



**REPUBLIC OF KAZAKHSTAN
MINISTRY OF INVESTMENTS AND DEVELOPMENT
COMMITTEE FOR ROADS**

**ENVIRONMENTAL MANAGEMENT PLAN
KURTY-TOGYZ (BURLYBAITAL) ROAD SECTION
(KM 2295 – KM 2380)
FINAL DRAFT**

**FINANCED BY INTERNATIONAL BANK FOR RECONSTRUCTION AND
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Prepared for:

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CONTENTS

1. INTRODUCTION	4
2. PROJECT DESCRIPTION	5
2.1 PROJECT GENERAL INFORMATION	5
2.2 PROJECT CHARACTERISTICS	5
2.3. SECTION 1	6
2.4 SECTION 2	8
2.5 BORROW PITS	9
2.6 TRAFFIC VOLUME AND TRANSPORT MODE	11
3. ENVIRONMENTAL AND SOCIAL BASIC DATA	13
3.1 SECTION 1	13
3.1.1 GENERAL DESCRIPTION	13
3.1.2 CLIMATE	14
3.1.3 GEOMORPHOLOGY AND GEOLOGY	17
3.1.4 SOIL AND SOIL-FORMING MATERIALS	17
3.1.5 LAND RESOURCES	18
3.1.6 HYDROLOGICAL CHARACTERISTICS	19
3.1.7 FLORA AND FAUNA	20
3.1.8 PHYSICAL AND CULTURAL RESOURCES	23
3.1.9 SOCIAL AND ECONOMIC CHARACTERISTICS	25
3.2 SECTION 2	31
3.2.1 GENERAL DESCRIPTION	31
3.2.2 CLIMATE	33
3.2.3 RELIEF AND LANDSCAPE	33
3.2.4 SOILS AND SOIL-FORMING MATERIALS	33
3.2.5 LