 2023 and scheduled to come into force in 2025, introduces significant institutional enhancements. These include the mandatory implementation of public hearings, the incorporation of stakeholder opinions, the obligation to continue post-monitoring, and the explicit specification of impact mitigation measures. As a result, the decision-making process's transparency and public participation's

effectiveness are expected to improve significantly.

The EIA procedures shall be implemented per this new law as outlined below.

Table 8-41 EIA Procedure Flow

Step	Description	Responsible Organization / Notes
Step 1	Determination of EIA Category	Classification by MEEPCC (Ministry of Ecology, Environmental Protection and Climate Change)
Step 2	Preparation of EIA Document	Detailed study and report preparation by the project developer
Step 3	Public Consultation	Dialogue with residents and stakeholders to ensure transparency
Step 4	Submission and Payment of Review Fee	Digital submission and payment of the review fee to MEEPCC
Step 5	Review by National Environmental Experts	Standard review period: 25 working days (up to 3 months for complex cases)
Step 6	Conclusion and Approval	Approval validity: 3 years; Project will begin implementation

Source: Prepared by JICA Survey Team based on ZRU No. 1036

8.5.1.2 Consistency with the "JICA Guidelines for Environmental and Social Considerations" (January 2022)

Uzbekistan's EIA system (Decree No. 541 (2020)) was based on domestic law and had aspects of limited institutional development concerning international standards. However, the Law on Environmental Impact Assessment (ZRU No. 1036), effective in August 2025, further strengthens the harmonization with international standards. After applying the new law, both share the same basic structure with the JICA Guidelines for Environmental and Social Considerations, which are based on the obligation of prior assessment, public hearing procedures, and minimization of environmental risks. Although the basic EIA institutional framework can be considered consistent, gaps exist, as shown in Table 9.2. While the JICA Guidelines comprehensively address social aspects (resettlement, human rights, cultural impacts, etc.), the new law has an "environment, health, and transboundary" focus in its structure. Quantitative and ethical considerations for society are somewhat limited, and practical harmonized responses are required in JICA's requirements for resettlement, vulnerable groups, ethnic and gender considerations, occupational safety, and cultural assets.

Therefore, when implementing projects in Uzbekistan based on the JICA Guidelines for Environmental and Social Considerations, utilizing the Uzbekistan EIA system and taking complementary measures such as social surveys and consultation processes is essential.

Table 8-42 Gap Analysis on Environmental Impact Assessment (EIA)

Subject	JICA Guidelines (Revised 2022)	Uzbekistan's EIA System	Summary of Gaps and Proposed Measures
Obligation of Environmental Impact Assessment (EIA)	All projects with "moderate or greater" environmental and social impacts are subject to EIA.	Projects that affect construction and operation are subject to mandatory state review.	Generally consistent. However, confirmation of classification criteria is necessary.

Subject	JICA Guidelines (Revised 2022)	Uzbekistan's EIA System	Summary of Gaps and Proposed Measures
Strategic Environmental Assessment (SEA)	No explicit SEA obligation, but applicable when necessary.	Mandatory for national planning documents. Procedures are institutionalized.	Uzbekistan has a more advanced institutional framework.
Public Hearing and Public Participation	Emphasize early-stage resident participation. Respects principle of free, prior, and informed consent.	Previously limited and late-stage, the new law mandates hearings and institutionalizes ongoing monitoring. Disclosure of outcomes is also mandated.	The importance of early-stage participation should be explained, and agreement should be reached to conduct hearings during feasibility studies.
Greenhouse Gases（GHG）and Climate Change	Require consideration of low-carbon development and climate change at the principle level.	Mandatory to state GHG emissions and carbon neutrality indicators.	Quantitative requirements are more explicitly defined than in JICA guidelines.
Social Impact Assessment (SIA)	It covers various impacts, including human rights, cultural heritage, resettlement, labor, and indigenous peoples.	It focuses on health and environmental impacts, but social aspects are limited.	Propose the necessity and methodology for social considerations.
Resettlement and Compensation	Requires agreement with residents, consideration for vulnerable groups, and transparent procedures.	Compensation based on laws and decrees exists, but detailed social surveys and consultations are limited.	Propose measures to address the lack of institutional frameworks for conducting surveys necessary to prepare resettlement plans.
Cumulative Impact Assessment	Requires assessment in conjunction with other projects.	No clear legal requirement.	Discuss the risk of oversight and propose countermeasures.
Transboundary Impacts	Should consider impacts on neighboring countries, though not institutionally required.	Legal procedures are in place for projects affecting other countries.	Uzbekistan mandates transboundary EIA; JICA only requires consideration.
Biodiversity Conservation	Requires strict protection in line with IUCN standards and international treaties (e.g., Ramsar, World Heritage).	Basic assessment is conducted, but alignment with international standards is limited.	Support aligned with international protection standards.
Gender and Vulnerable Group Consideration	Consideration for women, persons with disabilities, etc., is essential.	Legal development is progressing (e.g., 2021 Gender Strategy), but unclear reflection in EIA.	Propose improvements to address insufficient institutional identification and support for target groups.
Independence and Transparency	Emphasizes third-party review and disclosure.	Reviews were conducted only within the government; there	Propose improvements for quality assurance and

Subject	JICA Guidelines (Revised 2022)	Uzbekistan's EIA System	Summary of Gaps and Proposed Measures
		were past issues with the report structure and transparency in review criteria. New law specifies expert independence.	independence.
Monitoring and Follow-up	Requires monitoring plans and reporting obligations.	Monitoring and reporting obligations were unclear under the current law but clarified in the new law.	Reach an agreement on follow-up frameworks.

Source: Prepared by JICA Survey Team based on ZRU No. 1036 and JICA Guidelines for Environmental and Social Considerations

8.5.2 Environmental and Social Considerations for Priority Projects

8.5.2.1 Land Acquisition and Resettlement

The number of households affected by priority projects and the estimated size of land acquisition are as follows. Measures to minimize, reduce, and mitigate environmental and societal impacts will be considered.

Table 8-43 Categorization of Priority Projects under the JICA Guidelines for Environmental and Social Considerations

Field	Project No.	Section	Category Classification
Roads (4 projects)	RO-3 (Samarkand)	36 km	B: Approximately 65 structures will be affected. Including 37 residences, but alignment adjustments can reduce the number.
	RO-1 (Andijan, no widening)	45 km	B: No land acquisition is required, as the project only involves rehabilitation.
	RO-7 (Fergana)	19 km	B: Approximately 38 structures will be affected, but alignment adjustments can reduce the number.
	RO-6 (Kokand)	31 km	B: Approximately 48 structures will be affected, but alignment adjustments can reduce the number.
	RO-10 (Takhtakoracha Tunnel project)	–	A: located in proximity to the Amankutan National Nature Park, and land alteration may cause significant impacts on the ecosystem, including endemic and endangered species.
Bridges (3 regions)	Andijan	–	C: No houses are subject to relocation nearby; no nature reserves or protected areas are present.
	Fergana	–	
	Samarkand	–	
Road Disaster Prevention	RD-3 (Takhtaqoracha Pass – Rockfall Protection)	30 km	C: Small-scale construction with limited impacts on the environment, residents, and traffic; located a sufficient distance from protected areas.

Source: JICA Survey Team

8.5.2.2 Notable Issues Regarding Climate Change, Infectious Disease Control, Gender, Participatory Development/Consideration for Persons with Disabilities, Social Systems and Norms, Human Well-being, and Human Rights

(1) Climate Change

In Uzbekistan, assessing environmental impacts and climate change-related risks is partially mandatory before project implementation, particularly for large-scale road projects. From now on, evaluating contributions to climate change mitigation is expected to become increasingly important.

1) Adaptation Measures (disaster risk reduction)

- RD-3 Project: This project, aimed at rockfall protection using disaster prevention nets, is positioned as an adaptation measure to climate change.
- Other Road Projects: Even in road rehabilitation and widening projects, designs are required to consider climate risks such as rising temperatures and flooding. Reinforced shoulders, bridges, and drainage structures contribute to building a road network that is resilient to the impacts of climate change.

In addition, as mentioned in Section 2.2.3, Uzbekistan is exposed to seismic risks, and earthquake resistance is also considered an essential factor during the design phase.

2) Mitigation Measures

Uzbekistan has set a target in its Nationally Determined Contribution (NDC) to reduce greenhouse gas (GHG) emissions per unit of GDP by 35% compared to 2010 levels.

- The road sector is considered one of the key areas for improving energy efficiency and reducing emissions.
- Although no specific numerical targets have been set exclusively for the road sector, enhancing and restructuring road transport efficiency is emphasized to curb GHG emissions.
- In the four targeted road projects, improvements through rehabilitation and widening works are expected to contribute to GHG emission reductions by reducing idling and improving driving efficiency.

(2) Infectious Disease Control

During the construction phase, establishing construction camps may lead to temporary land use changes and potentially cause environmental and social issues. The main concerns include:

- Environmental pollution caused by inadequate sanitation facilities and improper management of solid waste and wastewater
- The risk of communicable diseases (such as sexually transmitted infections and HIV/AIDS) being transmitted from construction workers to local residents due to a lack of health management systems

To address these risks, it is necessary to continuously monitor the implementation of health and safety programs at the camp sites. In addition, the provision of information and educational campaigns on sexually transmitted infections and HIV/AIDS must be explicitly stated in civil works contracts and effectively implemented.

(3) Gender and Vulnerable Group Considerations

Based on the issues identified in JICA's reference material for gender mainstreaming in the transportation sector—namely, the lack of reflection of users' needs in policies and project planning, unequal compensation and impacts associated with infrastructure development, and occupational segregation as well as concentration in non-regular and low-wage employment—this part will examine gender-specific challenges and considerations particular to road projects in Uzbekistan. It will also analyze the underlying factors of these challenges and consider priority measures and monitoring indicators.

Although gender equality is guaranteed by law in Uzbekistan, women's rights are sometimes constrained by customary practices. The government has introduced various initiatives to protect women's rights and promote economic independence[5]. In implementing road projects, it is essential to ensure that women are not placed at a disadvantage in terms of land rights, safety of mobility, and employment opportunities.

Table 8-44 Major Gender and Vulnerable Group Challenges and Proposed Measures

Gender Issue	Situation in Uzbekistan	Examples of Measures
Unequal impacts of infrastructure development	In many cases, land titles are held only by men, limiting women's opportunities for compensation and participation in decision-making.	Verification of women's ownership and usage rights, implementation of compensation support for women, and reflection in resettlement action plans.
Insufficient reflection of user needs	Lack of street lighting at night threatens women's safety during travel.	Incorporating women users' opinions in the installation of streetlights, sidewalks, and pedestrian crossings.
Occupational segregation and unequal employment opportunities	Road construction and maintenance workers are almost exclusively men. Due to cultural backgrounds and inadequate workplace environments, participation of women engineers and on-site workers is limited.	Ensuring women's input in road project planning and policy, and promoting employment opportunities and workplace environments that enable women's participation.

Source: JICA Survey Team

At the implementation stage, it is important to develop a policy to reflect women's opinions through public consultations and to provide gender-sensitive guidelines for procurement entities and contractors in order to address these gender issues. It is also recommended to establish indicators—such as policies, organizational structures of implementing agencies, employment practices, and participation in decision-making—and to conduct appropriate monitoring.

(4) Notable Points on Participatory Development, Social Systems and Norms, and Human Rights

As stated in Section 8.4.1, Uzbekistan's EIA legislation mandates public hearings for projects expected to have significant environmental impacts. These hearings should be conducted with the Ministry of

[5] https://www.fao.org/faolex/results/details/fr/c/LEX-FAOC208957/?utm_source=chatgpt.com "Strategy for achieving gender equality in Uzbekistan until 2030" (2021)

Environment and local administrative bodies, such as regional, district, and community (e.g., Mahalla) authorities.

Table 8-45 Key Considerations from the Perspective of Participatory Development

Consideration	Example Measures
Ensuring Stakeholder Participation	Ensure the participation of residents, especially those directly affected, and vulnerable groups (e.g., women, ethnic minorities, the poor) in planning and decision-making processes. Respect community-based decision-making structures (e.g., village leaders, assemblies).
Transparency and Legitimacy of the Consensus-Building Process	Document the implementation and results of information disclosure, public hearings, and opinion-gathering methods (e.g., workshops, interviews).
Social Acceptability	Evaluate whether the local community accepts the project and whether trust has been built through participatory processes.
Respect for Human Rights and Remedy Mechanisms	Prevent forced resettlement; establish grievance redress mechanisms (GRM).

Source: JICA Survey Team

To describe matters of special note in terms of "social systems and norms," "people's well-being, and "human rights" in priority projects, the following elements are evaluated not merely in terms of impact assessment but also in terms of understanding and considering the social structure of the target area, improving the quality

1) Land System

Informal inheritance (oral agreements, unregistered residence, etc.) is widespread in Uzbekistan, especially in rural areas. Due to traditional patriarchal values and religious practices, there are cases where land is used without legal rights, especially by women. In recent years, with the transition to a market economy, institutional arrangements have been developed, but in principle, the concept of "right to use" (lease) rather than "ownership" of land is fundamental. It should be noted that the State Real Estate Rights Registration Law (No. ZRU-803)[6], which came into effect in 2022, has made progress in registering and clarifying the right of use. While clarification of use rights, registration obligations, and procedures for transferring rights has been legally established and is reducing risks to informal inheritance and residence, there are still struggles to reach consensus on sites that take into account the social status and roles of women, elders, religious and ethnic minorities, and other groups.

2) Development of Border Roads from the Perspective of People's Well-being

Border road development contributes not only to mere physical benefits but also to the promotion of cross-border exchanges of people and goods. Improved transport access increases convenience for

[6] https://lex.uz/docs/6907412 Law of the Republic of Uzbekistan on state registration of rights to real estate(2022)

commuting, schooling, medical care, and shopping, but in the process, consideration of environmental impacts and social compensation is also essential. Measures to protect the living environment are required, such as compensation for businesses and households forced to relocate their shops, replanting of trees and afforestation along roads, and maintenance and replacement of irrigation canals. The following section shows the impact on well-being for each priority maintenance project.

RO-3 (Samarkand)

This road serves as a key commuter route to and from the city of Samarkand and is an important trunk road that connects the city to the border with Tajikistan. There is a significant flow of coal imports from Tajikistan along this route. The government of the Tayrok district has submitted a request for the rehabilitation of this road. The planned rehabilitation and widening of the road is expected to greatly enhance travel convenience for local residents and contribute to the development of the areas along the route.

An agro-processing plant is located near RO-3, and plans for an industrial park are underway, which means the road is expected to serve as an industrial route. The villages along this road, known for thriving viticulture and dairy farming, are set to be designated as tourist villages[7]. This initiative aims to boost regional tourism by encouraging visitors to stay in the area. Additionally, the ruins of Penjikent, a UNESCO World Heritage site, are situated in Tajikistan, approximately 15 km from the border. These ruins are remnants of an ancient Sogdian city and are occasionally included in itineraries for tourists visiting Samarkand. Improved access to these cultural resources will further promote tourism in the region. On the Uzbek side of the border, there is a significant population of Tajiks, and the number of cross-border marriages is on the rise.

RO-1 (Andijan)

This trunk road from China to Tashkent via the Kyrgyz border city of Osh has a high concentration of freight traffic, including large trailers. Along the targeted route, there is also a concentration of food processing, textile, and chemical factories, small factories of traditional crafts, amusement facilities, resorts, and an airport.

In the city of Asaka, south of Andijan, Central Asia's first car assembly plant was established and is now state-owned and operated as UzAuto Motors. The city hosts automobile parts-related factories and is a concentration of the automobile industry. In addition, the textile and apparel industry is also located here, and there are plans for a free economic zone with Chinese capital. An industrial structure based on two major industries, vehicles and textiles, is being established.

There are reports of an increase in the number of Kyrgyz visitors to Andijan, as there are better entertainment and medical facilities in Andijan than in Osh across the border on the Kyrgyz side. However, regarding road safety, limited traffic signals and pedestrian crossings make crossing difficult for residents at specific points. In congested border areas, the construction of pedestrian bridges is being

[7] Information from the Samarkand Tourism Committee interview

considered.

Changes are also being made to the previously strict border controls. Previously, Uzbek nationals needed a passport to enter Kyrgyzstan, but from 2023 onwards, only a Uzbek identity card is required to travel between Andijan and Osh. Furthermore, in June 2025, a reciprocal visa waiver agreement between China and Uzbekistan came into force, allowing Chinese nationals to stay in the country for up to 30 days[8].

This relaxation of border controls has stimulated shopping and transit trade by Kyrgyz and Chinese nationals, creating new business opportunities in border markets and bazaars, as well as in the commercial sector, such as the food and beverage and transport industries. At the same time, there are concerns about competitive pressure on domestic merchants in Uzbekistan as Chinese and Kyrgyz merchants bring in cheaper goods.

RO-7 (Fergana)

This road links the Kyrgyz border with the city of Quvasay on the Uzbek side and the medium-sized town of Kyzyl-Kiya in the Batken Region on the Kyrgyz side. Fergana is an agricultural distribution center with an airport and railway, while Quvasay is an industrial town based on cement, ceramics, and textiles. Old Soviet-style housing complexes also remain.

Border crossings are now only possible with an identity card, and more Kyrgyz citizens are entering the country in search of entertainment, medical care, and other services. Shared light vans, known as 'damas,' operate at the border, providing easy access to the city of Fergana.

RO-6 (Kokand)

This road connects the border city of Kanibodom in Tajikistan. However, both Uzbekistan and Tajikistan require passports for passage, and unlike the border with Kyrgyzstan, free travel is restricted. Commercial activity near the border is limited, with only a few furniture and general stores on the Uzbek side. In contrast, the Tajikistan side features a mountainous region that, although not suitable for large trucks and international logistics, serves as a vital route for local residents and facilitates small-scale trade.

Regional comparison and significance of maintenance

The Fergana and Andijan Regions of Uzbekistan are more populated and have a stronger industrial base, better infrastructure development, and greater trade activity compared to the Sugd Region of Tajikistan and the Batken and Osh Regions of Kyrgyzstan. The latter regions face topographical challenges due to their mountainous terrain and border dispute history. Additionally, both countries heavily rely on remittances from labor migrants working in Russia. Developing border roads in these areas will provide socio-economic benefits to neighboring countries by improving logistics and creating more employment opportunities. This initiative is crucial for enhancing the well-being of the local populations.

[8] https://j.people.com.cn/n3/2025/0515/c94475-20315460.html

8.5.3 Environmental and Social Considerations for the Takhtaqoracha Tunnel Construction Project RD-3：M39 "Almaty- Bishkek-Tashkent- Shahrisabz - Termez "(1115-1145 km)

This tunnel construction project connects the two UNESCO World Heritage cities of Samarkand and Shahrisabz. The project aims to improve the safety and convenience of a transport corridor with high historical and tourist value, as well as to improve the quality of life of the local population, stimulate the economy, and reduce environmental impact. In terms of ensuring traffic stability as a means of bypassing mountain passes, where accidents are frequent in winter, the project is of high social and economic significance and contributes to sustainable regional development.

8.5.3.1 Economic Impact

Bypassing the mountain pass will reduce transport distance and time, improve logistics efficiency, and significantly reduce transportation costs. Allowing currently restricted large vehicles to pass will revitalize the movement of people and goods between regions, leading to an expected expansion of economic activity. Furthermore, in terms of tourism, improved access between Samarkand and Shakhrisabz will enhance tourist circulation, generating positive ripple effects on the regional economy. The construction and maintenance of the tunnel will also contribute to local job creation.

8.5.3.2 Social Impact

The current mountain pass along the M39 is steep and winding, causing frequent traffic accidents during snow and icy conditions. The construction of the tunnel will improve traffic stability and ensure reliability for commuting and emergency transportation. In addition, the shortened transit time will facilitate access to medical and educational services in Samarkand, especially for residents on the Kashkadarya side, and will reduce social isolation. In the event of a disaster, the route is expected to function as an alternative evacuation and relief route.

8.5.3.3 Environmental Impacts

Tunnel construction has the potential to reduce the environmental footprint of infrastructure if appropriate design and consideration are given. Eliminating the need to travel on steep gradients will reduce emissions and fuel consumption, and the impact on wildlife habitats and migration routes can be minimized as the road no longer passes over ridges and valleys. Noise and dust will also be concentrated in the tunnels, reducing the environmental impact on residents and tourist destinations along the road.

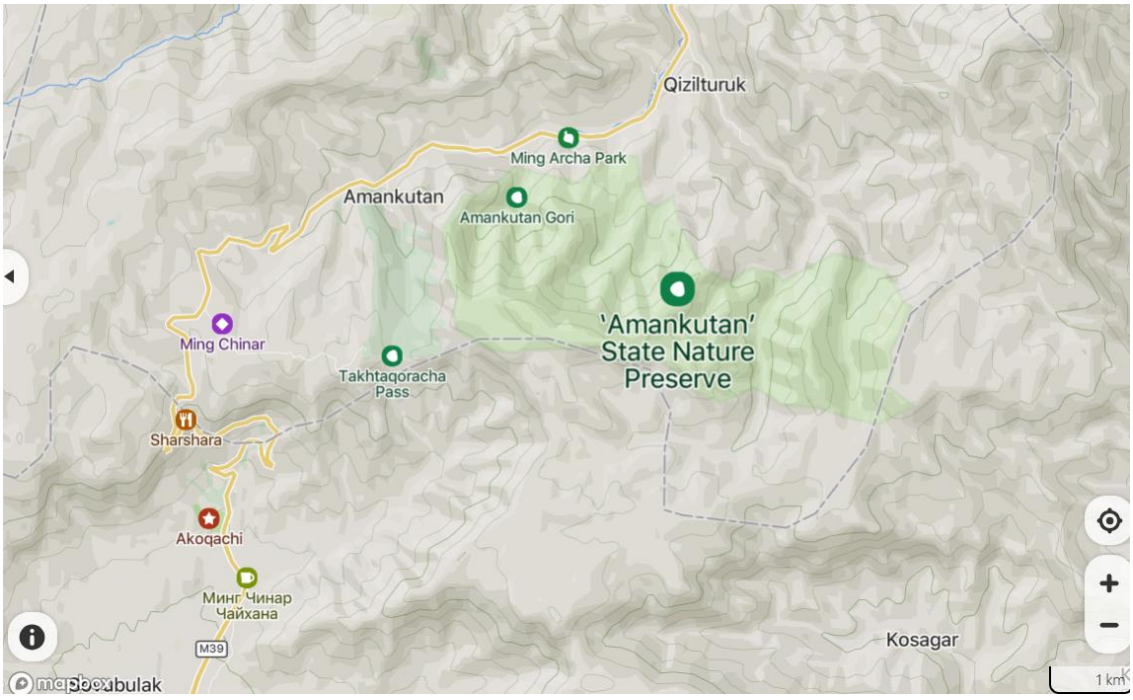
However, the following risks also exist and require an Environmental Impact Assessment (EIA) and countermeasures.

Risk Category	Main Concerns	Proposed Measures
Impact on Ecosystems	Destruction of natural forests due to tunnel portals and access roads; disruption to the movement of endemic species and migratory birds	Design of ecological corridors (eco-paths), transplantation, and reforestation efforts
Changes to Groundwater Systems	Impact on groundwater veins due to excavation; depletion of springs and wells; risk of landslides	Hydrological surveys, installation of water-blocking structures, and introduction of drainage treatment systems
Environmental	Water and soil contamination due to dust, waste, and	Waste management plan,

Risk Category	Main Concerns	Proposed Measures
Pollution during Construction	hazardous substances; noise and vibration	restrictions on working hours, and installation of cleaning facilities
Impact on Culture and Landscape	Damage to historical and natural landscapes; potential impacts on cultural assets (e.g., Aman Kutan Cave)	Landscape-conscious design, coordination with the Ministry of Culture, and support for preservation

Source: JICA Survey Team

The project area is also close to the Aman Kutan National Natural Park, which was designated in 2022 and is an important area for biodiversity conservation and tourism revitalization. In this area, the giant tulip, an endemic plant species classified as Near Threatened (NT) by the IUCN, and the Fosteriana tulip, a non-endemic but endangered species, are found. In terms of fauna, the gyrfalcon, a non-endemic endangered species that undertakes partial seasonal migration, and the cinereous vulture, also an endangered species, inhabit the area[9]. Measures to avoid or mitigate impacts on the natural environment and cultural assets in the area need to be carefully designed in cooperation with relevant agencies.



Note: The map labels this area 'State Nature Preserve,' but the correct designation is 'National Nature Park.'
Source: https://mapcarta.com/W1120927661

Figure 8-68 Location Map of Aman Kutan Nature Park

8.6 Implementation Schedule of Priority Projects

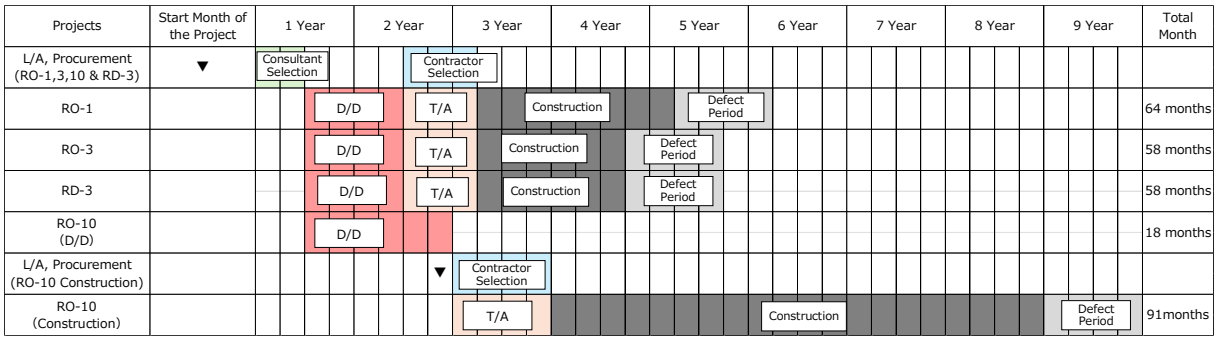
The project implementation schedule of five priority projects is shown in Table 8-46. The schedule shows the estimated period required from the start of each project. RO-1 is estimated to take 64 months, RO-3, RO-6, and RD-3 are estimated to take 58 months, and RO-7 is estimated to take 52 months. Additionally, the tunnel project RO-10 is estimated to take 109 months. Following the expiration of the

[9] https://cyberleninka.ru/article/n/geoekologicheskoe-sostoyanie-prirodnogo-parka-amankutan-i-mery-po-ego-ohrane_, https://www.iucnredlist.org/search

defect period for all projects, an additional 6 months will be required for final payments and other procedures to complete the projects. Regarding RO-10, since the project length has not been finalized, the total project length, including the tunnel section of approximately 6 km and connecting roads, is estimated at approximately 11 km.

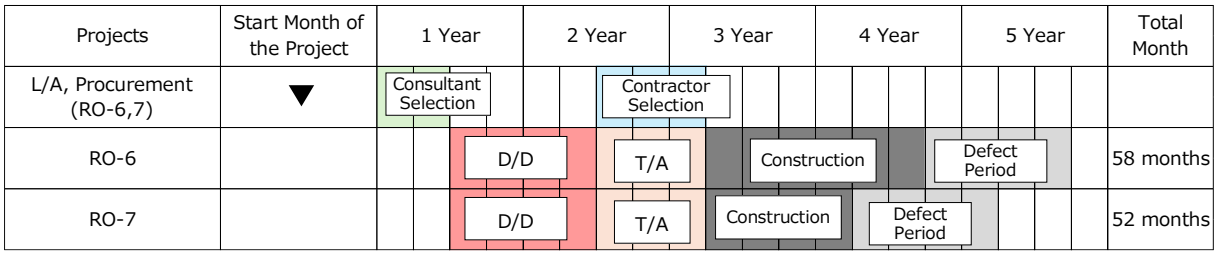
The project schedules for RO-1, RO-3, RO-10 and RD-3, which have high priority for the implementation of the Preparatory Survey, are shown in Table 8-46, and the project schedules for RO-6 and RO-7 are shown in Table 8-47.

Table 8-46 Project Implementation Schedule for RO-1, RO-3, RO-10 and RD-3



Source: JICA Survey Team

Table 8-47 Project Implementation Schedule for RO-6 and RO-7



Source: JICA Survey Team

8.7 Japanese Technologies Potentially Applicable

Potentially applicable Japanese technologies for the priority projects selected in the Survey are shown in Table 8-48. An overview of each technology is provided in the following sections.

Some CR officials had experienced the site observation of the curtain nets and rock fences in Japan, which are planned to be applied in the candidate projects of the road disaster prevention field, and have been expecting the application of these technologies to the projects.

Table 8-48 Potentially Applicable Japanese Technologies

Subsector	Japanese Technology	Applicable Situation	Applicability in the Priority Projects
Road	Slip Form Pavers	Concrete Pavement	RO-1,3,6,7,10
	Early Strength Concrete Pavement (1 DAY PAVE)	Concrete Pavement	RO-1,3,6,7,10
Tunnel	Probing Method in Front of Tunnel Facing	Tunnel Excavation	RO-10

Subsector	Japanese Technology	Applicable Situation	Applicability in the Priority Projects
	On-Site Visualization of Geological Information with Projection Mapping	Tunnel Excavation	RO-10
	Jet Fan with Inverter Control for Ventilation System	Tunnel Ventilation	RO-10
Bridge	Weathering Steel	Bridge steel	RO-1,3,6,7
	Integral Abutment	Bridge Structure	RO-1,3,6,7
	Prefabricated Construction Method	Bridge construction method	RO-1,3,6,7
	Countermeasures against scouring	Scour protection measures	RO-1,3,6,7
	Terre Armée	Three-dimensional technology for narrow spaces	RO-3
Disaster prevention	Non-frame Construction Method: Slope Reinforcement	Slope Reinforcement	RO-10
	Curtain Net: Rockfall Protection	Rockfall Protection	RD-3
	Mighty Net: Rockfall Prevention	Rockfall Prevention	RD-3
	Rock Fence: Rockfall protection	Rockfall Protection	RO-10

8.7.1 Applicable Japanese Technologies for Road Project

8.7.1.1 Slip Form Pavers

Unlike the conventional formwork method, this machine is used for concrete pavement to continuously construct concrete pavements of the same cross-section without setting up the formwork. The construction machine for concrete pavement. The advantages are listed below.

- No need to set up and remove formwork (saving labor and manpower)
- Fast construction speed (shorter construction period and shorter traffic restriction)
- High surface smoothness (ensures drivability)



Source: Obayashi Road website

Figure 8-69 Slip Form Pavers

8.7.1.2 Early Strength Concrete Pavement (1 DAY PAVE)

By producing concrete with a low water-cement ratio (approx. 35 %), vehicles can pass over the pavement in as little as 15 hours and as long as 24 hours. (concrete paving normally takes 2 to 3 weeks). The advantages are listed below.

- High density and durability
- Early opening to traffic (reduced traffic restrictions)



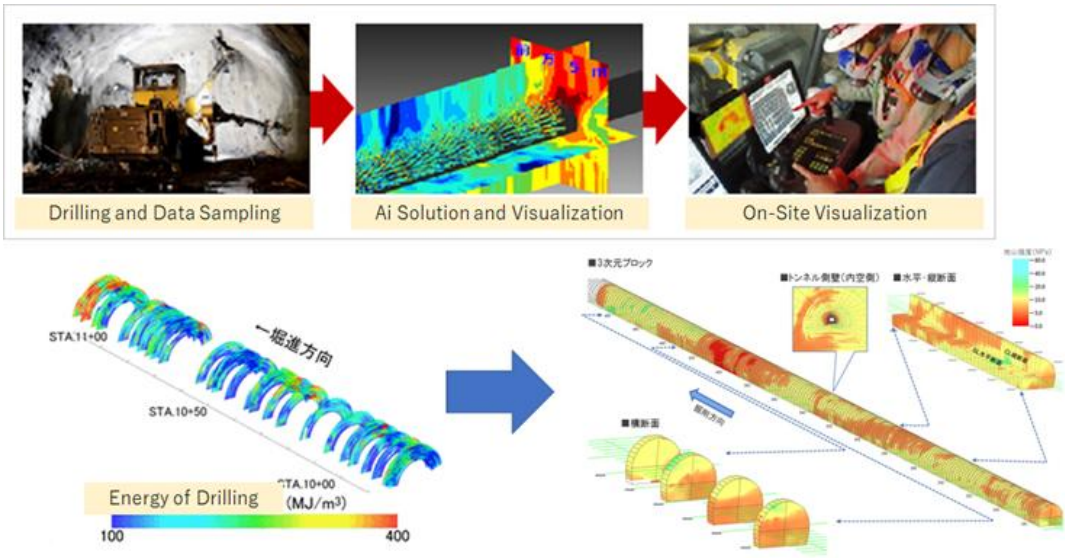
Source: Cement Association website

Figure 8-70 1 DAY PAVE Construction Example

8.7.2 Applicable Japanese Technologies for Tunnel Project

8.7.2.1 Probing Method in Front of Tunnel Facing

It is a technology to know the properties of the ground behind the cut face, which could cover about several meters to 10 meters, by attaching a sensor to a rock drill of a drill jumbo and measuring the drilling energy. In most cases, there are more than 100 blasting holes at a time. Since the measured data is immediately analyzed by AI and returned to the face work, sudden spring water and geological defects can be grasped in advance, which leads to improvement of safety of face work and improvement of work efficiency, such as adjustment of drilling pattern.

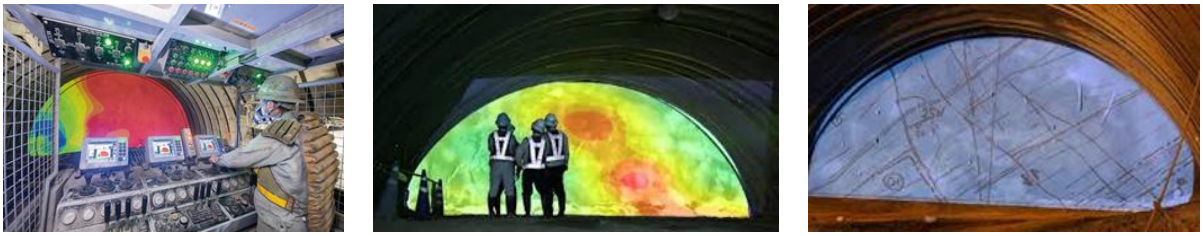


Source: JICA Survey Team

Figure 8-71 Probing Method in Front of Tunnel Facing and Excavation Support System with Visualization of AI Solution

8.7.2.2 On-Site Visualization of Geological Information with Projection Mapping

Observing and understanding rock types, cracks and joints, and bedrock strength at the face of a mountain tunnel is an advanced technique that requires high skill. In more cases, the face is covered with shot-concrete immediately after blasting and shaving, so it is not possible to see the previous face in the next work stage. This is an on-site visualization technology that utilizes the results of AI analysis of the face forward exploration and face observation records described above, and projects them onto the actual face.



Source: JICA Survey Team

Figure 8-72 On-Site Visualization of Geological Information on Cutting Face

8.7.2.3 Jet Fan with Inverter Control for Ventilation System

One recommended item for individual equipment is the jet fan with inverter control. It is a facility applied to control the movement of smoke in an emergency when a fire breaks out due to an accident inside a tunnel. Normally, it is used to eliminate exhaust gas from vehicles like a general jet fan, but in emergency operation, the jet fan operating speed is adjusted according to the smoke concentration to be excluded, enabling effective operation. This type of jet fan can be expected to reduce operating costs and maintenance costs during normal operation.

8.7.3 Applicable Japanese Technologies for Bridge Project

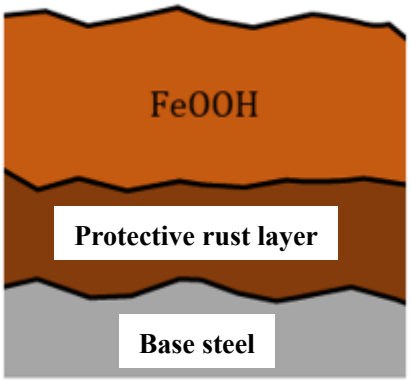
The following Japanese technologies are applicable to the bridge projects identified as candidate projects in this study.

8.7.3.1 Weathering Steel

Corrosion is controlled by forming a dense protective rust layer. The advantages are listed below.

- No painting is required, which reduces maintenance effort





Source: Japan Iron and Steel Federation, Nippon Steel Technology Corporation website

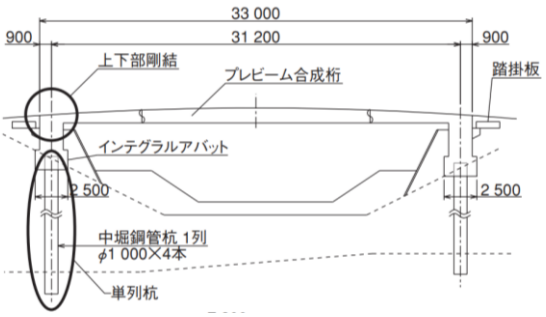
Figure 8-73 Example of Application of Weathering Steel

8.7.3.2 Integral Abutment

Rigid connection at the top and bottom eliminates the need for accessories such as bearings and expansion joints. The advantages are listed below.

- By eliminating accessories such as bearings, bridge fall prevention devices, and expansion joints, both initial and maintenance costs can be reduced
- Excellent seismic performance





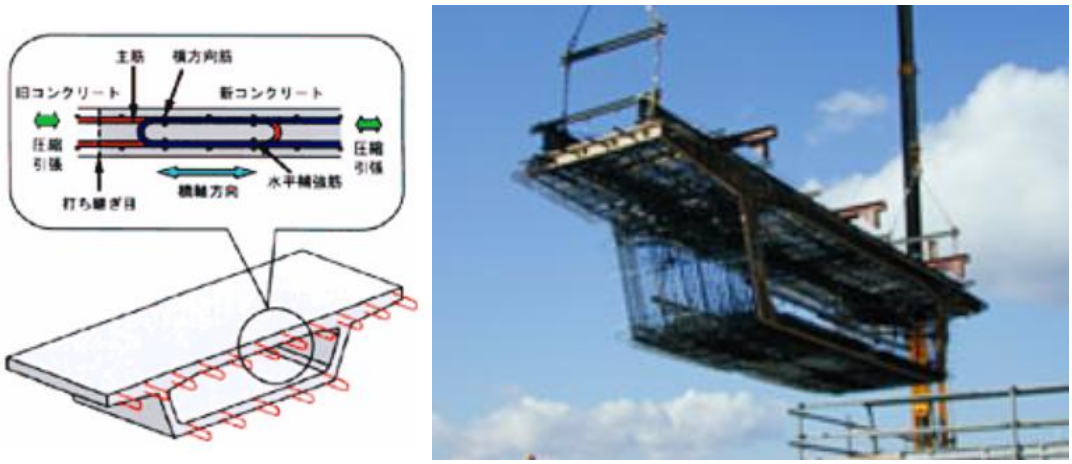
Source: Kawada Industries Co., Ltd. website

Figure 8-74 Example of Integral Abutment Application

8.7.3.3 Prefabricated Construction Method

"Prefabrication" refers to the process of pre-processing and assembling structural components in a factory. This construction method enables full prefabrication of reinforcement for each block by applying loop joints to cast-in-place Prestressed Concrete (PC) bridges constructed in block segments. The advantages are listed below.

- Improved construction efficiency
- Shortened construction process
- Enhanced cost-effectiveness



Source: Sumitomo Mitsui Construction Co., Ltd. website

Figure 8-75 Prefabricated Construction Method

8.7.3.4 Fabriform (Countermeasures Against Scouring)

A concrete forming method in which fluid concrete or mortar is pumped into mat-shaped fabric formwork made of high-strength synthetic fibers. The advantages are listed below.

- Compared to conventional cast-in-place concrete or precast block construction, it can be executed with fewer workers and in a shorter time
- Excellent in shortening the construction period and cost-effectiveness
- Ensure stable quality
- High initial strength allows for a shorter curing period



Source: Asahi kasei Advance, website

Figure 8-76 Example of Fabriform Work

8.7.3.5 Terre Armée

A reinforced soil wall construction method in which strip-shaped steel reinforcements (strips) are laid within the embankment, creating a stable structure through the frictional resistance between the soil and the strips. The advantages are listed below.

- Vertical embankment construction is possible, allowing embankment work in narrow areas.



Source: Hirose Reinforced Soil Co., Ltd. website

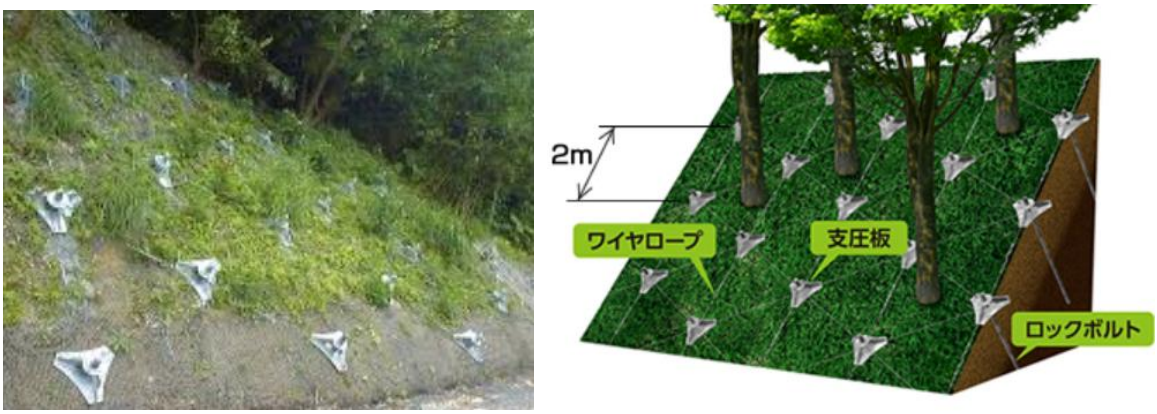
Figure 8-77 Example of Terre Armée Construction

8.7.4 Applicable Japanese Technologies for Road Disaster Project

8.7.4.1 Non-frame Construction Method (Slope Reinforcement)

Cutting down trees on natural slopes is not required, and the slopes are stabilized by driving rock bolts at regular intervals. The advantages are listed below.

- Reduction in cutting and shaping of slopes (cost reduction)
- Slope reinforcement that takes into consideration the landscape and environment after construction (environmental conservation)



Source: Non-Frame Construction Method Association website

Figure 8-78 Example of Non-Frame Construction Method

8.7.4.2 Curtain Net (Rockfall Protection)

A net made of wire rope and wire mesh absorbs the energy of falling rocks. It is a highly energy-absorbing protective structure and has high durability.

- It can be applied to areas where the space between the road and the slope is narrow or where the terrain is complex.
- Since there is a pocket space between the slope and net, it can respond to rockfalls that occur at high places.



Source: Tokyo Rope MFG. website

Figure 8-79 Example of Curtain Net Installation

8.7.4.3 Mighty Net (Rockfall Prevention)

A special wire mesh is attached to the slope to prevent and hold down the initial movement of boulders on the slope.

- Applicable to slopes of various geological types
- Reduces erosion of soil and sand slopes, and stabilizes the slopes



Source: Tokyo Rope MFG. website

Figure 8-80 Example of Mighty Net Installation

8.7.4.4 Rock Fence (Rockfall Protection)

A protective fence that absorbs the high-energy of falling rocks through the plastic deformation characteristics of wire mesh, wire ropes, and supports.

- Easy installation and assembly
- Since the base plate type uses anchors to secure existing retaining walls or stable bedrock, large-scale retaining wall construction or excavation is not required



Source: Tokyo Rope MFG. website

Figure 8-81 Example of Rock Fence Installation

8.8 Prerequisites for Project Implementation and External Conditions and Considerations Required to Achieve Project Objectives

8.8.1 Prerequisites

The prerequisites for project implementation are listed below.

- Confirmation of Uzbekistan's ability to repay the loan
- Establishment of the organizational and human resources structure of the CR, which will serve as the project implementation agency on the Uzbekistan side (confirmation that there are no issues regarding the post-project implementation maintenance and management structure)
- Completion of land acquisition prior to project commencement and completion of utility relocation affecting the project
- Completion of environmental and social consideration-related procedures (EIA, procedures related to resident relocation, etc.)

8.8.2 External Conditions

The external conditions necessary for achieving the project objectives are listed below.

- Political, economic, and fiscal stability in Uzbekistan
- Continuation of the organizational structure of government agencies and committees related to road

infrastructure development, and continuation of the current road infrastructure development policy

- Stability of public order in Uzbekistan

8.8.3 Points to Note

The points to note regarding the implementation of the project are as follows.

- Strict prevention of corruption in procurement
- Consideration of risks associated with increases in project costs due to inflation or exchange rate fluctuations
- Confirmation of consistency between JICA guidelines and Uzbekistan's legal system regarding environmental and social considerations
- Confirmation of changes in road development policies due to changes in government or presidential decrees

9 DRAFT PLAN FOR PREPARATORY SURVEY FOR PRIORITY PROJECTS

9.1 Traffic Volume Survey and Environmental Condition Survey

Regarding priority projects, the primary information to be collected through traffic volume surveys and environmental condition surveys in the preparatory survey is as follows.

9.1.1 Traffic Surveys

In this study, both qualitative and quantitative insights into freight traffic and logistics structures were obtained at multiple locations. However, to accurately grasp overall traffic demand in the target areas and conduct reliable traffic demand forecasts in the future, more comprehensive and systematic traffic surveys will be necessary. The following are the key surveys recommended for prioritized implementation moving forward.

9.1.1.1 Traffic Count Survey

This is a basic survey to understand road usage conditions by counting the number of vehicles passing by vehicle type and time slot. When conducted periodically, it enables identification of long-term trends such as peak periods, day-of-week variations, and year-on-year changes. In the future, the introduction of embedded or roadside traffic counters should also be considered.

9.1.1.2 Passenger Vehicle Occupancy Survey

This survey observes the actual number of passengers in private cars and buses to evaluate transport efficiency and occupancy rates of public transportation. Combined with the results of the traffic count survey, it enables understanding and demand analysis of passenger movements on a per-person (rather than per-vehicle) basis. In many cases, passenger occupancy observations are conducted together with the roadside OD interview surveys described below.

9.1.1.3 Traffic Count Survey at Major Intersections in Surrounding Areas

This survey records traffic flows at major intersections within the project area. It contributes not only to improving the accuracy of future traffic forecasts but also to identifying potential detour routes during construction, determining congestion conditions, and analyzing traffic flows—such as optimizing signal controls, improving intersections, and identifying intersection-specific bottlenecks. Vehicle inflows and outflows are counted by lane and direction, enabling intersection capacity analysis and congestion evaluation through simulation.

9.1.1.4 Travel Time Survey between Key Points

This survey captures actual travel speeds along the target road sections and is effective in identifying operational bottlenecks and quantitatively evaluating the effects of improvement works (e.g., speed increases before and after construction).

Using the Floating Car method, passenger cars or buses drive the designated sections round-trip several times during the morning, midday, and evening on weekdays. GPS is used to log the actual travel paths and timestamps. In addition, field observations are made to record causes of reduced speed, such as congestion, poor pavement, intersections, or traffic accidents.

Bus-based measurements are particularly useful for identifying operating characteristics and speed-reducing segments for heavy or large vehicles.

9.1.1.5 Roadside OD Interview Survey

This survey targets general vehicles (passenger cars, taxis, buses, etc.). At safe roadside points along the target roads, a sample of passing vehicles is stopped, and the driver (or passengers in the case of buses) is directly interviewed regarding origin, destination, travel purpose, and number of passengers.

To calculate sampling rates, traffic volume counts are conducted simultaneously. This enables the development of passenger OD matrices, analysis of interregional travel patterns, and construction of traffic demand forecasting models.

9.1.1.6 Cargo OD Interview Survey

This survey aims to understand international logistics structures by interviewing drivers of freight vehicles, especially those crossing international borders. It captures data such as origin and destination (city/country), type of goods, cargo volume, and transport method. While this survey was implemented as part of the current study, it is desirable to repeat it for a more detailed analysis of seasonal variations and cargo composition.

Depending on the customs office's business hours, the survey should be conducted over 16 hours per day at key border crossings (e.g., Kyrgyz and Tajikistan borders), along with simultaneous vehicle counts. By identifying metrics such as empty vehicle ratios, trailer utilization rates, and commodity compositions by direction (import/export), the survey will support evaluation of main logistics corridors, value-of-time analysis, and prioritization of infrastructure development.

9.1.2 Environmental Condition Survey

The proposed environmental condition surveys to be carried out in the preparatory survey are shown in Table 9-1.

Table 9-1 Proposed Environmental Condition Surveys in Preparatory Survey for Priority Projects

Surveys	Methodology	Priority Projects					
		RO1	RO3	RO6	RO7	RO10	RD3
Topographic Survey	- Plan Survey (1/1000) - Longitudinal Topographic Survey (H=1/1,000, V=1/200) (Note: Excluding RD-3) - Transverse Topographic Survey (1/200)	✓	✓	✓	✓	✓	✓
River Survey	- River Longitudinal Topographic Survey (H=1/1,000, V=1/200) - River Transverse Topographic Survey (1/200)	✓	✓	✓	✓		
Geological Survey	<u>Road</u> - Test Pit (Specific Gravity, Natural Moisture Content, Grain Size Distribution, Compaction Curve, CBR, Soil Classification, etc.) - Auger Boring (Confirmation of Geological Structure and Conditions by Core Sampling)	✓	✓	✓	✓	✓	
	<u>Bridge</u> - Vertical Boring and Standard Penetration Test (SPT) - Laboratory Testing (Shear Strength Test, Grain Size Distribution, Uniaxial Compression Test, Soil Unit Volume Weight, Shrinkage Test, Natural Water Content, etc.)	✓	✓	✓	✓	✓	
	<u>Tunnel/Road Disaster</u> - Geological Site Reconnaissance - Vertical Boring (with Standard Penetration Test (SPT)) and Horizontal Boring (Note: Excluding RD-3) - Laboratory Testing for Rocks (Uniaxial Compression Test, Unit Weight, Ultrasonic Velocity, etc.) (Note: Excluding RD-3)					✓	✓
Material Tests	- Embankment Material Testing (Water Content, Specific Gravity, Grain Size, Density, Specific Gravity of Soil Particles, Atterberg Limit, Modified CBR, etc.) - Basecourse/Sub-basecourse Material Testing (Grain Size, Modified CBR, Density, Water Content, etc.) - Asphalt Pavement Aggregate Material Testing (Grain Size, Water Absorption Rate, Abrasion Resistance, Flatness Index, etc.) - Concrete Aggregate Material Testing (Density, Water absorption Rate, Grain Size, Chloride Amount, Organic Impurities, Alkali Aggregate Reaction, etc.)	✓	✓	✓	✓	✓	
Meteorological Data Collection	- Amount of Rainfall, Amount of Snowfall, Temperature (Maximum/Minimum), etc.	✓	✓	✓	✓	✓	✓
Road Inventory Survey	- Road Surface Survey (Damage Status, Cross-sectional Elements, Road Surface Drainage Facilities, Land Use, Intersections, etc.) - Drainage Survey (Cross-sectional Drainage Facilities, Drainage Channels, Drainage Basin, etc.) - Axle Load Survey (portable axle load gauge)	✓	✓	✓	✓	✓	
Utilities Survey	- Utility Surveys for Electric Cables, Water Pipes, Gas Pipes, Communication Cables, etc.	✓	✓	✓	✓	✓	✓
Hydrological Survey	- Water Usage Survey (Location of Streams and Wells usage, Stream Water Volume, Well Water Level, Water Quality, etc.) - Hydrogeological Survey (Geological Confirmation, Water Sampling, and Ion analysis, etc.)					✓	

9.2 Recommended Methodology and Scope for Baseline Environmental and Social Surveys

Table 9-2 summarizes the primary information to be collected in the baseline survey on the environmental and social considerations required in future cooperative readiness studies.

Table 9-2 Baseline Survey Content on Environmental and Social Considerations

Primary Information – Environmental Sector	
1. Topography, Geology, and Soil	- Topographic maps, elevation, slopes, geological structure - Types and distribution of soil, erosion risk
2. Water Environment	- Locations of surface and groundwater, water quality, and water use (drinking, agriculture, industry) - Flood history, drainage patterns, presence of wetlands, and impacts on irrigation canals
3. Air Quality, Noise, and Vibration	- Existing air quality data (PM2.5, NOx, etc.) - Background noise levels (day/night), presence of vibration sources
4. Ecosystems and Natural Environment	- Distribution of flora and fauna (especially endangered species) - Location of nature reserves, wildlife protection areas - Deforestation status, need for urban greening
Primary Information –Social Sector	
5. Landscape and Cultural Heritage	- Areas of landscape importance (tourist sites, cultural landscapes) - Locations and current status of cultural properties and archaeological sites
6. Land Use and Land Tenure	- Existing land use (agricultural land, residential, public land, etc.) - Forms of land ownership (private, state-owned, communal), presence of land rights issues
7. Project Affected People	- Number and composition of affected households (gender, age, ethnicity) - Assets subject to relocation, such as houses, commercial facilities, and farmland
8. Presence of Vulnerable Groups	- Existence and locations of socially vulnerable groups (elderly, persons with disabilities, ethnic minorities) - Need for mitigation measures
9. Transportation and Accessibility	- Actual use of existing roads and public transport - Issues related to traffic safety and congestion
10. Gender and Social Roles	- Women's land rights and freedom of movement; women's participation in public hearings - Number of female-headed households and their vulnerability
11. Livelihoods and Sources of Income	- Main economic activities of local residents (agriculture, commerce, transport, etc.) - Potential impacts on income and employment opportunities due to the project

Source: JICA Survey Team

It is important that such primary information is carefully collected through consultation with affected and beneficiary communities (social surveys) and through field visits (environmental surveys) and interviews with government officials.

9.3 Issues to Be Addressed by the Government of Uzbekistan

9.3.1 Approval Procedures for the Loan Agreement

The approval procedures from the formulation of a loan project by international financial institutions (IFIs)/foreign government financial organizations (FGFOs) to the conclusion of the loan agreement are shown in Table 9-3.

As the first stage, the implementing agency must submit the proposed project concept paper to the Ministry of Investment, Industry and Trade by August 15, and obtain approval from the Government Commission by September 30.

In the second stage, the project appraisal document must be prepared and approved by the Government Commission by December 1, ensuring that the project is included in the list of new projects of the State Investment Program[1].

The requirements for adoption are as follows:

- The total project cost must not exceed the forecasted limit for a three-year period.
- The project must be consistent with the goals set out in national strategies.
- The project must be feasible based on economic efficiency and social significance.

Approval by the Government Commission requires prior joint agreement between the Ministry of Investment, Industry and Trade, and the Ministry of Economy and Finance. If such an agreement is not reached, the project cannot be included in the list. Therefore, during the preparatory survey stage, it is important not only for the implementing agency but also for the Ministry of Investment, Industry and Trade and the Ministry of Economy and Finance to be fully informed and involved in building consensus on the candidate project. After obtaining approval from the Government Commission, a formal request is submitted to the relevant international financial institution/foreign government financial organization by either the Ministry of Investment, Industry and Trade, or the designated counterpart ministry acting as the official governor with that institution.

Table 9-3 Procedures for the Loan Agreement

Stage	Procedure	Responsible Agency	Duration / Deadline
Stage 1 (Project Formulation)	Preparation of project concept paper	Implementing Agency	By August 15 annually
	Agreement on concept paper with the Industry, Scientific and Technical Council	Implementing Agency / Industry Scientific and Technical Council	Within 10 days
	Agreement with the People's Deputies Council	Implementing Agency / People's Deputies Council	Within 1 month

[1] Even if the project concept paper has not been approved during the first stage, the Presidential Decree stipulates that it may still be possible to submit a request upon consultation with the Ministry of Economy and Finance. Therefore, it is necessary to confirm with the relevant ministry in such cases.

Stage	Procedure	Responsible Agency	Duration / Deadline
	Joint assessment of alignment with national/sectoral priorities	Ministry of Investments, Industry and Trade (MIIT)/ Ministry of Economy and Finance (MEF)	Within 20 days
	Revision of the concept paper based on comments	Implementing Agency	Within 15 days
	Submission to the Government Commission	MIIT/MOEF	By September 30
	Review and approval of the concept paper	Government Commission	15 working days
Stage 2 (Project Appraisal Document Approval)	Official appointment of project team representatives	Implementing Agency	Prescribed period
	Preparation of technical specifications with IFI (International Financial Institutions) /FGFOs (foreign governmental financial organizations)	Implementing Agency / MIIT	Prescribed period
	Drafting of Project Appraisal Document (PAD)	Implementing Agency / IFIs / FGFOs	Prescribed period
	Agreement with the Industry Council on PAD	Implementing Agency / Industry Council	20 working days
	Review of PAD	MIIT / MOEF / DUK Center (if applicable)	25 working days
	Revision based on comments	Implementing Agency	30 working days
	Approval by the Government Commission	Government Commission	20 working days
	Inclusion in New Project List	MIIT	By December 1 annually
⇩	**Request for financing a project**		
Stage 3 (Loan Agreement)	Negotiation and signing of Terms Sheet with IFIs/FGFOs	Gov. Delegation / IFIs/FGFOs	Prescribed period
	Approval by the Board of IFIs/FGFOs	Board of IFIs/FGFOs	Prescribed period
	Signing of the loan agreement	MOEF / Line Ministry / IFIs	Prescribed period
	Submission of legal opinion to IFIs/FGFOs	Ministry of Justice / Implementing Agency	Within 2 weeks

Source: Prepared by JICA Survey Team based on Presidential Decree PQ-51 dated February 11, 2025

9.3.2 Environmental and Social Considerations

As explained in Chapter 8 of the study on environmental and social considerations, the necessary permitting procedures to be addressed by the Government of Uzbekistan (CR) include the following.

(1) Considerations for Special Zones and Permit Procedures

Following Uzbekistan's new Environmental Law (ZRU No.1036), where proposed road sites overlap with or are close to national parks, nature reserves, and cultural heritage sites, the CR is required to coordinate and address the following across several relevant legal systems

1) National parks and nature reserves

- Special permits must be obtained from the Ministry of Ecology, Environment, and Climate Change (MEEPCC).
- Relevant legislation: the Law on the Regulation of Nature Use, the Forest Law, the Land Law, etc.
- Excavation, logging, landscaping, etc., are likely to be prohibited in principle, and considering avoidance measures such as rerouting will be a priority.

2) Archaeological and cultural heritage

- Prior consultation with and permission from the Ministry of Culture and Tourism (MOC) is required.
- If there is a risk of damage to archaeological remains due to construction, archaeological screening surveys may be required.

Other required actions, depending on the phase of the project, are summarized below.

Table 9-4 Environmental and Social Considerations to be Addressed by the Government of Uzbekistan

Phase	Corresponding Actions
Pre-Planning Stage	The CR is advised to obtain land use maps, cultural heritage maps, and cadastral maps of the planned route from relevant ministries and to cross-check them with the project plan. Where relevant, it may be beneficial to consider alternative routes and develop a proposal to minimize potential impacts.
During EIA Preparation	The Consultant (CR) shall include descriptions and impact analyses of protected natural areas and cultural properties in the EIA. It is also advisable to keep records of consultations with the relevant ministries and submit them as part of the documentation.
Permit Acquisition	Where appropriate, the CR may consider obtaining special permits from MEEPCC and MOC.
Public Hearing	It is recommended to explain the project to MEEPCC and coordinate the logistics of public consultation in collaboration with local authorities. In cases involving resettlement for land acquisition, seeking the cooperation of local governments and providing technical support may be important.
Construction Phase	It is deemed necessary to include excavation surveys and environmental monitoring in construction contracts. In the event that archaeological remains or rare species are discovered, prompt reporting is mandatory. It is also recommended to determine appropriate measures for tree transplantation and compensation, along with identifying suitable funding sources.

Source: JICA Survey Team

9.4 Lessons Learned from Past and Ongoing Comparable Projects

- In July 2016, a terrorist attack on Dhaka by an Islamic extremist group occurred, and Japanese experts who were working on the "Preparatory Study on the Dhaka Mass Rapid Transit Development Project (TOD) in Bangladesh" were victims. This incident occurred just before the end of Ramadan in Bangladesh. The threat of terrorism tends to increase during Ramadan, and religious feelings are said to be particularly high during the last week of Ramadan, so it is necessary

to be vigilant against terrorist attacks. In principle, site survey/activities in Uzbekistan during Ramadan shall be avoided for JICA projects. For site survey/activities during the general season, sufficient safety measures shall be taken, such as prior confirmation of the security situation in Uzbekistan through relevant organizations, thorough registration of Tokokan, and establishment of an emergency contact system. In addition, the priority projects selected in the Survey include border roads with Tajikistan and Kyrgyz, and it is fully understood that they are susceptible to the effects of a sudden deterioration of security and the strengthening of border security due to the security situation, and prior coordination with the JICA office will be carried out when traveling.

- In the past Japanese ODA Loan Project in Uzbekistan, the "Karshi-Termez Railway Electrification Project," there was an incident of illegal payments to officials related to UTY. In light of this, it is necessary to consider in advance the measures to prevent corruption that should be taken in the implementation stage, referring to the "Anti-Corruption Guidance." Specifically, this includes the creation and operation of a well-balanced anti-bribery system using a "risk-based approach" and cooperation with the Division of Fight Against Corruption established in the MOT.
- In Uzbekistan, presidential decrees on development policies are frequently issued in a top-down manner, and implementing agencies and donors formulate projects based on the intentions of the president or the management level of the ministries. This top-down system is the same for each ministry and agency. In this survey, the candidate projects and the priority projects were selected based on discussions with the management level (Deputy Minister of MOT and the Deputy Chairman of CR). To proceed smoothly, it is important to thoroughly share information and discuss the management levels in the preparatory study stage.
- In Uzbekistan, there are challenges related to the quality control of bridges. Initial defects often arise due to deficiencies during the design and construction stages, making it essential to ensure construction quality. Specifically, under International Competitive Bidding (ICB), not only domestic but also foreign contractors are invited to participate widely, allowing for the selection of the most suitable contractor. Alternatively, when Local Competitive Bidding (LCB) is applied, an international consultant is employed to oversee design and construction supervision.

9.5 Utilization of DX to Improve Survey Efficiency and Accuracy

Proposals for the utilization of DX (Digital Transformation) in the design, construction, and maintenance stages have been organized in Table 9-5.

Table 9-5 Proposals for the Utilization of DX in Design, Construction, and Maintenance Stages

Phase	Proposed Use of DX	Current Status in Uzbekistan and Expected Benefits of DX Utilization
Design Stage	**Drone Survey** (Capturing the ground using cameras and sensors mounted on drones and analyzing the obtained data to measure terrain and structures)	In Uzbekistan, the use of drones has begun in some survey companies. Actively employing drone surveys in this project is expected to contribute to reduced labor and equipment costs, as well as shortened work duration.

Phase	Proposed Use of DX	Current Status in Uzbekistan and Expected Benefits of DX Utilization
	BIM/CIM (Facilitating decision-making through 3D models, evaluating environmental impacts via construction simulation, and verifying safety measures through driving simulation)	To facilitate consensus-building with the counterpart government agencies, 3D models will be developed. In Uzbekistan, particular attention is required for traffic safety, so 3D models enabling an overview of roads, intersections, structures, and safety facilities will be created to support high-quality infrastructure delivery. Additionally, if relocation of existing utilities such as water, electricity, telecommunications, or gas is required, 3D models will help organize complex spatial relationships with road structures, improving work efficiency. Currently, BIM utilization in Uzbekistan is at an early stage and not yet widespread. Active application of BIM/CIM in this project is also expected to promote its broader adoption in the country.
Construction Stage	**Digitalized Concrete Pavement Construction** (Using equipment with GPS and automatic control for precise and rapid construction)	In Uzbekistan, some construction companies own slip-form pavers and conduct concrete pavement using slip-form methods. Applying 3D machine control to these machines is expected to achieve higher efficiency and precision. If accurate positional data is obtained from BIM/CIM models developed in the design stage, these models can also be effectively utilized.
	3D Reinforcement Modeling (Data Lab Co.) (Acquiring point cloud data and converting it into 3D models to automatically generate inspection reports of reinforcement measurements)	In Uzbekistan, construction defects have been identified in existing concrete structures. Semi-automation of reinforcement inspection is expected to contribute to ensuring the quality of concrete structures.
Operation & Maintenance Stage	**Maintenance Using BIM/CIM** (Creating simulation videos during inspections to enable more concrete inspection planning)	By effectively using BIM/CIM models developed in the design stage, understanding among road managers and field personnel is expected to improve regarding inspection space under girders, operational issues during movement, safety measures, and the working range of bridge inspection vehicles.
	Bridge WIM for Monitoring Overloaded Vehicles (Measuring the weight and axle load of passing vehicles)	In Uzbekistan, road and bridge damage caused by overloaded vehicles has been observed. Active use of WIM (Weigh-in-Motion) is crucial for strengthening monitoring and enforcement. Particularly, bridge WIM does not require cutting the pavement to embed sensors, making it less costly than embedded pavement sensors, and is expected to promote the adoption of overloaded vehicle management in the country.
	Pavement Management Using Ride Quality Measurement and AI Image Analysis	Road managers conduct pavement surveys and visual inspections to understand pavement conditions, but face challenges in labor and cost. Utilizing sensors embedded in smartphones (accelerometer, gyroscope, GPS) and dash cameras is expected to enable low-cost, high-accuracy pavement surveys (IRI estimation) and damage diagnosis.

Appendix-1: Candidate Project Summary Sheets

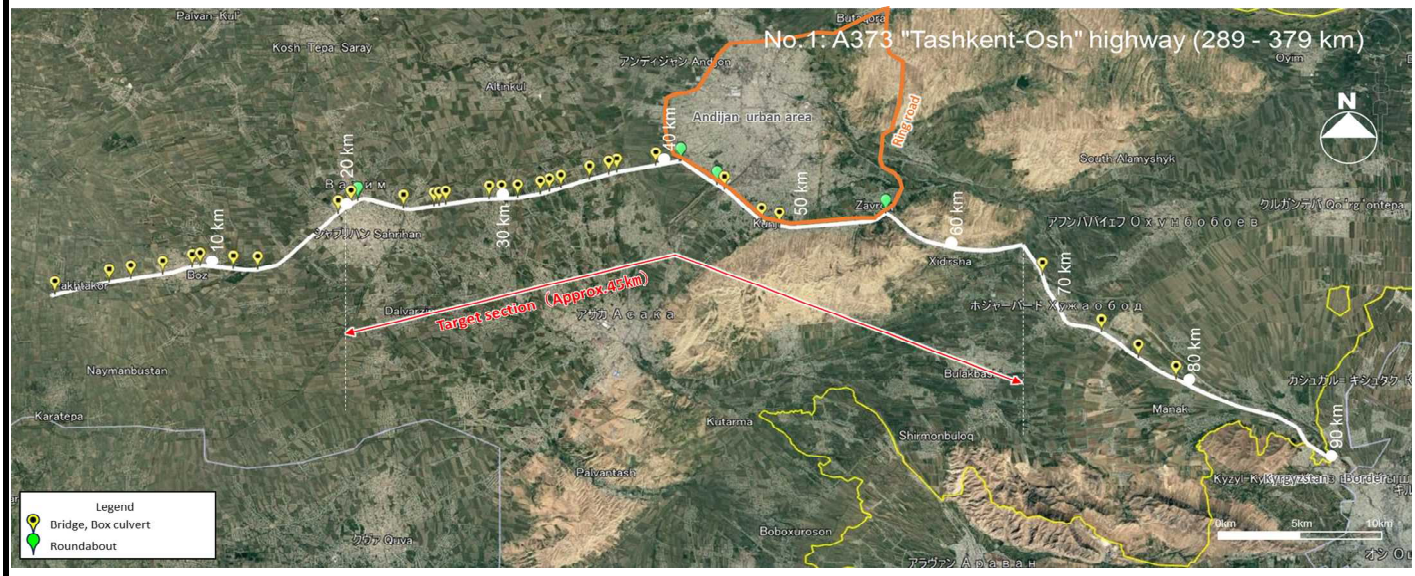
Summary information sheet of Candidate Projects(Road)

No.	RO-1		
Project name	A373 "Tashkent-Osh" highway(309-354 km)		
Responsible	MOT	Related Organization	CR
Project cost	125		

Project summary

RO-1 is an International Road (A373) connecting Tashkent-Andijan-Kyrgyzstan border. This road is 4-6 lanes and located in the flat terrain Fergana basin in eastern Uzbekistan. The project is a rehabilitation of an existing road. The traffic volume is approximately 25,000veh/day, and the traffic demand is very high. In terms of people flow, it is the trunk road for movement between Fergana basin and Tashkent. In terms of logistics, the road is used by many trucks for imports and exports in Fergana basin, and for the transportation of fruits and textiles, cottons, etc. In terms of road network, the road connects to Andijan Ring Road, the terminus of the planned PPP project (Tashkent-Andijan).
It is also on the route of the CAREC corridor (Central Asia Regional Economic Cooperation Corridor) and TRACECA (Europe-Caucasus-Asia Transportation Corridor), which are planned international corridors. On the border of Kyrgyzstan, there is Osh city, and Osh is on the route of Kyrgyz OBI road, which is being supported by JICA.

Location map



Scope	Road Improvement : L=45km Bridges(include Overpass) : 6 (L=223m) 、box culvert : 10、Roundabout : 4				
State	Andijon				
Road Condition	Road Class	International Road A373		Number of Lanes	4～6
	Carriageway width	28.5 ～ 36 m		Shoulder width	1.5m
	Pedestrian walk	6.0m		Pavement	Asphalt
	Structiure	Bridges(include Overpass) : 6 (L=223m) 、box culvert : 10、Roundabout : 4		Traffic volume	20,000~25,000Veh／Day(V/C:0.31)
	roadside conditions	Passing through many urban areas		Road surface condition	All section : 3.6 ・West side of ring road : 3.8 ・Rind road : 5.2 ・East side of ring road : 3.8

Others

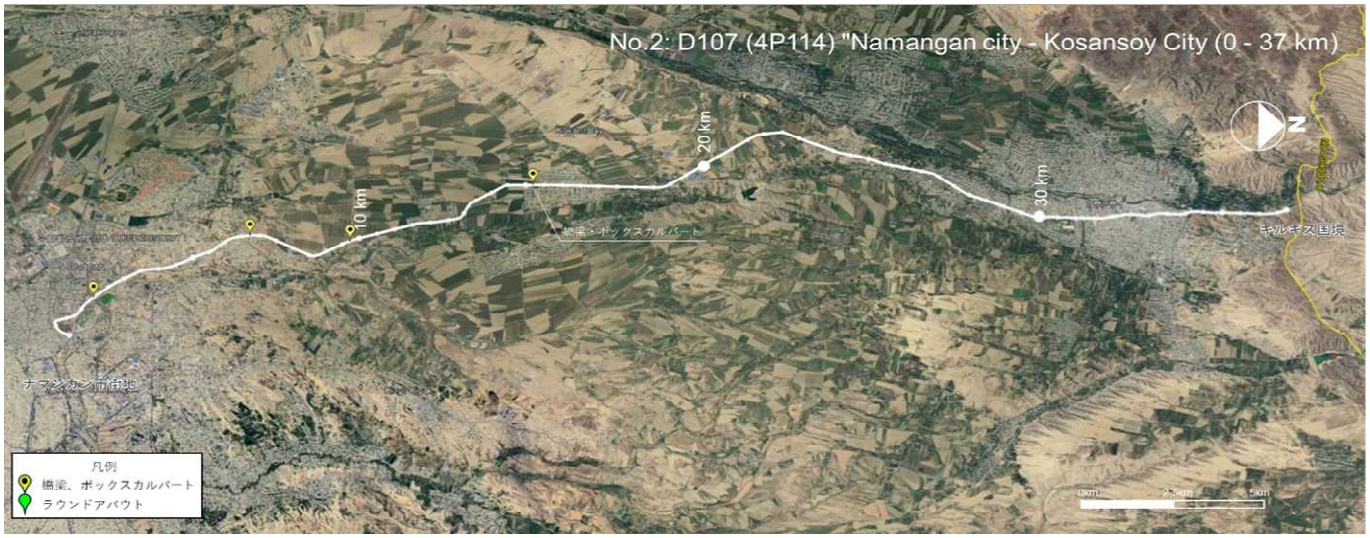
Summary information sheet of Candidate Projects(Road)

No.	RO-2		
Project name	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	65		

Project summary

RO-2 is a National Road (D107(4P114)) connecting Namangan-Kyrgyzstan Border. This road is 2-4 lanes and located in the flat terrain Fergana basin in eastern Uzbekistan. The project is a rehabilitation and road expansion of an existing road. The traffic volume is approximately 19,551veh/day, and the traffic demand is high. In terms of people flow, it is the road for movement around Namangan city commute. In terms of logistics, the road is used by trucks for daily and agricultural products, and the amount of cargo is few. In terms of road network, the road connects to Kyrgyzstan border, but the road standards of Kyrgyz side is low, and the use of trucks and other vehicles for international transportation is limited.

Location map



Scope	Widening : L＝9.4km、Road Improvement : L=37km Bridges(include Overpass) : 2 (L=105m) 、Box culvert : 2、Roundabout : 0			
State	Namangan			
Road Condition	Road Class	National road D107	Number of Lanes	4～6
	Carriageway width	28.5 ～ 36 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Asphalt
	Structiure	Bridges(include Overpass) : 2 (L=105m) 、Box culvert : 2、Roundabout : 0	Traffic volume	19,551Veh／day(V/C:0.27)
	roadside conditions	Passing through many urban areas	Road surface condition	4.3

Others

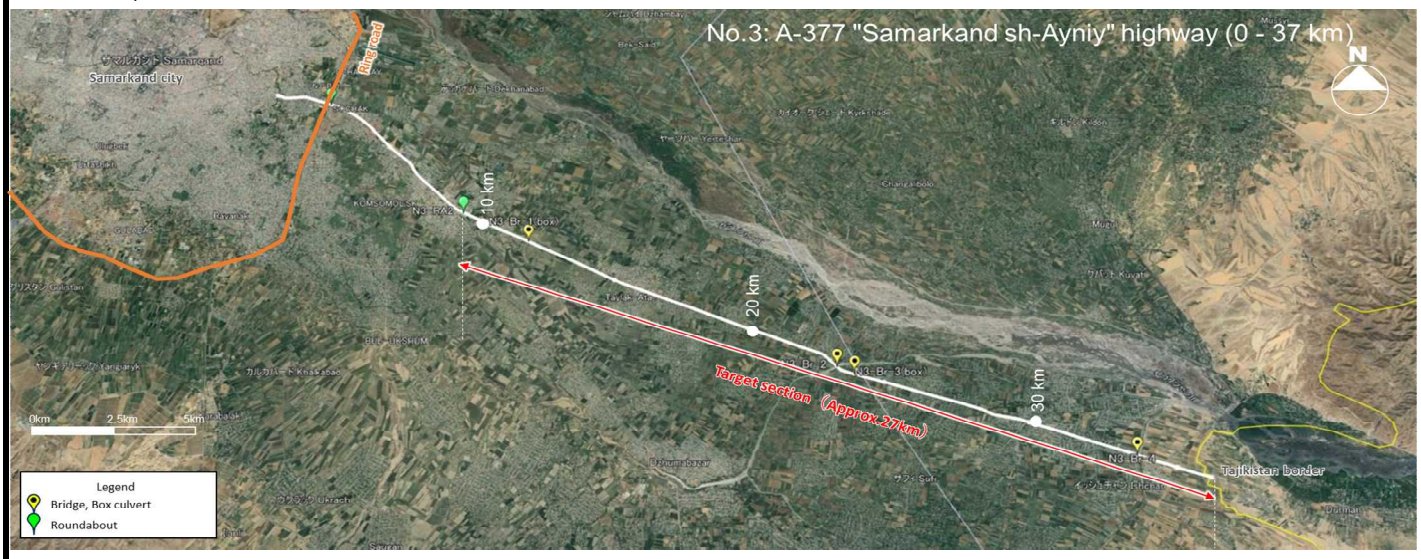
Summary information sheet of Candidate Projects(Road)

No.	RO-3		
Project name	A-377 "Samarkand sh-Ayniy" highway (0 - 36 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	60		

Project summary

RO-3 is an International Road (A377) connecting Samarkand-Tajikistan border. This road is 2-4 lanes and located in the flat terrain. The project is a rehabilitation and road expansion of an existing road. The traffic volume is approximately 22,000-25,000veh/day, and the traffic demand is high. In terms of people flow, it is the trunk road for tourists movement between Samarkand and Tajikistan. In terms of logistics, the road is used by trucks for small lot distribution, and products for tourists. In terms of road network, the road connects to Samarkand Ring Road, the terminus of the planned PPP project (Tashkent-Samarkand). It is also on the route of the CAREC corridor (Central Asia Regional Economic Cooperation Corridor) and TRACECA (Europe-Caucasus-Asia Transportation Corridor), which are planned international corridors.

Location map



Scope	Road Improvement : L=27km Bridges(include Overpass) : 2 (L=95m) 、Box culvert : 2、Roundabout : 1			
State	Samarkand			
Road Condition	Road Class	International Road A377	Number of Lanes	4～6
	Carriageway width	28.5 ～ 36 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Asphalt
	Structiure	Bridges(include Overpass) : 2 (L=95m) 、Box culvert : 2、Roundabout : 1	Traffic volume	22,000~25,000Veh／day(V/C:1.21)
	roadside conditions	Passing through many urban areas	Road surface condition	All section : 5.2 ・Urban section : 5.6 ・Subyrban section : 3.8

Others

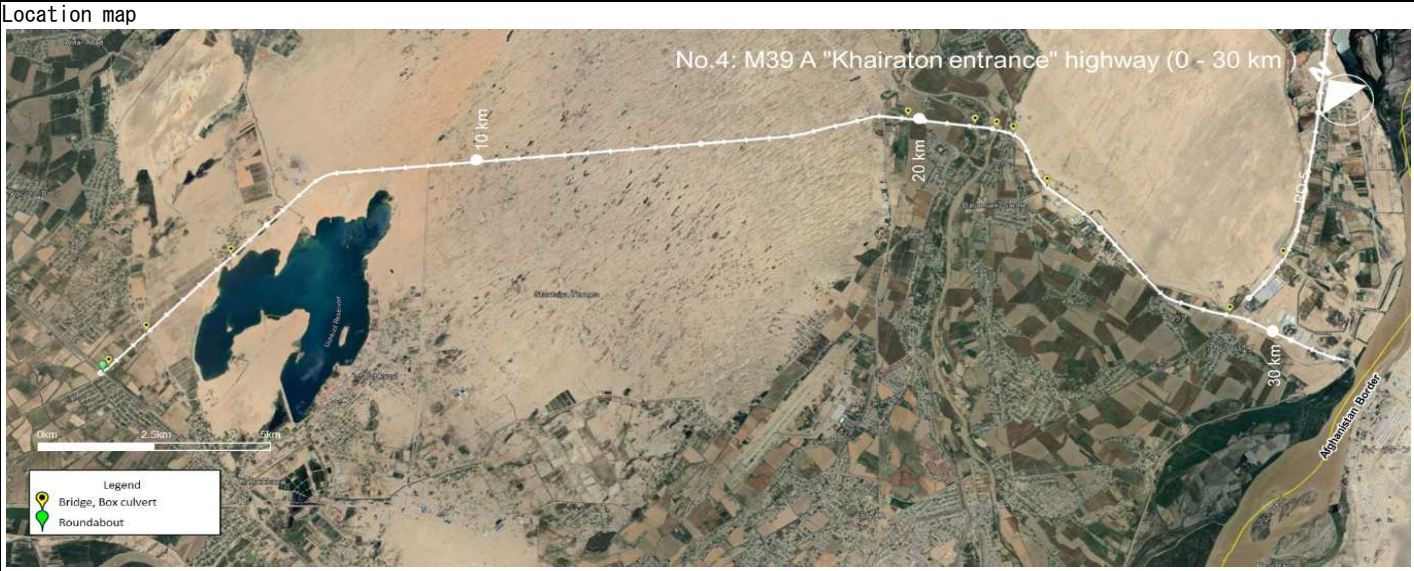
Summary information sheet of Candidate Projects(Road)

No.	RO-4		
Project name	M39 A "Khairaton entrance" highway (0 - 31 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	75		

Project summary

RO-4 is an International Road (M39) connecting Kaftarhana -Afghanistan border. This road is 4 lanes and located in the flat terrain in southern Uzbekistan. The project is a rehabilitation of an existing road. The traffic volume is approximately 5,950veh/day, and the traffic demand is medium. In terms of people flow, it is the road for the Afghan border people flow (workers and aid workers). In terms of logistics, the road is used by trucks for mainly construction materials to Afghanistan. In terms of road network, the part of this road is on the route of the CAREC corridor (Central Asia Regional Economic Cooperation Corridor) and TRACECA (Europe-Caucasus-Asia Transportation Corridor), which are planned international corridors.

Location map



Scope	Road Improvement : L=30km Bridge(include Overpass) : 5 (L=413m) 、Box culvert : 4、Roundabout : 1			
State	Surkhandarya			
Road Condition	Road Class	International Road M39	Number of Lanes	4
	Carriageway width	28.5 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Asphalt
	Structiure	Bridge(include Overpass) : 5 (L=413m) 、Box culvert : 4、Roundabout : 1	Traffic volume	5,950Veh／day(V/C:0.13)
	roadside conditions	Along the road is desert and rural areas with few residences, etc.	Road surface condition	4.3

Others

Summary information sheet of Candidate Projects(Road)

No.	RO-5		
Project name	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 40 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	45		

Project summary

RO-5 is a National Road (D168(4P99)) connecting Afghanistan border - Tajikistan border. This road is 2 lanes and located in the flat terrain in southern Uzbekistan. The project is a rehabilitation of an existing road. The traffic volume is approximately 5,155veh/day, and the traffic demand is medium. In terms of people flow, it is the road for the Afghan border people flow (workers and aid workers). In terms of logistics, the road is used by trucks for mainly construction materials to Afghanistan.

Location map



Scope	Road Improvement : L=49km Bridges(include Overpass) : 3 (L=70m) 、Box culvert : 3、Roundabout : 0			
State	Surkhandarya			
Road Condition	Road Class	National Road D168	Number of Lanes	2
	Carriageway width	15 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Asphalt
	Structiure	Bridges(include Overpass) : 3 (L=70m) 、Box culvert : 3、Roundabout : 0	Traffic volume	5,155Veh／day(V/C:0.57)
	roadside conditions	Along the road is desert and rural areas with few residences, etc.	Road surface condition	4.2

Others

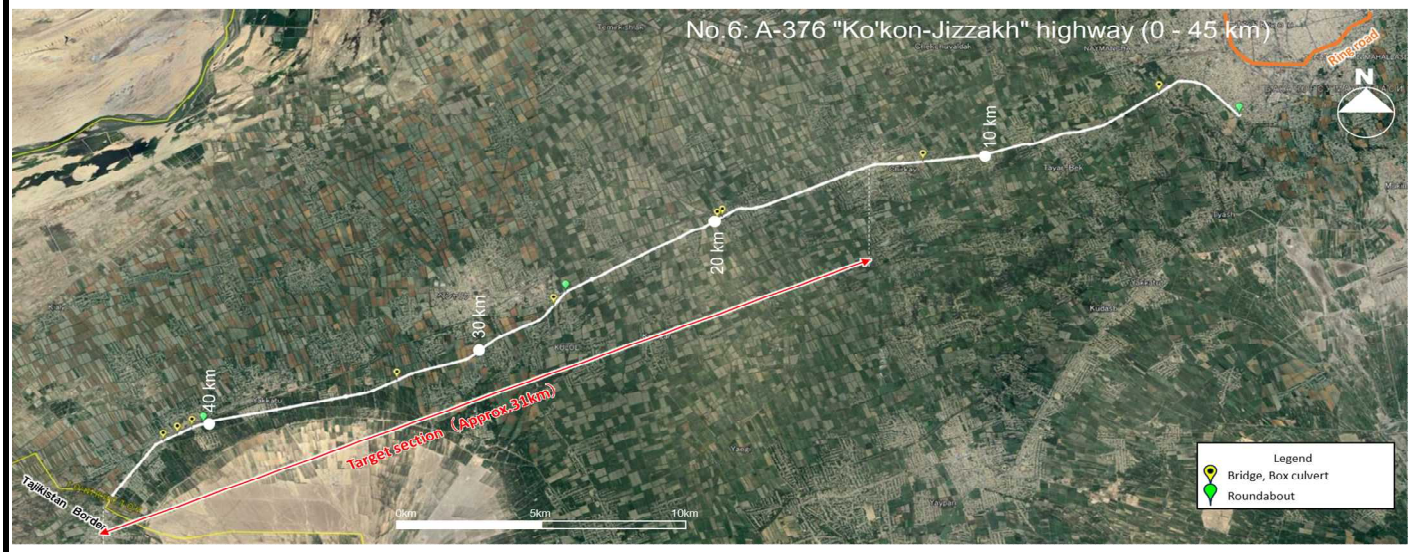
Summary information sheet of Candidate Projects(Road)

No.	RO-6		
Project name	A-376 "Ko'kon-Jizzakh" highway (14 - 45 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	55		

Project summary

RO-6 is an International Road (A376) connecting Kokand-Tajikistan border. This road is 2-4 lanes and located in the flat terrain Fergana basin in eastern Uzbekistan. The project is a rehabilitation and road expansion of an existing road. The traffic volume is approximately 17,467veh/day, and the traffic demand is high. In terms of people flow, it is a route of long-distance buses, businessman, etc. In terms of logistics, the road is used by trucks for daily and agricultural products, and the amount of cargo is few. In terms of road network, the road is also on the route of the CAREC corridor (Central Asia Regional Economic Cooperation Corridor) and TRACECA (Europe-Caucasus-Asia Transportation Corridor), which are planned international corridors. The other side of border of Tajikistan, there is Khodjent city, and it also connect to Jizzah in Uzbekistan.

Location map



Scope	Road Improvement : L=31km Bridges(include Overpass) : 3 (L=58m) 、Box culvert : 4、Roundabout : 2			
State	Fergana			
Road Condition	Road Class	International Road A376	Number of Lanes	4
	Carriageway width	28.5 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Ashpalt
	Structiure	Bridges(include Overpass) : 3 (L=58m) 、Box culvert : 4、Roundabout : 2	Traffic volume	17,467Veh／day(V/C:0.68)
	roadside conditions	Passing through many urban areas	Road surface condition	3.9

Others

Summary information sheet of Candidate Projects(Road)

No.	RO-7		
Project name	D089 "Fergana city -Kuvasai city- (6 - 25 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	35		

Project summary

RO-7 is a National Road (D089) connecting Fergana-Kyrgyzstan border. This road is 2-4 lanes and located in the flat terrain Fergana basin in eastern Uzbekistan. The project is a rehabilitation and road expansion of an existing road. The traffic volume is approximately 32,600veh/day, and the traffic demand is very high. In terms of people flow, it is a route of movement of inter-city trip and between Kyrgyzstan border. In terms of logistics, the road is used by many trucks for importing vegetables and fruits , exporting textiles and coal. In terms of road network, On the border of Kyrgyzstan, there is Kyzyl-Kyya city, and Kyzyl-Kyya is on the route of Kyrgyz OBI road, which is being supported by JICA.

Location map



Scope	Road Improvement : L=19km Bridges(include Overpass) : 4 (L=104m) 、Box culvert : 1、Roundabout : 1			
State	Fergana			
Road Condition	Road Class	National Road D089	Number of Lanes	4
	Carriageway width	28.5 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Asphalt
	Structiure	Bridges(include Overpass) : 4 (L=104m) 、Box culvert : 1、 Roundabout : 1	Traffic volume	32,600Veh／day(V/C:1.46)
	roadside conditions	Passing through many urban areas	Road surface condition	4.6

Others

Summary information sheet of Candidate Projects(Road)

No.	RO-8		
Project name	A380 "Guzar-Bukhara-Nukus-Beineu" highway(765-780 km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	80		

Project summary

RO-8 is an International Road (A380) connecting Guzar-Bukhara-Nukus- Kazakhstan border. This road is 4 lanes and located in the flat terrain in northwestern Uzbekistan. The project is a new bypath road construction. The traffic volume of existing roads is approximately 7,004veh/day, and the traffic demand is medium. In terms of people flow, it is the road for the inter-city and border people flow. In terms of logistics, the road is used by trucks for transporting crude oil and mineral products and has a role of international logistics route. In terms of road network, the road is also on the route of the Caspian sea route (Tashkent-Samarkand-Navoiy-Bukhara-Kazakhstan border).

Location map



Scope	Road Improvement : L=15km Bridges(include Overpass) : 2 (L=712m) 、Box culvert : 0、Roundabout : 0			
State	Karakalpakistan			
Road Condition	Road Class	International Road A380	Number of Lanes	4
	Carriageway width	28.5 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Concrete(plan)
	Structiure	Bridges(include Overpass) : 2 (L=712m) 、Box culvert : 0、Roundabout : 0	Traffic volume	7,004veh／day (exsiting road)
	roadside conditions	Along the road is desert and rural areas with few residences, etc.	Road surface condition	－

Others

Summary information sheet of Candidate Projects(Road)

No.	RO-9		
Project name	M37 "Samarkand-Bukhara-Turkmenbashi(147-190km)		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	145		

Project summary

RO-9 is an International Road (M39) connecting Samarkand -Bukhara-Turkmenistan- border. This road is 4 lanes and located in the flat terrain in southwestern Uzbekistan. The project is a new bypath road construction. The traffic volume of existing roads is approximately 26,600veh/day, and the traffic demand is very high. In terms of people flow, it is the road for the inter-city and tourist flow. In terms of logistics, the road has a role of international logistics route. In terms of road network, the road is also on the route of the Caspian Sea route (Tashkent-Samarkand-Navoiy-Bukhara-Kazakhstan border).

Location map



Scope	Road Improvement : L=43km Bridges(include Overpass) : 3 (L=587m) 、Box culvert : 2、Roundabout : 0			
State	Navoiy			
Road Condition	Road Class	International Road M37	Number of Lanes	4
	Carriageway width	28.5 m	Shoulder width	1.5m
	Pedestrian walk	6.0m	Pavement	Concrete(Plan)
	Structiure	Bridges(include Overpass) : 3 (L=587m) 、Box culvert : 2、Roundabout : 0	Traffic volume	26,600Veh／day (existing road)
	roadside conditions	Along the road is desert and rural areas with few residences, etc.	Road surface condition	-

Others

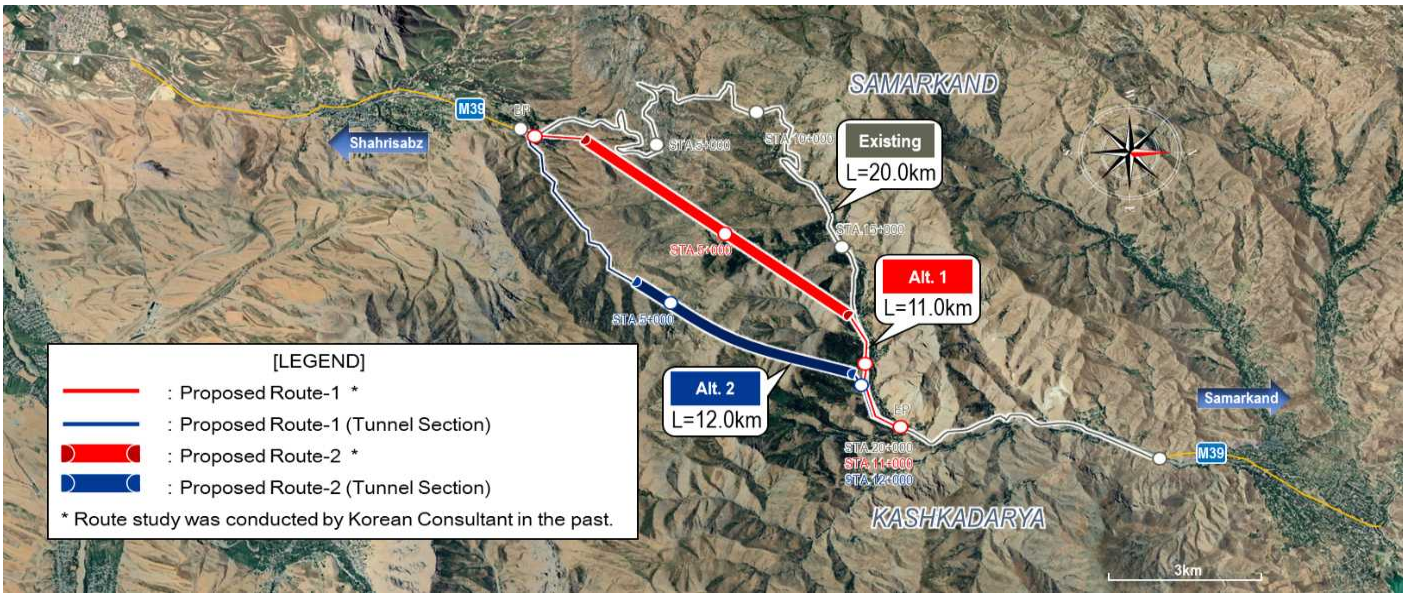
Summary information sheet of Candidate Projects(Road)

No.	RO-10		
Project name	M39 "Takhtaqoracha Tunnel Construction Project"		
Responsible organization	MOT	Related Organization	CR
Project cost (Million USD)	262		

Project summary

This is a new bypass project with a mountain road tunnel on M39 that connects Yanakishlak, located south of Samarkand, to Kishylk and passes. The project section is a two-lane road that passes through the mountainous area (Takhtaqoracha Pass). The traffic volume is 11,789 vehicles per day, and there is a large flow of people, including tourists, intercity commuters, and commuters to Samarkand. This road is a part of the international road (M39) and is expected to play a major role in the transportation of mixed logistics, supplies, agricultural products, etc. However, due to the tough road alignment conditions of the existing road such as steep gradient and sharp curves, the passage of cargo over 12 tons, large trucks, trailers, buses and microbuses (with more than 8 passengers) have been restricted, which is a bottleneck in logistics.

Location map

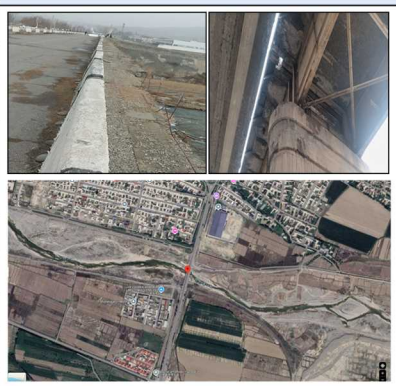
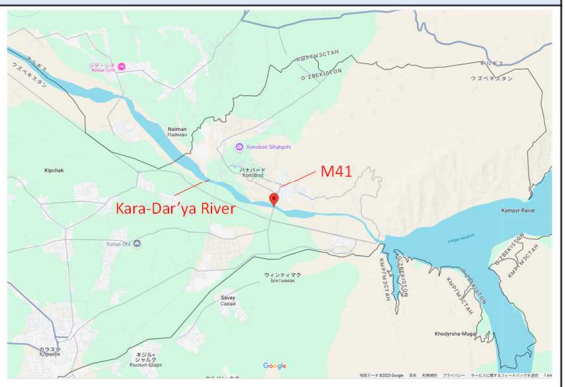


Scope	New Bypass Construction : L=11 to 12km (including Tunnel:L=5 to 7km)			
State	Samarkand			
Road Condition	Road Class	International Road M39	Number of Lanes	2
	Carriageway width	9 m	Shoulder width	1.5m
	Pedestrian walk	N/A	Pavement	Concrete(Plan)
	Structiure	1 Tunnel	Traffic volume	11,789Veh／day (existing road)
	roadside conditions	Mountainous Area	Road surface condition	-

Others

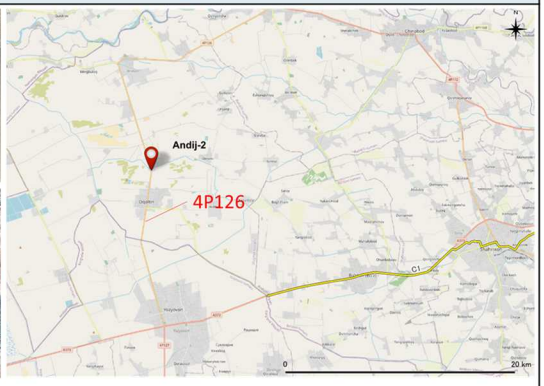
Summary information sheet of Candidate Projects (Bridge)

No.	BR-10	Br. Code	Andij-1

Bridge Specifications		Photos and location of the bridge
No.	BR-10	 
Br. Code	Andij-1	
state	Andijan	
Road Type	International Roads	
Traffic volume (vehicles/day)	Closed	
Bridge Type	Steel bridge	
Year of Construction	1970	
Bridge length (m)	130.35	
Overall width (m)	8	
Intersection	Rivers	
Geographical Features	Population flow: Intercity travel between Xonobod and Kopacyb. Remarks: International road, difficult to replace, strategic location (in the future, it can also connect to Jelalabad, the third largest city in Kyrgyzstan)	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997). It was confirmed that some of the superstructure had fallen off.	
Scope/Estimated project cost	Reconstruction: 0.6 million USD	

Summary information sheet of Candidate Projects (Bridge)

No.	BR-11	Br. Code	Andij-2

Bridge Specifications		Photos and location of the bridge
No.	BR-11	 
Br. Code	Andij-2	
state	Andijan	
Road Type	International Roads	
Traffic volume (vehicles/day)	10,000	
Bridge Type	Concrete bridge	
Year of Construction	1983	
Bridge length (m)	36.7	
Overall width (m)	14.5	
Intersection	Rivers	
Geographical Features	Population flow: Intercity travel between Sarykus and Akaltyn (frequent commuter use) Logistics: Responsible for the distribution of vegetables, fruits, and daily necessities Note: A road connecting to the international road A373 , a daily route within the Fergana Basin	
Bridge conditions and countermeasures		
Bridge Condition	The condition of the substructure is very poor and does not meet Uzbekistan's Bridge Design Standard(1997). It was designed based on old standards, and the structure of the substructure is weak. Concrete peeling and exposed rebar were confirmed.	
Scope/Estimated project cost	Reconstruction: 0.3 million USD	

Summary information sheet of Candidate Projects (Bridge)

No.	BR-13	Br. Code	Andij-4

Bridge Specifications	
No.	BR-13
Br. Code	Andij-4
state	Andijan
Road Type	National highway
Traffic volume (vehicles/day)	10,000
Bridge Type	Concrete bridge
Year of Construction	1981
Bridge length (m)	72.6
Overall width (m)	13.9
Intersection	Railway

Photos and location of the bridge



Geographical Features	People flow: Serves as a bypass between Andijan city and suburbs (route for commuting and daily life) Logistics: Responsible for small and medium-sized goods and distribution-related small-scale logistics Remarks: Urban circular line, easing of local bottlenecks, strategic base (in the future, it can also connect to Jelalabad, the third largest city in Kyrgyzstan)
Bridge conditions and countermeasures	
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997). Minor damage (water leakage, free lime, peeling, exposed rebar) was confirmed.
Scope/Estimated project cost	**Reconstruction:** 0.4 **million USD**

Summary information sheet of Candidate Projects (Bridge)

No.	BR-54	Br. Code	Samar-3

Bridge Specifications	
No.	BR-54
Br. Code	Samar-3
state	Samarkand
Road Type	National highway
Traffic volume (vehicles/day)	6,000
Bridge Type	Concrete bridge
Year of Construction	1981
Bridge length (m)	10
Overall width (m)	7
Intersection	Rivers

Photos and location of the bridge



Geographical Features	People flow: Tourist travel between Juma and Khonchorvoq (access route to Chimgan Mountains and Lake Charvak) Logistics: Tourism-related and service logistics Note: Tourist access route, seasonal demand fluctuations
Bridge conditions and countermeasures	
Bridge Condition	The condition of the substructure is very poor. It does not meet the standards of Uzbekistan's Bridge Design Standard (1997). It was designed according to an old standard, and the substructure framework is structurally weak.
Scope/Estimated project cost	**Reconstruction／0.8 million USD**

Summary information sheet of Candidate Projects (Bridge)

No.	BR-57	Br. Code	Samar-10

Bridge Specifications		Photos and location of the bridge
No.	BR-57	   
Br. Code	Samar-10	
state	Samarkand	
Road Type	National highway	
Traffic volume (vehicles/day)	6,300	
Bridge Type	Concrete bridge	
Year of Construction	1964	
Bridge length (m)	30	
Overall width (m)	15	
Intersection	Rivers	
Geographical Features	People flow: Regional travel from the north to Samarkand Logistics: Agricultural materials and fruit transportation Note: Suburban connector route with moderate importance	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997).	
Scope/Estimated project cost	Reconstruction／0.4 million USD	

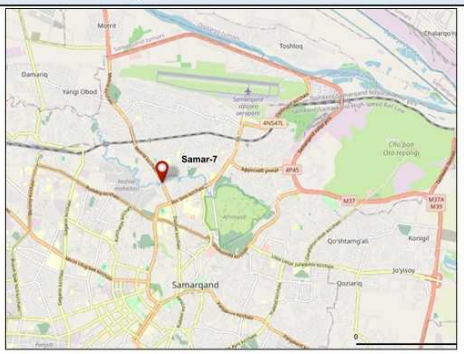
Summary information sheet of Candidate Projects (Bridge)

No.	BR-59	Br. Code	Samar-8

Bridge Specifications		Photos and location of the bridge
No.	BR-59	   
Br. Code	Samar-8	
state	Samarkand	
Road Type	National highway	
Traffic volume (vehicles/day)	5,200	
Bridge Type	Concrete bridge	
Year of Construction	1981	
Bridge length (m)	36	
Overall width (m)	9	
Intersection	Rivers	
Geographical Features	People flow: Daily travel between Samarkand and Usmat areas (used for access to tourist spots in central Samarkand) Logistics: Food products and market deliveries Note: Route serving regional daily transportation	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997).	
Scope/Estimated project cost	Reconstruction／0.5 million USD	

Summary information sheet of Candidate Projects (Bridge)

No.	BR-60	Br. Code	Samar-7

Bridge Specifications		Photos and location of the bridge
No.	BR-60	   
Br. Code	Samar-7	
state	Samarkand	
Road Type	National highway	
Traffic volume (vehicles/day)	22,500	
Bridge Type	Concrete bridge	
Year of Construction	1984	
Bridge length (m)	55	
Overall width (m)	8	
Intersection	河川	
Geographical Features	People flow: Commuting between central Samarkand and suburban areas Logistics: Urban deliveries and tourism-related logistics Note: Urban section of M37, easing bottlenecks	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997).	
Scope/Estimated project cost	Reconstruction＋widening／1.6 million USD	

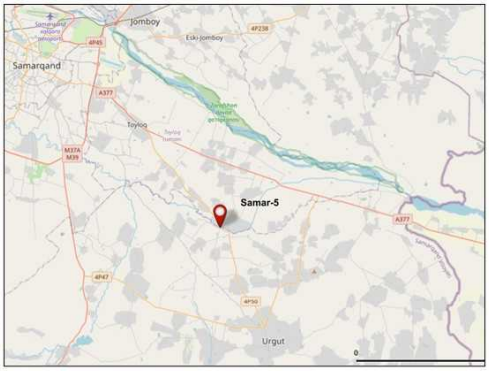
Summary information sheet of Candidate Projects (Bridge)

No.	BR-61	Br. Code	Samar-6

Bridge Specifications		Photos and location of the bridge
No.	BR-61	   
Br. Code	Samar-6	
state	Samarkand	
Road Type	National highway	
Traffic volume (vehicles/day)	15,500	
Bridge Type	Concrete bridge	
Year of Construction	1975	
Bridge length (m)	60	
Overall width (m)	9	
Intersection	Rivers	
Geographical Features	People flow: Travel for schooling and administrative purposes between Juma and Kattaqo'rg'on Logistics: Agricultural products, daily goods, and small-scale industrial goods Note: Regional trunk road in the outskirts of Samarkand	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997).	
Scope/Estimated project cost	Reconstruction／1.2 million USD	

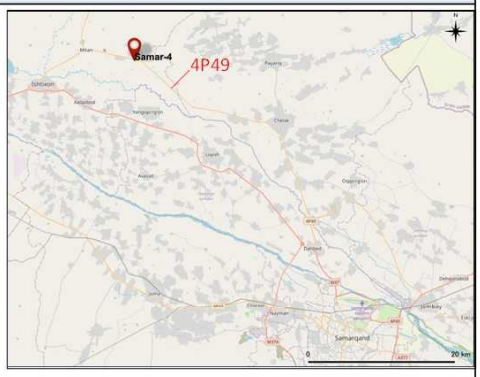
Summary information sheet of Candidate Projects (Bridge)

No.	BR-62	Br. Code	Samar-5

Bridge Specifications		Photos and location of the bridge
No.	BR-62	   
Br. Code	Samar-5	
state	Samarkand	
Road Type	International Roads	
Traffic volume (vehicles/day)	10,500	
Bridge Type	Concrete bridge	
Year of Construction	1987	
Bridge length (m)	72	
Overall width (m)	11	
Intersection	Rivers	
Geographical Features	People flow: Daily and market travel between Toyloq and Urgut Logistics: fruit and vegetable, grains, and daily goods transportation Note: High traffic volume despite being a branch route	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997).	
Scope/Estimated project cost	Reconstruction／1.2 million USD	

Summary information sheet of Candidate Projects (Bridge)

No.	BR-63	Br. Code	Samar-4

Bridge Specifications		Photos and location of the bridge
No.	BR-63	   
Br. Code	Samar-4	
state	Samarkand	
Road Type	National highway	
Traffic volume (vehicles/day)	6,500	
Bridge Type	Concrete bridge	
Year of Construction	1962	
Bridge length (m)	28	
Overall width (m)	8	
Intersection	Rivers	
Geographical Features	People flow: Daily travel within the living area between Ishtikhon and Chelak Logistics: Primarily local deliveries Note: Rural area-focused regional road	
Bridge conditions and countermeasures		
Bridge Condition	It does not meet the Uzbekistan's Bridge Design Standard(1997).	
Scope/Estimated project cost	Reconstruction／0.6 million USD	

Summary information sheet of Candidate Projects(Road Disaster)

No.	**RD-1**		
Project name	D006 "Tashkent City-Chirchiq City-Chimgan Settlement" Road (58 - 81km)		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 6.9 Million USD		

Project Summary

It is a national highway D006 (two-lane road) with approximately 23 km long that connects Gazalkent and Chimgan and passes through mountainous areas. There are several hazardous sections of rockfalls where the road is close to the steep slope. The traffic volume is approximately 3,880 vehicles per day, and this road is mainly used by tourists visiting the mountain climbing areas and resort facilities and distributing tourist-related materials and food and beverages.

Location Map



Scope	Countermeasures for Rockfall (3 sections), Landslde (1 section)			
State	Tashkent Region			
Road Condition	Road Class	National Highway	Number of Lane	2 lanes
	Carriageway Width	12 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall/Landslide	Traffic Volume	3,880 vehicles/day
	Roadside Conditions	Moutainous Area	Road Surface Condition	Non

Others

It is located in a nature reserve area (National Park).

Summary information sheet of Candidate Projects(Road Disaster)

No.	**RD-2**		
Project name	A373 "Tashkent-Osh" Road (103 - 177km)		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 40.2 Million USD		

Project Summary

It is an international road A373 (four-lane road) that connects Angren mine to Khanabad and passes through mountainous areas (the Kamchik Pass) at an altitude of about 2,000m, and there are many hazardous slopes of landslide and rockfall. Rockfalls and landslides have occurred every year and have caused road closures due to them. The traffic volume is 24,279 vehicles per day, and this road is an important route connecting the Fergana Basin and Tashkent for logistics, commuting, etc. In terms of logistics, it is the main international road for domestic and international logistics, with many trucks transporting fruits, textile products, cotton, etc.

Location Map



Scope	Countermeasures for Rockfall (8 sections), Landslde (4 section), Slope Failure (1 section)				
State	Tashkent/Namangan Region				
Road Condition	Road Class	International Road		Number of Lane	4 lanes/ 6 lanes
	Carriageway Width	22.5 ～ 30 m		Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non		Pavement	Asphalt Pavement
	Disaster Risk	Rockfall/Landslide/Slope Failure		Traffic Volume	24,279 vehicles/day
	Roadside Conditions	Moutainous Area		Road Surface Condition	Non

Others

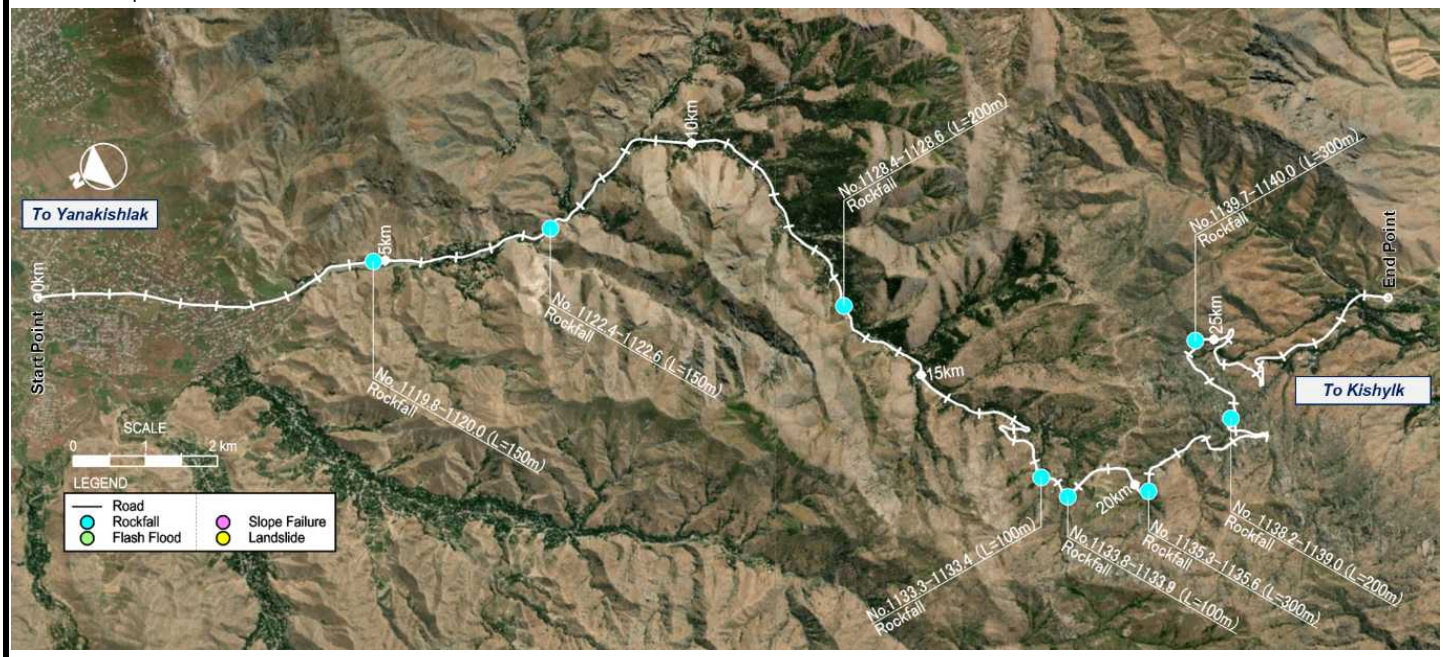
Summary information sheet of Candidate Projects(Road Disaster)

No.	**RD-3**		
Project name	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 9.7 Million USD		

Project Summary

It is an international road M39 (two-lane road) that connects Yanakishlak, located south of Samarkand, to Kishylk and passes through mountainous area (Takhtaqoracha Pass) with many hazardous slopes of rockfall where rockfalls have occurred every year. The traffic volume is 11,789 vehicles per day, and there is a large flow of people, including tourists, intercity commuters, and commuters to Samarkand. It is part of an international logistics route on the Caspian Sea route and plays a major function in the transportation of supplies, agricultural products, etc.

Location Map



Scope	Countermeasures for Rockfall (8 sections)			
State	Smarkand Region			
Road Condition	Road Class	International Road	Number of Lane	2 lanes
	Carriageway Width	12 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rckfall	Traffic Volume	11,789 vehicles/day
	Roadside Conditions	Hilly Area	Road Surface Condition	Non

Others

Summary information sheet of Candidate Projects(Road Disaster)

No.	**RD-4**		
Project name	M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 2.8 Million USD		

Project Summary

It is an international road M39 (two-lane road) that connects Dekhkanabad, located southwest of Guzar, to Shorab and passes through hilly areas with a hazardous slope of rockfall. The traffic volume is 13,263 vehicles per day. This road is mainly used for travelling between mountain areas and transporting light freight, supplies, agricultural products, etc.

Location Map



Scope	Countermeasures for Rockfall (1 sections)			
State	Kashkadariya Region			
Road Condition	Road Class	International Road	Number of Lane	4 lanes/ 6 lanes
	Carriageway Width	12 ～ 22.5 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall	Traffic Volume	13,263 vehicles/day
	Roadside Conditions	Hilly Area	Road Surface Condition	Non

Others

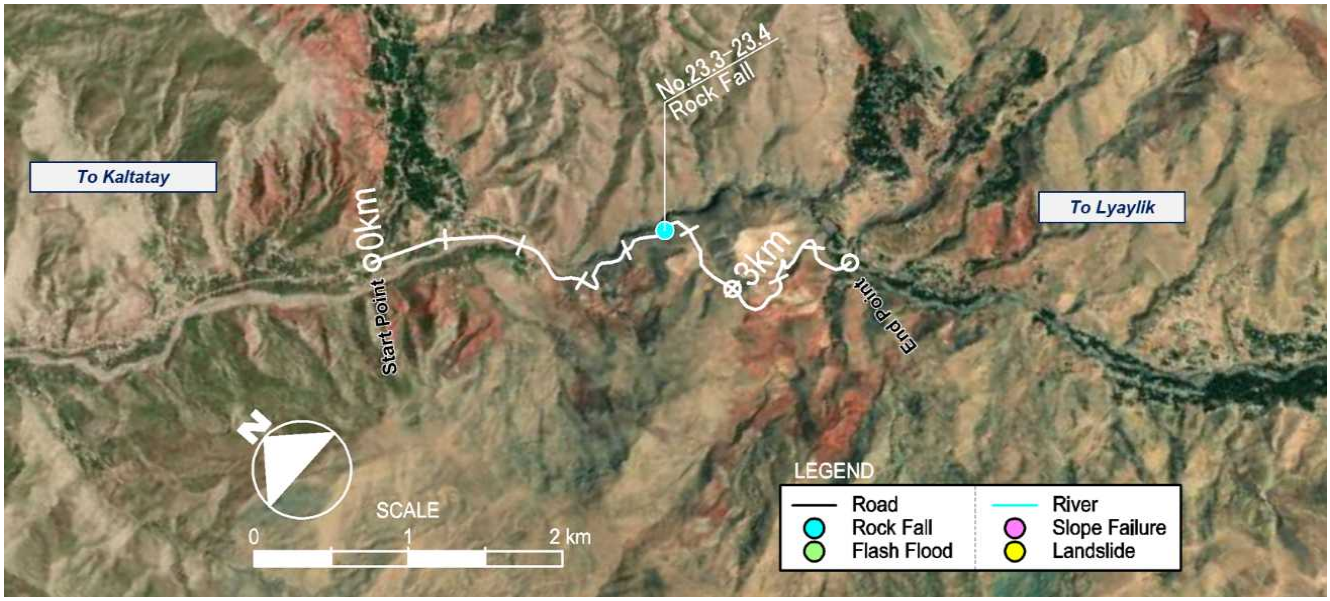
Summary information sheet of Candidate Projects(Road Disaster)

No.	**RD-5**		
Project name	D149 (21-25 km Post) "Langar-Maidanak"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 0.7 Million USD		

Project Summary

It is a national highway D149 (two-lane road) that connects Kaltatay, located northeast of Guzar, to Lyaylik and passes through hilly areas with a hazardous slope of rockfall. The traffic volume is 4,607 vehicles/day, and this road is mainly used for daily traveling between settlements and for small-scale logistics of agricultural products.

Location Map



Scope	Countermeasures for Rockfall (1 sections)			
State	Kashkadariya Region			
Road Condition	Road Class	International Road	Number of Lane	2 lanes
	Carriageway Width	12 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall	Traffic Volume	4,607 vehicles/day
	Roadside Conditions	Moutainous Area	Road Surface Condition	Non

Others

Summary information sheet of Candidate Projects(Road Disaster)

No.	**RD-6**		
Project name	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 5.4 Million USD		

Project Summary

It is an international road M39 (four-lane road) that connects Gallaorol to Karayantak. There are hazardous slopes of rockfall in some sections. The traffic volume is approximately 40,000 to 45,000 vehicles per day. It is an international road connecting major cities, and there is a large flow of people for business, commuting, etc. In terms of logistics, it is part of the Caspian Sea route, and is an important route for the transportation of industrial products, agricultural products, etc.

Location Map



Scope	Countermeasures for Rockfall (2 sections)			
State	Kashkadariya Region			
Road Condition	Road Class	International Road	Number of Lane	4 lanes
	Carriageway Width	22.5 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall	Traffic Volume	40,000-45,000 vehicles/day
	Roadside Conditions	Hilly Area	Road Surface Condition	Non

Others

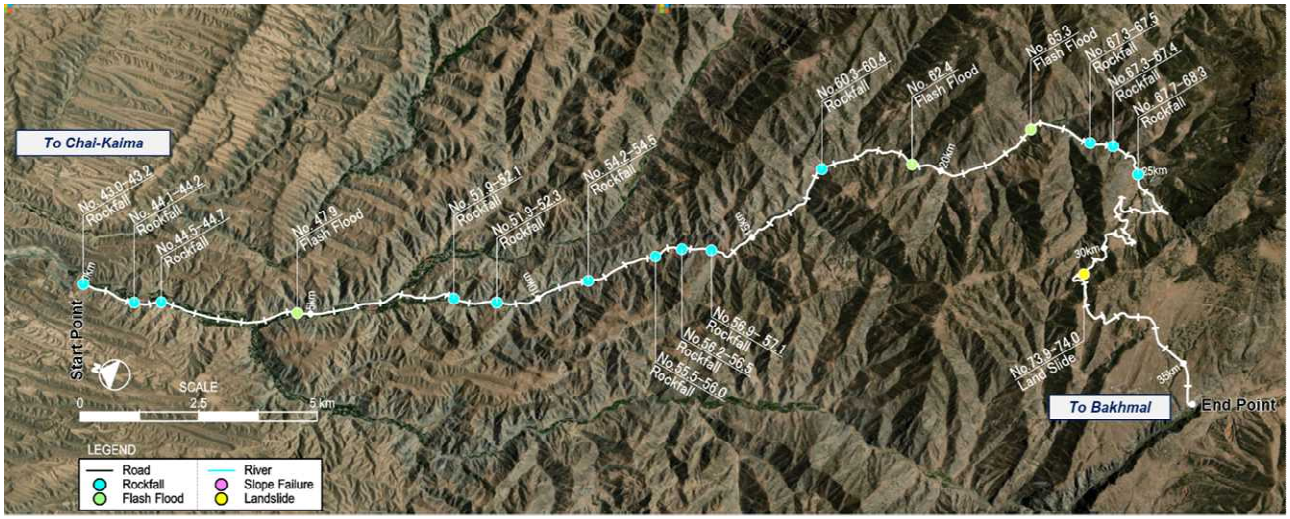
Summary information sheet of Candidate Projects(Road Disaster)

No.	RD-7		
Project name	D052 (43-79 km Post) "Dashtobod-Zomin- Bakhmal-Gallaorol"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 31.9 Million USD		

Project Summary

It is a national highway D52 (two-lane road) that connects Chai-Kaima to Bakhmal and passes through steep mountainous areas with many hazardous sections of rockfall and debris flow (flash flood). The traffic volume is approximately 9,000 to 10,000 vehicles per day. This road is mainly used for tourists travelling to Zaamin Nature Park and resort areas and for transporting regional goods such as agricultural produce and local goods.

Location Map



Scope	Countermeasures for Rockfall (13 sections), Flash Flood (3 sections), Landslide (1 section)			
State	Syrdariya Region			
Road Condition	Road Class	National Highway	Number of Lane	2 lanes
	Carriageway Width	12 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall/Flash Flood/Landslide	Traffic Volume	9,000-10,000 vehicles/day
	Roadside Conditions	Moutainous Area	Road Surface Condition	Non

Others

This road is located in a nature reserve area (National Park).

Summary information sheet of Candidate Projects(Road Disaster)

No.	RD-8		
Project name	D050 (38-47 km Post) "M39 Road (from km 962) - Uchtepa Settlement - Jizzakh City - M39 Road (to km 1013)"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 7.3 Million USD		

Project Summary

It is a national highway D50 (two-lane road) that connects Gallaorol to Jizzakh and passes through hilly areas with several hazardous slopes of rockfall. The traffic volume is approximately 9,000 to 10,000 vehicles per day. There is a lot of traffic for intercity travel and commuting, and this road plays an important function for domestic logistics via Jizzakh and as an alternative route of the international road M39 which functions for a large amount of distribution of goods and daily necessities.

Location Map



Scope	Countermeasures for Rockfall (6 sections)			
State	Kashkadariya Region			
Road Condition	Road Class	National Highway	Number of Lane	2 lanes
	Carriageway Width	12 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall	Traffic Volume	9,000-11,000 vehicles/day
	Roadside Conditions	Hilly Area	Road Surface Condition	Non

Others

Summary information sheet of Candidate Projects(Road Disaster)

No.	RD-9		
Project name	D075 (46-77 km Post)"Oqtosh-Yangirobot-Langar-Chuya"		
Responsible organization	MOT	Related Organization	CR
Project cost	Approx. 10.8 Million USD		

Project Summary

It is a national highway D75 (two-lane road) that connects Kyzylbulak to Chuya and passes through steep mountainous areas with many hazardous slopes with rockfall and debris flow (flash flood). The traffic volume is approximately 1,300 to 1,500 vehicles per day. Most of the traffic is from rural mountain areas and tourists to the historical city in Nurata and for transporting logistics of local agricultural products, etc.

Location Map



Scope	Countermeasures for Rockfall (8 sections), Flash Flood (1 section)			
State	Navoi Region			
Road Condition	Road Class	National Highway	Number of Lane	2 lanes
	Carriageway Width	12 m	Shoulder Width	1.5m (0.75m×2)
	Pedestrian Walk	Non	Pavement	Asphalt Pavement
	Disaster Risk	Rockfall/Flash Flood	Traffic Volume	9,000-11,000 vehicles/day
	Roadside Conditions	Moutainous Area	Road Surface Condition	Non

Others

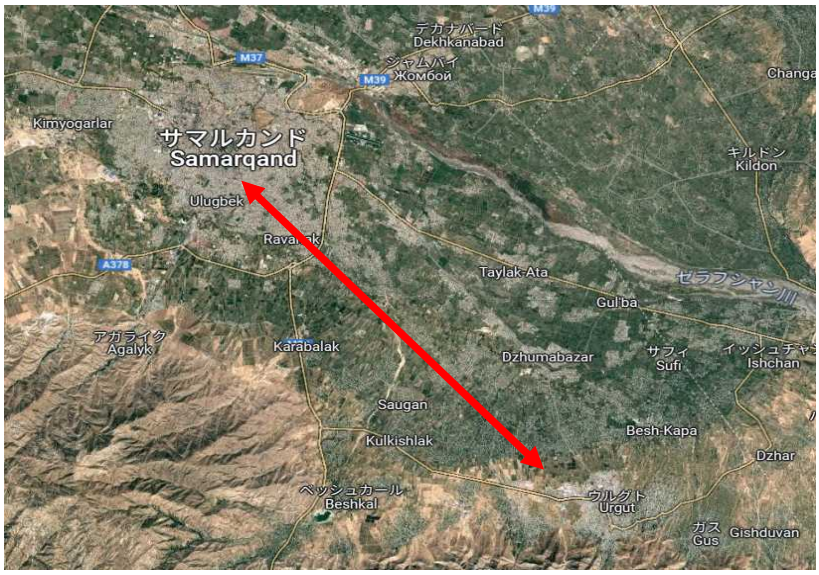
Summary information sheet of Candidate Projects (Railway)

No.	RW-1		
Project Name	Construction of electrified railway along the “Samarkand-Urgut” route (50km)		
Responsible Organization	UTY	Related Organization	
Project cost	USD 619.5 million		

Project summary

The project is to build a new electrified line to Urgut from Samarkand. The line connects cities with large populations. The project is designed to meet the demand for commuting and for factories along the line.

Location map



Scope	Construction of New Railway
State	Samarkand

Others

Summary information sheet of Candidate Projects (Railway)

No.	RW-2		
Project Name	Construction of electrified railway along the “Tashkent-Parkent” route		
Responsible Organization	UTY	Related Organization	
Project cost	USD 495.6 million		

Project summary

A new electrified line will be built to Perkent, from Tashkent. The cities have a large population, and the main purpose of the project is to meet the demand for commuting.

Location map



Scope	Construction of New Railway
State	Tashkent

Others

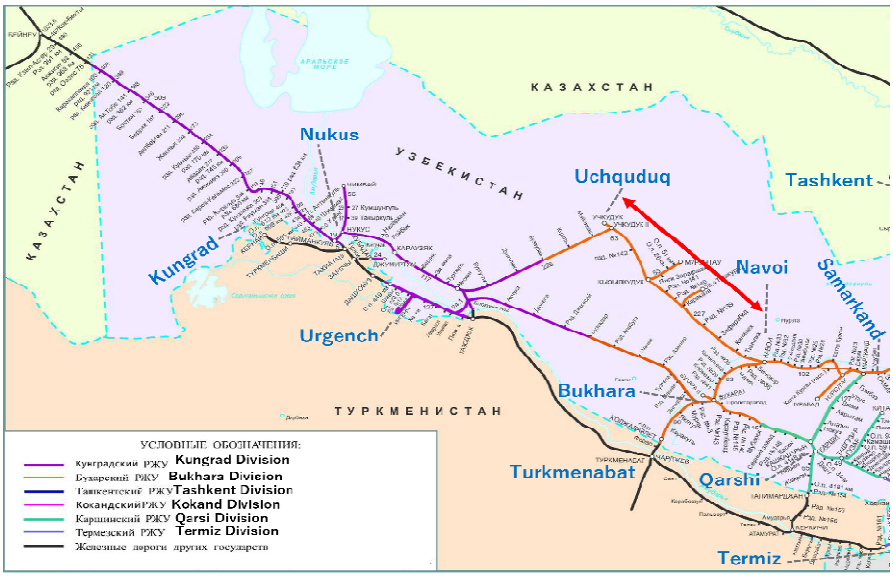
Summary information sheet of Candidate Projects (Railway)

No.	RW-3		
Project Name	Electrification of Navoi-Uchkuduk railway line		
Responsible Organization	UTY	Related Organization	
Project cost	USD 355 million		

Project summary

The project is to electrify the section from Navoi to Uchkuduk. It is expected to contribute to the efficiency and energy saving of freight transportation from Uchkuduk, where uranium ore is produced.

Location map



Scope	Electrification of Existing Line
State	Navoi, Uchukuduk

Others

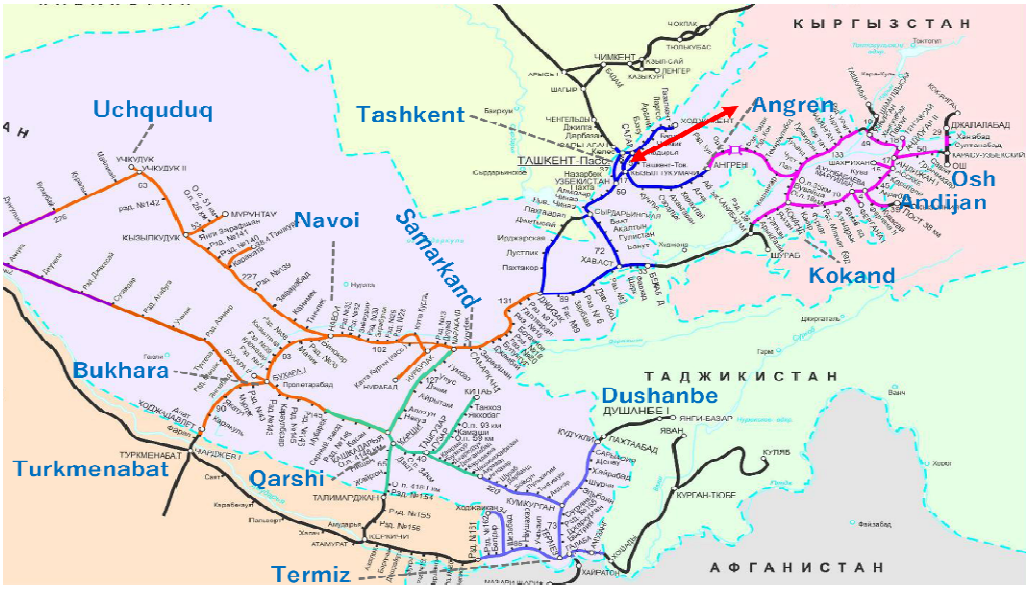
Summary information sheet of Candidate Projects (Railway)

No.	RW-4		
Project Name	Construction of second electrified railway line Tashkent-Angren		
Responsible Organization	UTY	Related Organization	
Project cost	USD 1,239 million		

Project summary

The project is to double-track the existing line from Tashkent to Angren. The number of trains to the Fergana Basin and Kyrgyzstan can be expanded.

Location map



Scope	Double Tracking
State	Tashkent, Fergana

Others

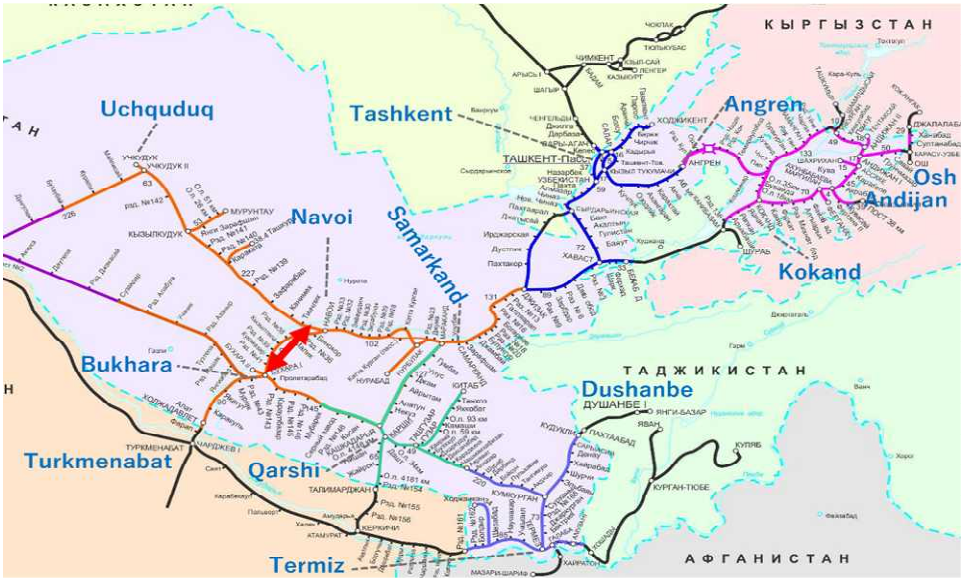
Summary information sheet of Candidate Projects (Railway)

No.	RW-5		
Project Name	Construction of second track of electrified high-speed railway line on Navoi-Bukhara section		
Responsible Organization	UTY	Related Organization	
Project cost	USD 1,117 million		

Project summary

The double-tracking of the Navoi – Bukhara section is considered to be a response to high speed running. It is expected to shorten the travel time from Tashkent, the capital, to major cities in the west and increase the number of trains due to increased track capacity.

Location map



Scope	Double Tracking
State	Navoi, Bukhara

Others

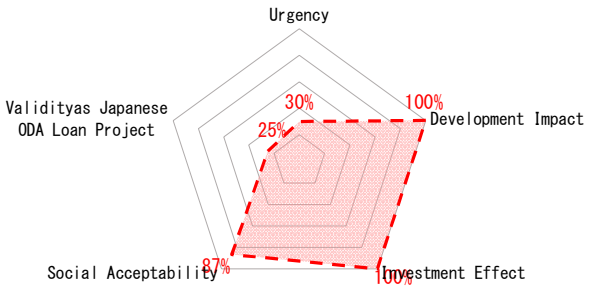
Appendix-2: Scoring Sheets for Draft Shortlist

Scoring Sheets for Shortlist (Road)

No.	RO-1
Project	A373 "Tashkent-Osh" highway(309-354 km)

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		3	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways	Rehabilitation: international roads with an average IRI of 4.2.		
		【0】	Rehabilitation: Other than the above Lane widening: Other than above			
	Subtotal				3	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and connects to the border with Kyrgyzstan.	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.	The project is connected to both the planned PPP project within Uzbekistan, the 'Tashkent–Andijan' toll road, and the Kyrgyzstan border. It also connects to Osh, which is a key city along the Kyrgyz OBI road.	5	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	As this is a rehabilitation project for an existing road, the project risk is low.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				40	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 18 billion yen (subject to sectioning and other factors).	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=14%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of the pavement condition will reduce some noise and vibration, but negative impacts may also occur.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	As this is a rehabilitation project for an existing roadway, no residential relocations will be required.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				13	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing ONE DAY PAVE. (a rapid traffic reopening method in environments with strict traffic regulations, such as urban areas)		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				5	
Total Score					76	

Chart

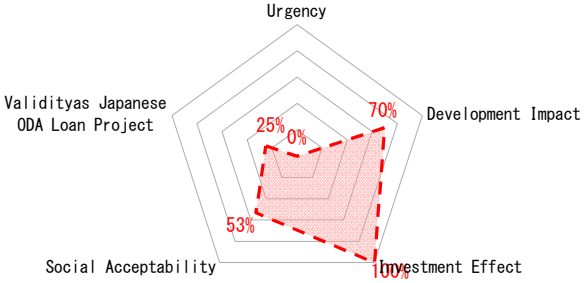


Scoring Sheets for Shortlist (Road)

No.	RO-2
Project	D107 (4P114) "Namangan city - Kosansoy City (0 - 37 km)

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		0	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways			
		【0】	Rehabilitation: Other than the above Lane widening: Other than above	Lane widening: national highways with a VCR of 0.27		
	Subtotal				0	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		15	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.	National highways connecting to the border with Kyrgyzstan.		
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	No synergistic effects expected.		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	As the project involves widening through urban areas, it carries project risks, including environmental factors such as residential relocation and delays in land acquisition		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				28	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 9.5 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=12%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of pavement conditions will reduce some noise and vibration, but negative impacts may also arise.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	The widening will be carried out in sections where no large-scale residential relocations are required.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing ONE DAY PAVE. (a rapid traffic reopening method in environments with strict traffic regulations, such as urban areas)		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				5	
Total Score					56	

Chart



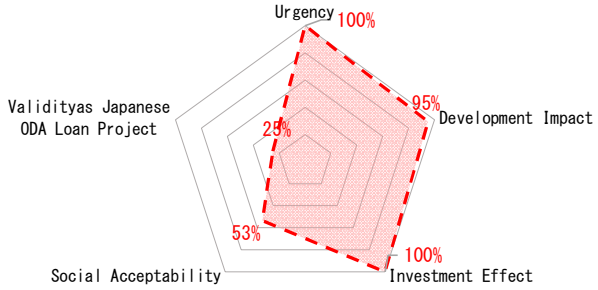
Scoring Sheets for Shortlist (Road)

No.	RO-3
Project	A-377 "Samarkand sh-Ayniy" highway (0 - 36 km)

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more	Lane widening: international roads with a VCR of 1.21	10	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways			
		【0】	Rehabilitation: Other than the above Lane widening: Other than above			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and connects to the border with Afghanistan.	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.	Connected to the planned PPP project within Uzbekistan ("Tashkent–Samarkand" toll road) and the Tajikistan border.	5	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Due to road widening through urban areas, the project risks (environmental factors: resident relocation, delays in land acquisition).		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				38	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 9 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=15%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of pavement conditions will reduce some noise and vibration, but negative impacts may also arise.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	The widening will be carried out in sections where no large-scale residential relocations are required.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	

Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing ONE DAY PAVE (a rapid traffic reopening method in environments with strict traffic regulations, such as urban areas)		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				5	
Total Score					76	

Chart



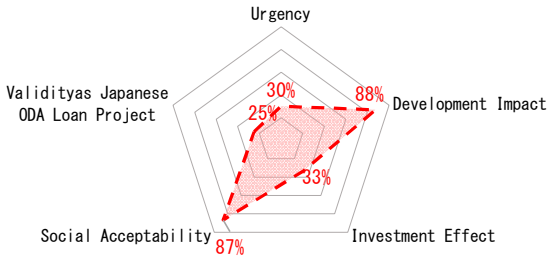
Scoring Sheets for Shortlist (Road)

No.	R0-4
Project	M39 "Khairaton entrance" highway (0 - 30 km)

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		3	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways	Rehabilitation: international roads with an average IRI of 4.36		
		【0】	Rehabilitation: Other than the above Lane widening: Other than above			
	Subtotal				3	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and connects to the border with Afghanistan	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	No synergistic effects expected		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	As this is a rehabilitation project for an existing road, the project risk is low.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				35	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 10.5 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	EIRR=0%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of pavement conditions will reduce some noise and vibration, but negative impacts may also arise.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	As this is a rehabilitation project for an existing road, there will be no need for residential relocation.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				13	

Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing ONE DAY PAVE (a rapid traffic reopening method in environments with strict traffic regulations, such as urban areas)		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				5	
Total Score					61	

Chart

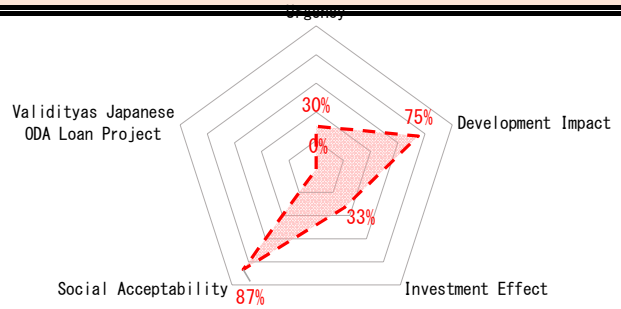


Scoring Sheets for Shortlist (Road)

No.	RO-5
Project	D168 (4P-99) "Manguzar village-Khotinrabot village-Shakhrituz village" highway (0 - 49 km)

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		3	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways	Rehabilitation: national roads with an average IRI of 4.22		
		【0】	Rehabilitation: Other than the above Lane widening: Other than above			
	Subtotal				3	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		15	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.	National highways connecting to the border with Afghanistan		
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	No synergistic effects expected		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	As the project involves rehabilitation of an existing road, the project risk is low.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				30	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 6.5 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	EIRR=4%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of pavement conditions will reduce some noise and vibration, but negative impacts may also arise.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	As this is a rehabilitation project for an existing road, there will be no need for residential relocation.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				13	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		0	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.	Due to the flat terrain, there is no possibility of introducing technologies or products that are typically strong points of domestic expertis		
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				0	
Total Score					51	

Chart

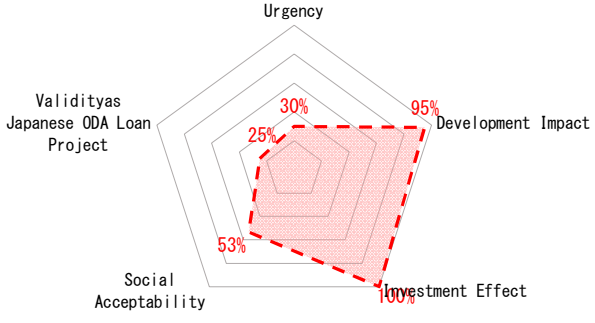


Scoring Sheets for Shortlist (Road)

No.	RO-6
Project	A-376 "Ko'kon-Jizzakh" highway (14 – 45 km)

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		3	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways	Lane widening: international roads with a VCR of 0.68		
		【0】	Rehabilitation: Other than the above Lane widening: Other than the above			
	Subtotal				3	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and connects to the border with Kyrgyzstan	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.	Connected to the planned PPP project in Uzbekistan ("Tashkent–Samarkand" toll road) and the Tajikistan border.	5	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Due to road widening through urban areas, the project carries risks (environmental factors: resident relocation, delays in land acquisition).		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				38	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 7.5 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=14%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of pavement conditions will reduce some noise and vibration, but negative impacts may also arise.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	The widening will be carried out in sections where no large-scale residential relocations are required.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing ONE DAY PAVE (a rapid traffic reopening method in environments with strict traffic regulations, such as urban areas)		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				5	
Total Score					69	

Chart

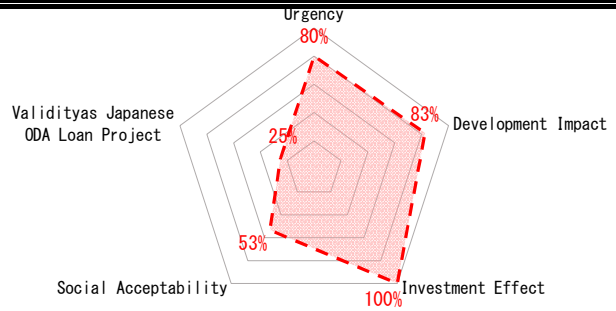


Scoring Sheets for Shortlist (Road)

No.	RO-7
Project	D089 "Fergana city -Kuvasai city- (6 - 25 km)

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		8	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads	Lane widening: national highways with a VCR of 1.46.		
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways			
		【0】	Rehabilitation: Other than the above Lane widening: Other than above			
	Subtotal				8	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		15	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.	National highways connecting to the border with Kyrgyzstan.		
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.	Connects to the Kyrgyz border and also links to the OBI road.	5	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	As the widening project passes through urban areas, it carries project risks related to environmental factors such as resident relocation and delays in land acquisition.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				33	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 5 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=19%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The improvement of pavement conditions will reduce some noise and vibration, but negative impacts may also arise.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	The widening will be carried out in sections where no large-scale residential relocations are required.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validitas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing ONE DAY PAVE. (a raApid traffic reopening method in environments with strict traffic regulations, such as urban areas)		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				5	
Total Score					69	

Chart

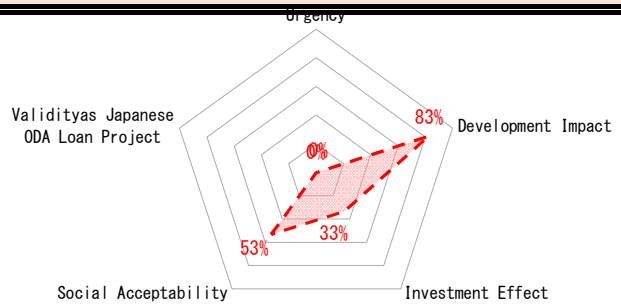


Scoring Sheets for Shortlist (Road)

No.	RO-8
Project	A380 "Guzar-Bukhara-Nukus-Beineu" highway(765-806 km)

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		0	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways			
		【0】	Rehabilitation: Other than the above Lane widening: Other than above	New bypass project, with an existing road VCR of 0.16.		
	Subtotal				0	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and lies along the Caspian Sea route.	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	No synergistic effects expected		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	As this is a new bypass project, it involves project risks. (environmental factors: resident relocation, delays in land acquisition)		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				33	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 11.5 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=22%	0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	EIRR=-5%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The alleviation of congestion will reduce some noise and vibration, but negative impacts may also occur.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	Residential relocations will be necessary; however, the number of cases involved will be limited.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		0	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.	Due to the flat terrain, there is no possibility of introducing technologies or products that are typically strong points of domestic expertis		
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				0	
Total Score					46	

Chart

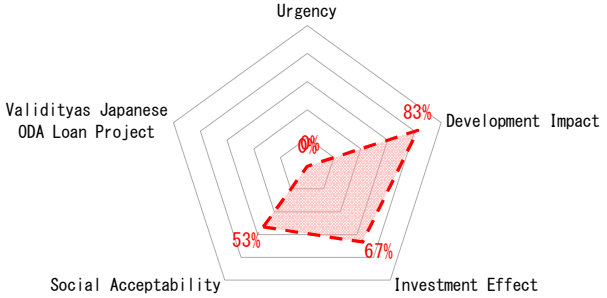


Scoring Sheets for Shortlist (Road)

No.	RO-9
Project	M37 "Samarkand-Bukhara-Turkmenbashi

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		0	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads			
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways			
		【0】	Rehabilitation: Other than the above Lane widening: Other than above	New bypass project, with an existing road VCR of 0.44.		
	Subtotal				0	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and lies along the Caspian Sea route.	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	No synergistic effects expected		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53, 91, and 92.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	As this is a new bypass project, it involves project risks. (environmental factors: resident relocation, delays in land acquisition)		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				33	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 21 billion yen.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		5	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	EIRR=9%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The alleviation of congestion will reduce some noise and vibration, but negative impacts may also occur.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	Residential relocations will be necessary; however, the number of cases involved will be limited.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		0	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.	Due to the flat terrain, there is no possibility of introducing technologies or products that are typically strong points of domestic expertis		
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		0	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products	There is a low possibility of participation by domestic contractors and the introduction of domestic technology and products.		
	Subtotal				0	
Total Score					51	

Chart

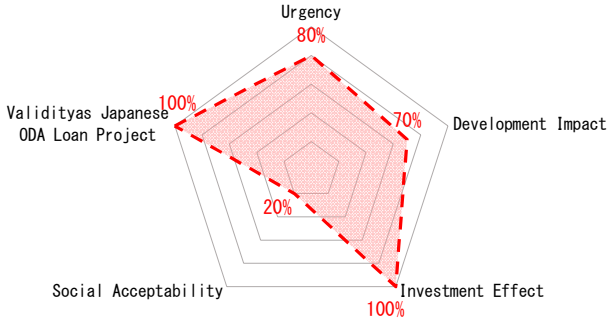


Scoring Sheets for Shortlist (Road)

No.	RO-10
Project	M39 "Takhtaqoracha tunnel"

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Rehabilitation: International roads with road surface condition (average IRI*) of 7.5 or higher Lane widening: International roads with VCR of 1.0 or more		8	10
		【8】	Rehabilitation: International roads with road surface condition (average IRI) of 4.5 or more, or national roads with road surface condition (average IRI) of 7.5 or more Lane widening: VCR 0.8 or more on international roads, or VCR 1.0 or more on national roads	Lane widening: national highways with a VCR of 0.88.		
		【5】	Rehabilitation: International roads with road surface condition (average IRI) of 3.0 or more, or national roads with road surface condition (average IRI) of 4.5 or more or higher VCR 0.8 or more on national highways			
		【3】	Rehabilitation: National highways with road surface conditions (average IRI) of 3.0 or higher VCR 0.6 or more on national highways			
		【0】	Rehabilitation: Other than the above Lane widening: Other than above			
	Subtotal				8	
Development Impact	Improvement of Connectivity	【20】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The route is part of both the TRACECA and CAREC corridors and lies along the Caspian Sea route.	20	20
		【15】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【10】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【5】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	No synergistic effects expected		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	This project is consistent with Uzbekistan's Strategy 2030, particularly aligning with Goals 53.		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	It involves project risks. *As it is expected that the project will be implemented using STEP, there is no technical risk in the implementation of the project by Japanese companies.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				28	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The estimated project cost is approximately 38 billion yen. (Based on previous survey results) It may be possible to keep the cost within around 20 billion yen, depending on phasing, etc.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=16%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	The alleviation of congestion will reduce some noise and vibration, but negative impacts may also occur.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		0	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)	There is a possibility that the project will be carried out near a natural park area.		
	Subtotal				3	
Validitys Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.	The project is expected to be implemented through the application of STEP (application of Japanese technology).	10	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating	The project is expected to be implemented through the application of STEP (application of Japanese technology).	10	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.			
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				20	
Total Score					74	

Chart

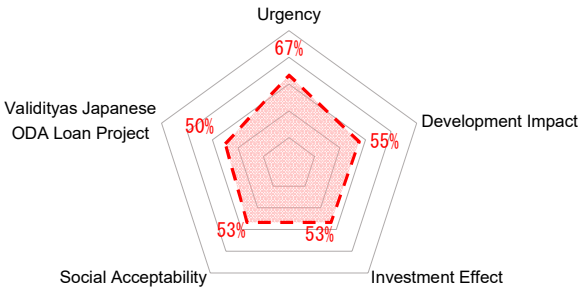


Scoring Sheets for Shortlist (Bridge)

No.	1 (Kara-1, Kara-2, Kara-9)
Project	Bridge Project in Republic of Karakalnpakstan

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation	Kara-1(the substructure is in very poor condition). This does not comply with Uzbekistan's Bridge Design Standard (1997).	7	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	Kara-2 and Kara-9 do not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				7	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province located along the Caspian Sea route		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		1	5
		【3】	Synergy with other projects can be ensured	Kara-1(A380) : Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected	Kara-2(4R-259),Kara-9(4R-175)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Kara-1(A380)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Kara-2(4R-259),Kara-9(4R-175)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Kara-2(4R-259),Kara-9(4R-175)	4	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Kara-1(A380): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				22	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Kara-1: EIRR=26%	3	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Kara-2: EIRR=3%, Kara-9: EIRR=0%		
	Subtotal				8	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					55	

Chart

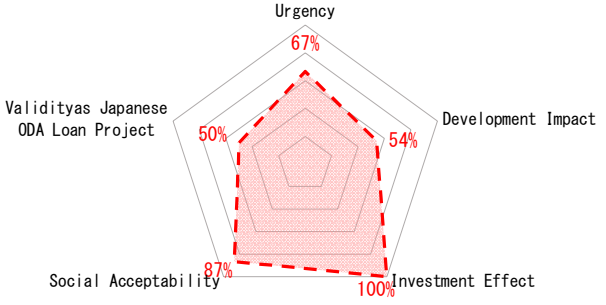


Scoring Sheets for Shortlist (Bridge)

No.	2 (Andij-1, Andij-2, Andij-4)
Project	Bridge Project in Andijan region

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation	Kara-2 (the substructure is in very poor condition). This does not comply with Uzbekistan's Bridge Design Standard (1997).	7	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	Andij-1 and Andij-4 do not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				7	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province along the Kyrgyzstan border		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	Andij-1(M41), Andij-2(4P126), Andij-4(4P130)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Andij-1(M41)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Andij-2(4P126), Andij-4(4P130)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Andij-1(M41), Andij-2(4P126), Andij-4(4P130)	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				22	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Andij-1: EIRR=31%, Andij-2: EIRR=22% Andij-4: EIRR=24%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	Confirmed that there are no houses around the bridge.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				13	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					66	

Chart

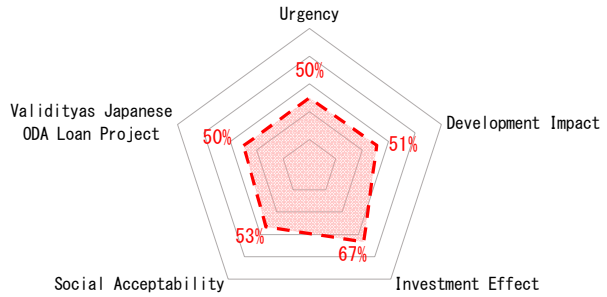


Scoring Sheets for Shortlist (Bridge)

No.	3 (Bukh-1, Bukh-2, Bukh-3, Bukh-7, Bukh-8)
Project	Bridge Project in Bukhara region

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	All of the target bridges do not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province located along the Caspian Sea route		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	Bukh-1(M37), Bukh-2(M37), Bukh-3(4R76), Bukh-7(4R75), Bukh-8(4P48)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Bukh-1(M37), Bukh-2(M37)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Bukh-3(4R76), Bukh-7(4R75), Bukh-8(4P48)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Bukh-7(4R75)	3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Bukh-1(M37), Bukh-2(M37),Bukh-3(4R76),Bukh-8(4P48): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				20	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Bukh-1: EIRR>50%, Bukh-2: EIRR=27%	5	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	Bukh-3: EIRR=8%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Bukh-7: EIRR=5%, Bukh-8: EIRR=3%		
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					53	

Chart

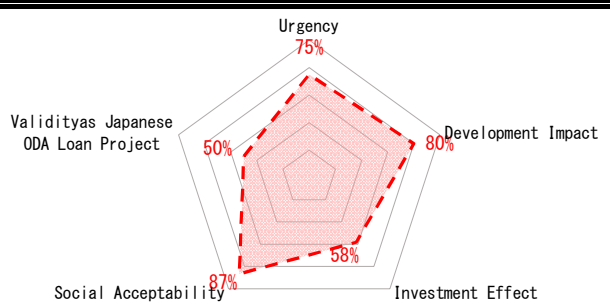


Scoring Sheets for Shortlist (Bridge)

No.	4 (Jizakh-1, Jizakh-2, Jizakh-5, Jizakh-6)
Project	Bridge Project in Jizzakh region

Evaluation Item				Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium						
Urgency	–	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		Jizakh-1, Jizakh-2: The substructure is in very poor condition. This does not comply with Uzbekistan's Bridge Design Standard (1997).	8	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions		Jizakh-5 and Jizakh-6 do not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)				
	Subtotal					8	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		A province along the Tajikistan border, as well as a province on the Caspian Sea route	20	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.				
		【10】	Other than the above				
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.			1	5
		【3】	Synergy with other projects can be ensured		Jizakh-2(M39) : Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected		Jizakh-1(4P43), Jizakh-5(4P35), Jizakh-6(4P39)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		Jizakh-2(M39)	6	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		Jizakh-1(4P43), Jizakh-5(4P35), Jizakh-6(4P39)		
		【0】	Not consistent with development plans				
	Project Risk	【5】	No project risk		Jizakh-1(4P43), Jizakh-2(M39), Jizakh-5(4P35), Jizakh-6(4P39)	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.				
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.				
	Subtotal					32	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)		The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above				
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		Jizakh-2: EIRR=27%	4	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%		Jizakh-5: EIRR=7%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)		Jizakh-1: EIRR=4%, Jizakh-6: EIRR=4%		
	Subtotal					9	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).			3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).		Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).				
	Resettlement	【10】	JICA Environmental Category C (no relocation)		Confirmed that there are no houses around the bridge.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)				
		【0】	JICA Environment Category A (over 200 relocations)				
	Subtotal					13	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.			5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.		There is a possibility of introducing prefabricated construction methods, integral abutment bridges, and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.				
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating			5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.		There is a possibility of introducing prefabricated construction methods, integral abutment bridges, and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products				
	Subtotal					10	
Total Score						71	

Chart

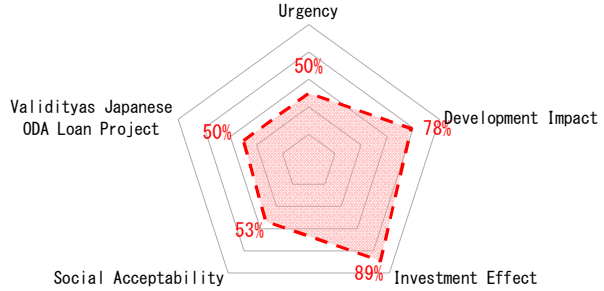


Scoring Sheets for Shortlist (Bridge)

No.	5 (Kash-2, Kash-3, Kash-5)
Project	Bridge Project in Kashkadarya region

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	Kash-2: the substructure is in very poor condition Kash-3 and Kash-5 do not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.	A province along the Tajikistan border, as well as a province on the Caspian Sea route	20	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.			
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		1	5
		【3】	Synergy with other projects can be ensured	Kash-3(A380): Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected	Kash-2(4P87), Kash-5(4P90)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Kash-3(A380)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Kash-2(4P87), Kash-5(4P90)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Kash-5(4P90)	4	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Kash-2(4P87),Kash-3(A380): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				31	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Kash-2: EIRR=29%,Kash-5: EIRR=12%	8	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	Kash-3: EIRR=11%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				13	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					68	

Chart

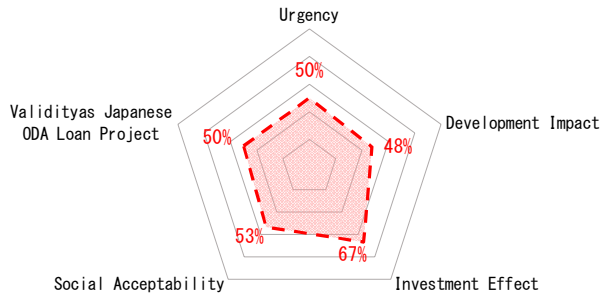


Scoring Sheets for Shortlist (Bridge)

No.	6 (Navoiy-2, Navoiy-3)
Project	Bridge Project in Navoiy region

Evaluation Item				Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium						
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province located along the Caspian Sea route		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	Navoiy-2(4P48), Navoiy-3(4P48B)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Navoiy-2(4P48), Navoiy-3(4P48B)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Navoiy-3(4P48B)	4	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Navoiy-2(4P48): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				19	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Navoiy-2: EIRR=29%	5	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Navoiy-3: EIRR=1%		
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					52	

Chart

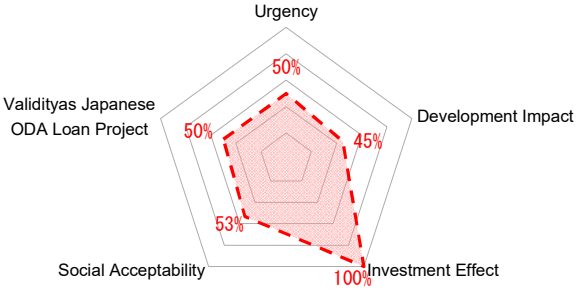


Scoring Sheets for Shortlist (Bridge)

No.	7 (Nam-1, Nam-4, Nam-6)
Project	Bridge Project in Namangan region

Evaluation Item				Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium						
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal					5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province along the Kyrgyzstan border		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	Nam-1(4P126), Nam-4(4P126), Nam-6(4P126)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Nam-1(4P126), Nam-4(4P126), Nam-6(4P126)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Nam-1(4P126), Nam-4(4P126), Nam-6(4P126): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal					18	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Nam-1: EIRR=34%, Nam-4: EIRR=31% Nam-6: EIRR>50%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal					15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal					8	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal					10	
Total Score						56	

Chart

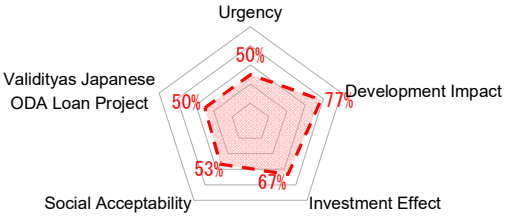


Scoring Sheets for Shortlist (Bridge)

No.	8 (Samar-3, Samar-4, Samar-5, Samar-6, Samar-7, Samar-8, Samar-10, Samar-12)
Project	Bridge Project in Samarkand region

Evaluation Item				Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium						
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal					5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.	A province along the Tajikistan border, as well as a province on the Caspian Sea route	20	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.			
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		1	5
		【3】	Synergy with other projects can be ensured	Samar-12(M37): Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected	Samar-3(4P47), Samar-4(4P49), Samar-5(4P50), Samar-6(4P47), Samar-7(Under confirmation), Samar-8(4P238), Samar-10(4P49)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Samar-12(M37)	6	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Samar-3(4P47), Samar-4(4P49), Samar-5(4P50), Samar-6(4P47), Samar-7(Under confirmation), Samar-8(4P238), Samar-10(4P49)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Samar-4(4P49), Samar-6(4P47), Samar-8(4P238), Samar-10(4P49),Samar-12(M37)	4	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Samar-3(4P47), Samar-5(4P50), Samar-7(Under confirmation): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal					31	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Samar-7: EIRR=24%	5	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	Samar-3: EIRR=5%, Samar-4: EIRR=8%,,Samar-5: EIRR=8%, Samar-6: EIRR=11% Samar-8: EIRR=8%, Samar-10: EIRR=10%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Samar-12: EIRR=2%		
	Subtotal					10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal					8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing steel bridge replacement, integral abutment bridges, and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing steel bridge replacement, integral abutment bridges, and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal					10	
Total Score						64	

Chart

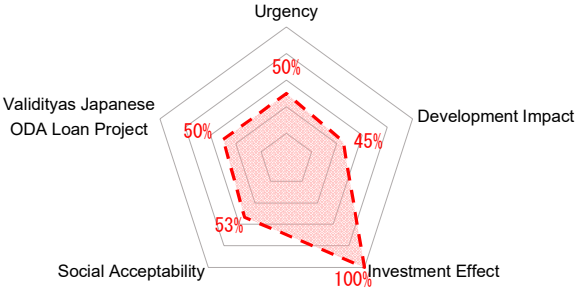


Scoring Sheets for Shortlist (Bridge)

No.	9 (Surkh-1)
Project	Bridge Project in Surkhandarya region

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province along the Afghanistan border		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	Surkh-1(4P108)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Surkh-1(4P108)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Surkh-1(4P108): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				18	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Surkh-1: EIRR=18%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					56	

Chart

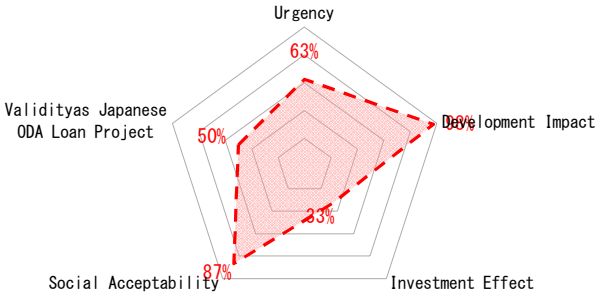


Scoring Sheets for Shortlist (Bridge)

No.	10 (Sird-1, Sird-2, Sird-3, Sird-5)
Project	Bridge Project in Syrdarya region

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation	Sird-3(Bridge over the railway): The bridge's structural condition (emergency intervention level) is not poor, but it spans a railway.	6	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				6	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.	A province along the Tajikistan border, as well as a province on the Caspian Sea route	20	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.			
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.	Sird-1(A376), Sird-2(A376), Sird-3(A376): An international road located near the border with Tajikistan	5	5
		【3】	Synergy with other projects can be ensured	Sird-5(M39): Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Sird-1(A376), Sird-2(A376), Sird-3(A376), Sird-5(M39)	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Sird-1(A376), Sird-2(A376), Sird-5(M39)	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Sird-3(A376): Bridge over the railway		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				39	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Sird-1: EIRR=1%, Sird-2: EIRR=1%, Sird-3: EIRR=1%, Sird-5: EIRR=5%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	Confirmed that there are no houses around the bridge.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				13	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing prefabricated construction methods, integral abutment bridges, and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing prefabricated construction methods, integral abutment bridges, and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					73	

Chart

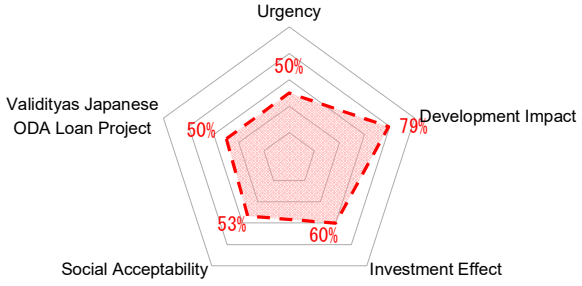


Scoring Sheets for Shortlist (Bridge)

No.	11 (Tash-1, Tash-2, Tash-3, Tash-6, Tash-7, Tash-8)
Project	Bridge Project in Tashkent region

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.	A province along the Kyrgyzstan and Tajikistan borders, as well as a province on the Caspian Sea route	20	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.			
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		1	5
		【3】	Synergy with other projects can be ensured	Tash-1(M39), Tash-2(A373): Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected	Tash-3(4P87), Tash-6(4P23B), Tash-7(4P253), Tash-8(Under confirmation)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Tash-1(M39), Tash-2(A373)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Tash-3(4P87), Tash-6(4P23B), Tash-7(4P253), Tash-8(Under confirmation)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Tash-1(M39), Tash-2(A373), Tash-8(Under confirmation)	4	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Tash-3(4P87), Tash-6(4P23B), Tash-7(4P253): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				32	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		4	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	Tash-2: EIRR=9%, Tash-3: EIRR=7%, Tash-6: EIRR=6% Tash-7: EIRR=7%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Tash-1: EIRR=3%,		
	Subtotal				9	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					64	

Chart

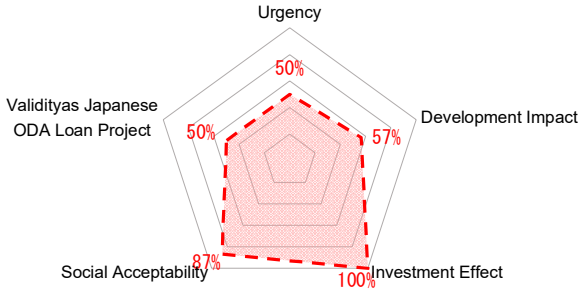


Scoring Sheets for Shortlist (Bridge)

No.	12 (Ferg-3, Ferg-4, Ferg-7)
Project	Bridge Project in Fergana region

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province along the Kyrgyzstan and Tajikistan borders		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		1	5
		【3】	Synergy with other projects can be ensured	Ferg-7(A373): Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected	Ferg-3(4P112), Ferg-4(4P154)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Ferg-7(A373)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Ferg-3(4P112), Ferg-4(4P154)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	Ferg-3(4P112), Ferg-4(4P154),Ferg-7(A373)	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				23	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Ferg-3: EIRR=50%<, Ferg-4: EIRR=50%< Ferg-7: EIRR=50%<	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	Confirmed that there are no houses around the bridge.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				13	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					66	

Chart

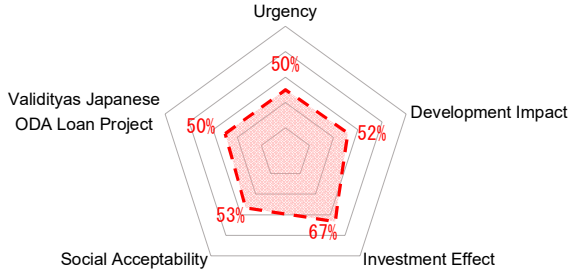


Scoring Sheets for Shortlist (Bridge)

No.	13 (Khor-2, Khor-3, Khor-5)
Project	Bridge Project in Khorezm region

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	—	【10】	Bridge soundness (emergency measures stage) and design load does not match current situation		5	10
		【5】	Bridge soundness (emergency action stage) or design loads do not match current conditions	This does not comply with Uzbekistan's Bridge Design Standard (1997).		
		【3】	Bridge Soundness (Early Action Stage)			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【20】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, and The province along the Caspian Sea route.		10	20
		【15】	Border provinces of Tajikistan, Kyrgyzstan and Afghanistan, or The province along the Caspian Sea route.	A province located along the Caspian Sea route		
		【10】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		1	5
		【3】	Synergy with other projects can be ensured	Khor-2(M37): Synergies with the CAREC logistics corridor project can be secured.		
		【0】	No synergistic effects expected	Khor-3(4P164), Khor-5(4P156)		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Khor-2(M37)	7	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Khor-3(4P164), Khor-5(4P156)		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	Khor-2(M37), Khor-3(4P164), Khor-5(4P156): There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				21	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	The scale of the bridge project alone is small, but it aligns with the scale of yen loan projects when packaged together.	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	Khor-3: EIRR=29%	5	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	Khor-2: EIRR=6%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	Khor-5: EIRR=3%		
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		3	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).	Minimal impact on the natural environment.		
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)		5	10
		【5】	JICA Environment Category B (1 to 199 relocations)	There is a possibility of resident relocation due to diversion during the bridge replacement.		
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				8	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	There is a possibility of introducing integral abutment bridges and erosion control measures.		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					54	

Chart

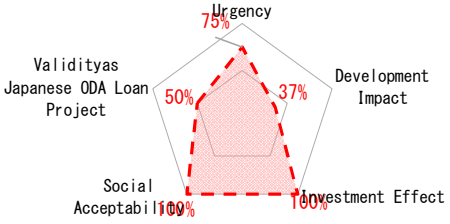


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-2
Project	A373 (103-177km Post) "Tashkent-Osh"

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		15	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.	The target route is an international road, and 13 landslides have occurred over the past three years, affecting traffic. Currently, it is the only main road connecting the Fergana region and Tashkent; however, a highway project connecting Tashkent and Andijan (a PPP project) is being promoted, and in the future, traffic is expected to shift to the highway as an alternative route is developed.		
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years			
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster			
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				15	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		3	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads	The target section is not a route that directly enhances connectivity with the Kyrgyz and Tajik borders, but as it is part of the same road as the border routes, it indirectly contributes to strengthening border connectivity.		
		【0】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to have synergies with this route (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Currently, it is the only main (international) road connecting the Fergana region and Tashkent, but a highway project connecting Tashkent and Andijan (a PPP project) is being promoted, and traffic is expected to shift to the highway in the future. Therefore, the project aligns with Uzbekistan's Strategy 2030 (Target No. 53: Enhancing the potential of the domestic transport system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	There are concerns that geological risks may cause delays in the project schedule for landslide countermeasures.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				11	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 5.82 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=15%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This project involves slope protection works against rockfalls and landslides in a mountainous area with few settlements, and the environmental impact is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residences near the project site, and no resettlement of residents will be required.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies handling rockfall fences and nets show strong interest in the project. (Provided that budget constraints and creditworthiness of local suppliers are not an issue, it is possible to supply products even to overseas companies.)		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					66	

Chart

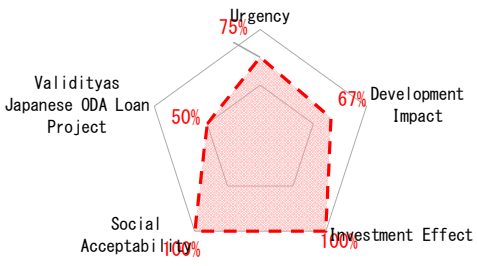


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-3
Project	M39 (1115-1145 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		15	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.	The target route is an international road, and in 2024, it suffered damage due to landslides and rockfalls. As an alternative route, International Road A378 has been developed.		
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years			
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster			
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				15	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The target section falls under CAREC and TRACECA, and is part of the Caspian Sea route, directly contributing to enhanced connectivity.	10	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【0】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to have synergies with this route (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	The project aligns with Uzbekistan's Strategy 2030 (Target No. 53: Enhancing the potential of the domestic transport system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	There are no particular risks.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				20	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 0.38 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=14%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This project involves debris flow and rockfall countermeasures in a mountainous area with few settlements, and its impact on the natural environment is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residences near the project site, so no resettlement of residents will be required.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies that handle rockfall fences and nets have shown strong interest. (As long as budget constraints and the creditworthiness of local suppliers are not an issue, it is possible to supply products to overseas companies as well.)"		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					75	

Chart

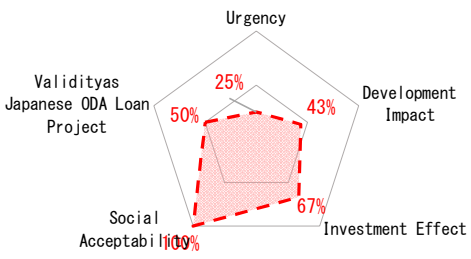


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-4
Project	M39 (1305-1315 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		5	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.			
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years			
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster	The target road is an international route, and while slopes with rockfall risks have been identified, no disasters have occurred in the past three years.		
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		3	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads	Although the target road (section) is not directly connected to strengthening border connectivity between Kyrgyzstan and Tajikistan, it is part of the same route as the border road and therefore contributes indirectly to enhancing border connectivity.		
		【0】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to generate synergistic effects with this road (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	The project aligns with Uzbekistan's Strategy 2030 (Goal No. 53: Enhancing the potential of the domestic transportation system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	No particular risks have been identified.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				13	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 0.19 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		5	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%	EIRR=8%		
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This is a project involving rockfall protection works in hilly areas with few settlements, and the environmental impact is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residential houses in the vicinity of the project site, and no resettlement of residents will occur.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies handling rockfall fences and nets show strong interest in the project. (Provided that budget constraints and creditworthiness of local suppliers are not an issue, it is possible to supply products even to overseas companies.)		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					53	

Chart

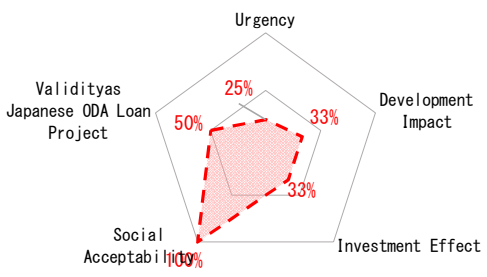


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-5
Project	D149 (21-25 km Post) "Langar-Maidanak"

Evaluation Item				Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium						
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		5	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.			
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years			
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster	The target road is a national highway, and while slopes with rockfall risks have been identified, no disasters have occurred in the past three years.		
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		0	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【0】	Other than the above	The target road (section) is a secondary arterial road of the international highway (M39) and does not fall under a road (section) that directly or indirectly contributes to border connectivity.		
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to generate synergistic effects with this road (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	The project aligns with Uzbekistan's Strategy 2030 (Goal No. 53: Enhancing the potential of the domestic transportation system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	No particular risks have been identified.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				10	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 0.05 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	EIRR=9%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This is a project involving rockfall protection works in hilly areas with few settlements, and the environmental impact is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residential houses in the vicinity of the project site, and no resettlement of residents will occur.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies handling rockfall fences and nets show strong interest in the project. (Provided that budget constraints and creditworthiness of local suppliers are not an issue, it is possible to supply products even to overseas companies.)		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					45	

Chart

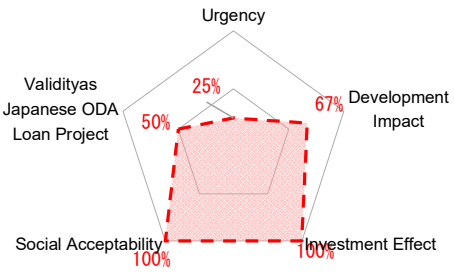


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-6
Project	M39 (993-1013 km Post) "Almaty- Bishkek-Tashkent-Shahrisabz-Termez"

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		5	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.			
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years			
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster	The target road is an international route, and while slopes with rockfall risks have been identified, no disasters have occurred in the past three years.		
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.	The target road (section) is part of the CAREC and TRACECA, and is located on the Caspian Sea route, directly contributing to connectivity enhancement.	10	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【0】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to generate synergistic effects with this road (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	The project aligns with Uzbekistan's Strategy 2030 (Goal No. 53: Enhancing the potential of the domestic transportation system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	No particular risks have been identified.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				20	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 0.24 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)	EIRR=20%	10	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)			
	Subtotal				15	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This is a project involving rockfall protection works in hilly areas with few settlements, and the environmental impact is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residential houses in the vicinity of the project site, and no resettlement of residents will occur.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies handling rockfall fences and nets show strong interest in the project. (Provided that budget constraints and creditworthiness of local suppliers are not an issue, it is possible to supply products even to overseas companies.)		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					65	

Chart

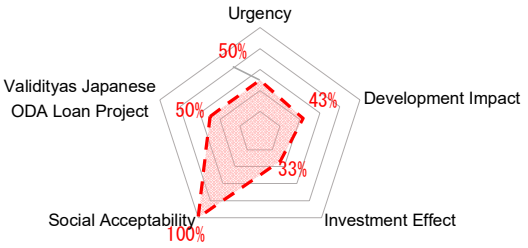


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-8
Project	D050 (38-47 km Post) "M39 Road (from km 962) - Uchtepa Settlement - Jizzakh City - M39 Road (to km 1013)"

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		10	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.			
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years	The target road is a national highway, and within the past three years, road closures and human casualties have occurred due to disasters.		
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster			
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		3	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads	The target road (section) is a secondary arterial road of the Caspian Sea corridor and indirectly contributes to connectivity enhancement.		
		【0】	Other than the above			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to generate synergistic effects with this road (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	The project aligns with Uzbekistan's Strategy 2030 (Goal No. 53: Enhancing the potential of the domestic transportation system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	No particular risks have been identified.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				13	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 1.39 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	EIRR=3%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This is a project involving rockfall protection works in hilly areas with few settlements, and the environmental impact is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residential houses in the vicinity of the project site, and no resettlement of residents will occur.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies handling rockfall fences and nets show strong interest in the project. (Provided that budget constraints and creditworthiness of local suppliers are not an issue, it is possible to supply products even to overseas companies.)		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					53	

Chart

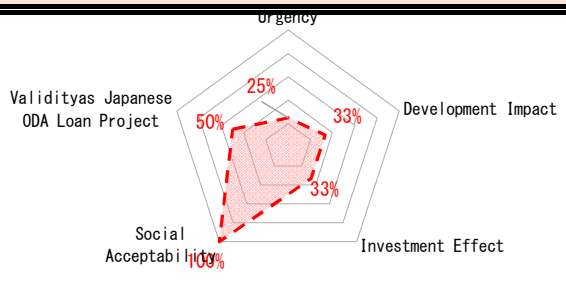


Scoring Sheets for Shortlist (Road Disaster)

No.	RD-9
Project	D075 (46-77 km Post)"Oqtosh-Yangirobot-Langar-Chuya"

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【20】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, and there is no alternative road		5	20
		【15】	Disaster on International Road (M/A) causes road closures and human accidents within the past three years, or Disaster on national road (D) causes road closures and human accidents within the past three years , and there is no alternative route.			
		【10】	Disaster on national road (D) causes road closures and human accidents within the past three years			
		【5】	Routes (sections) that have not experienced a disaster in the past three years but are at risk of disaster	The target road is a national highway, and while slopes with rockfall risks have been identified, no disasters have occurred in the past three years.		
		【0】	Routes (sections) that have no risk of disaster			
	Subtotal				5	
Development Impact	Improvement of Connectivity	【10】	The subject (or route) of the project is located on TRACECA or CAREC, and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. ** Project site (or section) covers the border areas of Tajikistan, Kyrgyzstan, and Afghanistan, or is located on the Caspian Sea route.		0	10
		【5】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project directly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route.			
		【3】	The subject (or route) of the project is located on international road (M/A) or national highway (D/P), and the implementation of the project indirectly contribute** to strengthening connectivity on the borders of Tajikistan, Kyrgyzstan, and Afghanistan, or on the Caspian Sea route. * Secondary roads along the Caspian Sea route or border roads			
		【0】	Other than the above	The target road (section) is not considered to directly or indirectly contribute to border connectivity.		
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	There are no other projects expected to generate synergistic effects with this road (section).		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		5	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	The project aligns with Uzbekistan's Strategy 2030 (Goal No. 53: Enhancing the potential of the domestic transportation system) and Japan's development cooperation policy (support contributing to industrial recovery).		
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk	No particular risks have been identified.	5	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				10	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)	Project cost: Approximately 0.87 billion yen	5	5
		【0】	Other than the above			
	Economic Impact of Development	【10】	Economic Internal Rate of Return (EIRR) of 12% or more (12% : maximum discount rate for World Bank projects)		0	10
		【5】	Economic Internal Rate of Return (EIRR) is between 6% and 12%			
		【0】	Economic Internal Rate of Return (EIRR) is less than 6% (6% is the minimum discount rate for ADB projects)	EIRR=-4%		
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).	This is a project involving rockfall protection works in hilly areas with few settlements, and the environmental impact is expected to be minimal.	5	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).			
	Resettlement	【10】	JICA Environmental Category C (no relocation)	There are no residential houses in the vicinity of the project site, and no resettlement of residents will occur.	10	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)			
	Subtotal				15	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		5	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Rockfall fences and nets are products and technologies in which Japanese companies have extensive experience, and there is a high possibility they can be introduced. Similar products and technologies also exist in Europe, but Japanese products tend to be more expensive.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Japanese companies handling rockfall fences and nets show strong interest in the project. (Provided that budget constraints and creditworthiness of local suppliers are not an issue, it is possible to supply products even to overseas companies.)		
		【0】	Low possibility of Japanese contractors participating and introducing Japanese technologies and products			
	Subtotal				10	
Total Score					45	

Chart

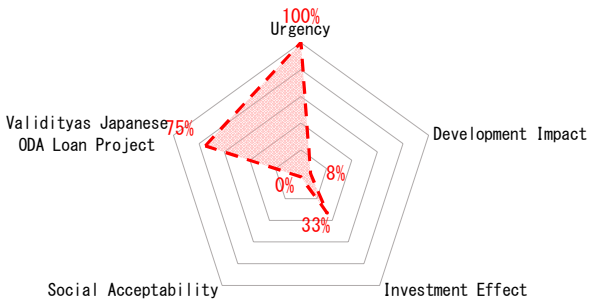


Scoring Sheets for Shortlist (Railway)

No.	RW-1
Project	Construction of electrified railway along the “Samarkand-Urgut” route

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Train capacity is not able to meet the current demand for passenger and freight transport.	Although it has not been confirmed, it is assumed that the project is planned due to the expected demand in the current situation.	10	10
		【5】	Infrastructure is aging rapidly, which may lead to an increase in the rate of breakdowns and accidents in the next few years.			
		【3】	Transportation demand increases. The current capacity can meet the demand now, but it may not be able to meet in a few years.			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【20】	Directly contribute to increasing the number of international trains or shortening transport times		0	20
		【15】	Directly contributes to simplifying and speeding up border crossing procedures			
		【10】	Indirectly contributing to an increase in the number of international transport trains, shortening transport times, and simplifying and speeding up border crossing procedures	Although it is a route heading towards Tajikistan, there are no railway tracks on the Tajikistan side, so synergies are unlikely.		
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	Although it is a route heading towards Tajikistan, there are no railway tracks on the Tajikistan side, so synergies are unlikely.		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		0	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans	Since this item is unknown, the score will be temporarily recorded as '0'		
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	There are no technical challenges anticipated for track laying. Environmental factors are unknown."		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				3	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)		0	5
		【0】	Other than the above	Project length: Approximately 50 km, project cost: Approximately 92 billion yen.		
	Economic Impact of Development	【10】	Located on a major route, has information indicating strong demand, is cost-effective		5	10
		【5】	When demand is uncertain	The demand is unclear.		
		【0】	Demand cannot be predicted at present			
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		0	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).	Since this item is unknown, the score will be temporarily recorded as '0'		
	Resettlement	【10】	JICA Environmental Category C (no relocation)		0	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)	Since this item is unknown, the score will be temporarily recorded as '0'		
	Subtotal				0	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.	There is a possibility of supplying heat-treated rails that cannot be produced in China or Russia.	10	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Since this work has already been carried out, it is assumed that there will be no issues in securing domestic contractors.		
	Subtotal				15	
Total Score					33	

Chart

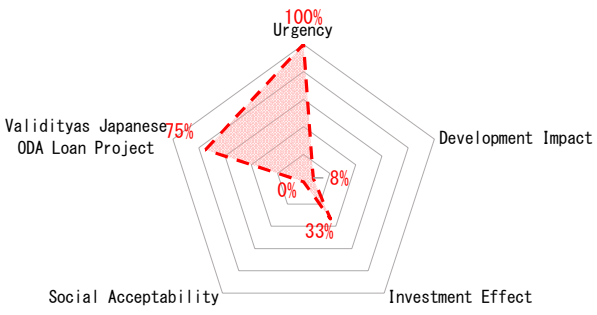


Scoring Sheets for Shortlist (Railway)

No.	RW-2
Project	Construction of electrified railway along the "Tashkent-Parkent" route

Evaluation Item		Evaluation Indicator		Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Train capacity is not able to meet the current demand for passenger and freight transport.	Although it has not been confirmed, it is assumed that the project is planned due to the expected demand in the current situation.	10	10
		【5】	Infrastructure is aging rapidly, which may lead to an increase in the rate of breakdowns and accidents in the next few years.			
		【3】	Transportation demand increases. The current capacity can meet the demand now, but it may not be able to meet in a few years.			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【20】	Directly contribute to increasing the number of international trains or shortening transport times		0	20
		【15】	Directly contributes to simplifying and speeding up border crossing procedures			
		【10】	Indirectly contributing to an increase in the number of international transport trains, shortening transport times, and simplifying and speeding up border crossing procedures	It is a route heading east from Tashkent, but since the area further east is mountainous, the possibility of connecting the railway is low.		
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		0	5
		【3】	Synergy with other projects can be ensured			
		【0】	No synergistic effects expected	It is a route heading east from Tashkent, but since the area further east is mountainous, the possibility of connecting the railway is low.		
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy		0	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans	Since this item is unknown, the score will be temporarily recorded as '0'		
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	There are no technical challenges anticipated for track laying. Environmental factors are unknown.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				3	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)		0	5
		【0】	Other than the above	Project length: Approximately 40 km, project cost: Approximately 74 billion yen.		
	Economic Impact of Development	【10】	Located on a major route, has information indicating strong demand, is cost-effective		5	10
		【5】	When demand is uncertain	The demand is unclear.		
		【0】	Demand cannot be predicted at present			
	Subtotal				5	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		0	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).	Since this item is unknown, it will be temporarily recorded as '0'		
	Resettlement	【10】	JICA Environmental Category C (no relocation)		0	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)	Since this item is unknown, the score will be temporarily recorded as '0'		
	Subtotal				0	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.	There is a possibility of supplying heat-treated rails that cannot be produced in China or Russia.	10	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Since this work has already been carried out, it is assumed that there will be no issues in securing domestic contractors.		
	Subtotal				15	
Total Score					33	

Chart

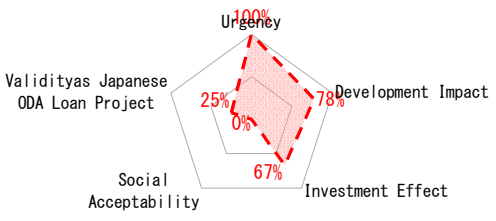


Scoring Sheets for Shortlist (Railway)

No.	RW-3
Project	Electrification of Navoi-Uchkuduk railway line

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Train capacity is not able to meet the current demand for passenger and freight transport.	It is a major production area for uranium and rare metals, and the demand for railways primarily focused on ore transportation is expected to be high.	10	10
		【5】	Infrastructure is aging rapidly, which may lead to an increase in the rate of breakdowns and accidents in the next few years.			
		【3】	Transportation demand increases. The current capacity can meet the demand now, but it may not be able to meet in a few years.			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【20】	Directly contribute to increasing the number of international trains or shortening transport times		15	20
		【15】	Directly contributes to simplifying and speeding up border crossing procedures	Since the ore produced in Uchkuduk is expected to be for export, electrification of the railway is expected to simplify locomotive operations		
		【10】	Indirectly contributing to an increase in the number of international transport trains, shortening transport times, and simplifying and speeding up border crossing procedures			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		3	5
		【3】	Synergy with other projects can be ensured	Synergies with new development plans for uranium and rare metals can be expected. Itochu Corporation is already engaged in joint ventures with local companies for mining development in the target region.		
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	Securing a stable supply of rare metals is an important policy for Japan, and improving the transportation of rare metals is considered crucial. It also contributes to the goal outlined in the Uzbekistan 2030 Strategy to achieve a 65% railway electrification rate.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	There are no technical challenges anticipated for track laying. Environmental factors are unknown.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				31	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)		0	5
		【0】	Other than the above	Project length: Approximately 300 km, project cost: Approximately 55 billion yen.		
	Economic Impact of Development	【10】	Located on a major route, has information indicating strong demand, is cost-effective	Due to the large number of uranium mines in the area, a significant demand is anticipated.	10	10
		【5】	When demand is uncertain			
		【0】	Demand cannot be predicted at present			
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		0	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).	Since this item is unknown, the score will be temporarily recorded as '0'		
	Resettlement	【10】	JICA Environmental Category C (no relocation)		0	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)	Since this item is unknown, the score will be temporarily recorded as '0'		
	Subtotal				0	
Vallidityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.		0	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.	There is no superiority of Japanese products in terms of overhead line equipment.		
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Since this work has already been carried out, it is assumed that there will be no issues in securing domestic contractors.		
	Subtotal				5	
Total Score					56	

Chart

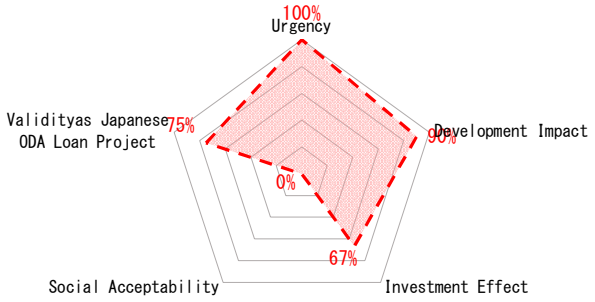


Scoring Sheets for Shortlist (Railway)

No.	RW-4
Project	Construction of second electrified railway line Tashkent-Angren

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Train capacity is not able to meet the current demand for passenger and freight transport.	Although it has not been confirmed, it is assumed that the project is planned due to the expected demand in the current situation.	10	10
		【5】	Infrastructure is aging rapidly, which may lead to an increase in the rate of breakdowns and accidents in the next few years.			
		【3】	Transportation demand increases. The current capacity can meet the demand now, but it may not be able to meet in a few years.			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【20】	Directly contribute to increasing the number of international trains or shortening transport times	Angren is part of the route that leads to Kyrgyzstan, and double-tracking is expected to reduce train transport time.	20	20
		【15】	Directly contributes to simplifying and speeding up border crossing procedures			
		【10】	Indirectly contributing to an increase in the number of international transport trains, shortening transport times, and simplifying and speeding up border crossing procedures			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		3	5
		【3】	Synergy with other projects can be ensured	As it involves double-tracking a section connected to the Pap-Angren Railway Construction project (2015–2019, World Bank), synergies are anticipated.		
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	It is expected to contribute to the increase in international freight transport targeted by the Uzbek government.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	There are no technical challenges anticipated for track laying. Environmental factors are unknown.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				36	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)		0	5
		【0】	Other than the above	Project length: Approximately 100 km, project cost: Approximately 185 billion yen.		
	Economic Impact of Development	【10】	Located on a major route, has information indicating strong demand, is cost-effective	It is a major route heading east from Tashkent.	10	10
		【5】	When demand is uncertain			
		【0】	Demand cannot be predicted at present			
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		0	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).	Since this item is unknown, the score will be temporarily recorded as '0'		
	Resettlement	【10】	JICA Environmental Category C (no relocation)		0	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)	Since this item is unknown, the score will be temporarily recorded as '0'		
	Subtotal				0	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.	There is a possibility of supplying heat-treated rails that cannot be produced in China or Russia.	10	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.	Only heat-treated rails have the potential for introduction.		
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Since this work has already been carried out, it is assumed that there will be no issues in securing domestic contractors.		
	Subtotal				15	
Total Score					71	

Chart

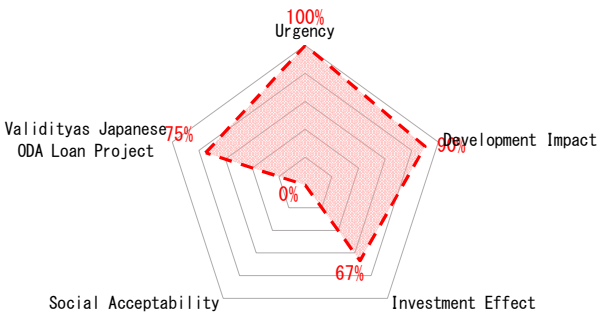


Scoring Sheets for Shortlist (Railway)

No.	RW-5
Project	Construction of second track of electrified high-speed railway line on Navoi-Bukhara section

Evaluation Item			Evaluation Indicator	Justification for the score	Score	Full Marks
Major	Medium					
Urgency	–	【10】	Train capacity is not able to meet the current demand for passenger and freight transport.	Although it has not been confirmed, it is assumed that the project is planned due to the expected demand in the current situation.	10	10
		【5】	Infrastructure is aging rapidly, which may lead to an increase in the rate of breakdowns and accidents in the next few years.			
		【3】	Transportation demand increases. The current capacity can meet the demand now, but it may not be able to meet in a few years.			
	Subtotal				10	
Development Impact	Improvement of Connectivity	【20】	Directly contribute to increasing the number of international trains or shortening transport times	The target section is part of the route leading to Turkmenistan, and double-tracking is expected to reduce train transport time.	20	20
		【15】	Directly contributes to simplifying and speeding up border crossing procedures			
		【10】	Indirectly contributing to an increase in the number of international transport trains, shortening transport times, and simplifying and speeding up border crossing procedures			
	Synergies with Other Projects	【5】	This project will ensure synergy with other projects and contribute to strengthening border connectivity with Tajikistan, Kyrgyzstan, and Afghanistan.		3	5
		【3】	Synergy with other projects can be ensured	Synergies with the Bukhara–Miskin–Urgench–Khiva Electrification project (2021–2026, ADB) will enable through operations using electric locomotives.		
		【0】	No synergistic effects expected			
	Consistency with Development Plans	【10】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy	It is expected to contribute to the stabilization and safety enhancement of international freight transport, which is a goal of the Uzbek government.	10	10
		【5】	Consistent with Uzbekistan's development policy and Japan's development cooperation policy			
		【0】	Not consistent with development plans			
	Project Risk	【5】	No project risk		3	5
		【3】	There is one of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.	There are no technical challenges anticipated for track laying. Environmental factors are unknown.		
		【0】	There are two or more of risks in interms of the follwing. Technical Capabilities: Quality Control, Process Management, etc. Environmental Factors: Resident Relocation, Delays in Land Acquisition, etc. Uncertain factors: geological risks, etc.			
	Subtotal				36	
Investment Effect	Project Scale	【5】	Consistent with the scale of yen loan projects (within 137 million USD or so)		0	5
		【0】	Other than the above	Project length: Approximately 90 km, project cost: Approximately 160 billion yen.		
	Economic Impact of Development	【10】	Located on a major route, has information indicating strong demand, is cost-effective	Located on a major route, it also sees strong passenger demand.	10	10
		【5】	When demand is uncertain			
		【0】	Demand cannot be predicted at present			
	Subtotal				10	
Social Acceptability	Natural Environment Impact	【5】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.).		0	5
		【3】	The implementation of the project will improve some of the impacts on the natural environment (air, water quality, noise, vibration, etc.), but will also cause negative impacts (air, water quality, noise, vibration, vegetation cutting, etc.).			
		【0】	The implementation of the project will only have negative impacts on the natural environment (air, water quality, noise, vibration, and vegetation cutting).	Since this item is unknown, the score will be temporarily recorded as '0'		
	Resettlement	【10】	JICA Environmental Category C (no relocation)		0	10
		【5】	JICA Environment Category B (1 to 199 relocations)			
		【0】	JICA Environment Category A (over 200 relocations)	Since this item is unknown, the score will be temporarily recorded as '0'		
	Subtotal				0	
Validityas Japanese ODA Loan Project	Applicability of Japanese Technology	【10】	There is a possibility of introducing technologies and products that Japan excels at, and these technologies and products have a competitive advantage over similar technologies and products from other countries.	There is a possibility of supplying heat-treated rails that cannot be produced in China or Russia.	10	10
		【5】	There is a possibility of introducing technologies and products that Japan excels in.			
		【0】	There is no possibility of introducing technologies and products that Japan excels in.			
	Restrictions on Project Implementation	【10】	High possibility of Japanese contractors participating		5	10
		【5】	The possibility of Japanese contractors participating is low, but the possibility of introducing Japanese technology and products is high.	Since this work has already been carried out, it is assumed that there will be no issues in securing domestic contractors.		
	Subtotal				15	
Total Score					71	

Chart



Appendix-3: Equipment List of CR

Appendix 3-2

Equipment List of the Committee of Roads (1/3)

Regeinal Office	Earthwork						Asphalt Pavement																	
	Bulldozer	Scraper	Front loader	Excavator (tracked)	Excavator (wheeled)	Backhoe loader	Scarifier	Manual asphalt cutter	Road milling machine	Recycler	Crushed stone spreader	Motor grader	Trailer grader	Tar distributor	Bitumen tanker	Bitumen trailer	Asphalt paver	Water carrier	Watering machine	Double-roller roller	Combined roller	Cam roller	Single drum roller	Single drum roller
Andijon region AIBB	1		1		3	8			7			15		1			2	1	1	13			2	
Bukhoro region AIBB	3		3	1	9	10	4	1	5	1	1	24		6		2	2	3	3	22		1	1	1
Jizzakh region AYBB	1		4		4	11			4			17		2		1	1	1	5	14				
Kashkadarya region, AYBB	2		5	1	4	8	3	1	6			22	1		1		4	1		14		1	1	
The Republic of Karakalpakstan	5		7	5	3	12	1	1	8			16	2	2			1	2	1	15	1	1	1	
Navoi region AYBB	3		7		8	9		3	9			21		1			6	4	1	25		1	2	
Namangan region AYBB	2		3	1	1	8			7			16	1	1			1	1	1	11	1		1	
Samarkand region AYBB	2		4	1	4	10		12	9			23	1	4		4	5	4	6	21	2		2	
Syrdarya region of the AYBB	2		3	1	4	8	1		5		2	10		2		5	2		8	13		1	1	
Surkhandarya region of the AYBB	7	1	4	6	3	7	1		7			18		4	1	2	7		9	17	2			
Tashkent region AIBB	4		9	6	13	15	1	1	10	4	1	23		7			4	5	23	30			6	
Fergana region AYBB	2		3	1	4	7			6		1	24		1	1		2			13			2	1
Khorezm region of the AYBB	1		2		4	7	3		9			17	1	3		5	4	1	2	22			3	3
"Uzyulkuprik Cluster" DM	11		16	5	15	8	1	6	6	2		15		7	1		5	12	1	14		2	2	
Other organizations	5		9	11	4	4			3			10		1		1	1	4		8	4			
Grand Total	51	1	80	39	83	132	15	25	101	7	5	271	6	42	4	20	47	39	61	252	10	7	24	5

Uzyulkuprik" is a cluster within the Committee on Roads in Uzbekistan. It involves the private sector in the operation and maintenance of public roads. Starting from January 2024, this initiative will be implemented in the Republic of Karakalpakstan and other regions on an experimental basis

Appendix 3-3

Equipment List of the Committee of Roads (2/3)

Regeinal Office	Asphalt Pavement							Concrete					Conveyance												
	Pneumatic roller	Trailer roller	Hand roller	Roller tractor	Roller skating rink	Vibratory plate	Seam filler	Concrete mixer truck	Concrete pump	Concrete mixer	Concrete paver	Concrete grinding	Pickup	Dump truck	Trailer	Flatbed truck	Fuel tanker trailer	Water carrier trailer	Fuel tanker	Tractor unit	Tractor	Traller	Semitrailer	Garbage truck	Forklift
Andijon region AIBB	3		12	6	1		1	3						64		2				3	19	2			
Bukhoro region AIBB	7	2	8	4	3		1	3						90		7			1	6	39	6	1		
Jizzakh region AYBB	1	5	13				1	3						66		4				3	21	3	1		
Kashkadarya region, AYBB	2	11	17			2	1	3						126		1	1	2	1	5	40	4	1		
The Republic of Karakalpakstan	1	10	9	2	1	2	1	3						88		11		4	1	4	37	2	2		
Navoi region AYBB	3	1	7				1	3		1	1			99		2				7	37	3	7		
Namangan region AYBB	1	1	10	5	4		1	3						64		2		1		3	22	2			
Samarkand region AYBB	8	4	6	3	1		1	3						99		9		1	2	7	25	5	1		
Syrdarya region of the AYBB	1		9				1	3						47		2				3	7	3			
Surkhandarya region of the AYBB	6	2	10	3			1	1						100	1	7			3	9	33	3	5		
Tashkent region AIBB	9	2	14	4	6		2	3			3	1		236		21			5	43	67	11	31	1	
Fergana region AYBB	2		18	21	2		1	3						122		1		2	1	5	38	2	3		
Khorezm region of the AYBB	3	3	10	6	6		1	3					1	95	2	4			1	13	22	2	12		
"Uzyulkuprik Cluster" DM	8	2	4			1		10	1		1	1		105	1	11			4	27	19	14	34		2
Other organizations														96		2			3	7	16	1	4		2
Grand Total	55	43	147	54	24	5	14	47	1	1	5	2	1	###	4	86	1	10	22	145	442	63	102	1	4

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Starting from January 2024, this initiative will be implemented in the Republic of Karakalpakstan and other regions on an experimental basis

Appendix 3-4

Equipment List of the Committee of Roads (3/3)

Regeinal Office	Cranes				Mainteance									Bridge		Transportation													Grand Total
	Crawler crane	Tower crane	Pneumatic-tired crane	Crane manipulator	Curb layer	Road marking machine	Manual marking machine	Snow removal machine	Snow compactor machine	Combined road machine (CRM)	Combined road machine (Vacuum cleaner)	Pipe Cleaning Machine	Drilling machine	Pile driving mechanism	Van	Yamabur	Autolab	Auto repair shop	Car marking	Aerial platform	Truck crane	Caravan	Trailer PTS	Bus	Minibus	Car	Motorbike	
Andijon region AIBB				3	1		1			13	2								1	1	4		23	3		24	14	261
Bukhoro region AIBB				7	1	1				16	2								1	3	4		32	9		34	11	402
Jizzakh region AYBB				12	1					17	3									2	3		16	7		18	3	268
Kashkadarya region, AYBB				7	1		1	1		8	2							1	2		2		30	13		20	11	391
The Republic of Karakalpakstan	1	2		3						17	2							6		2	3		28	3		28	11	368
Navoi region AYBB				6						12	2										2		37	7		46	14	398
Namangan region AYBB				3	1					11	2								1		2		18	2		17	1	233
Samarkand region AYBB			1	13	1					18	5				2			1	1	1	5		26	9	1	36	12	421
Syrdarya region of the AYBB				6	1					4	2		1		2				1	1	2		3	12		7		186
Surkhandarya region of the AYBB				7						8	2							1	2	1	8		18	13		22	9	371
Tashkent region AIBB				12				1	2	78	5	1	2					1	2	5	14	1	62	35	5	83	6	936
Fergana region AYBB			1	7	1	1				14	2									1	4		35	4	5	48	12	424
Khorezm region of the AYBB		1		7	1					13	2								1			1	14	6	2	21		340
"Uzyulkuprik Cluster" DM	1		4	5	1					2			5	5						1	33	2	17	15	1	68	4	538
Other organizations				17		5	2	4		23						13	1	1	4	21	5		6	2		29		329
Grand Total	2	3	6	115	10	7	4	6	2	254	33	1	8	5	4	13	1	11	16	39	91	4	365	140	14	501	108	5866

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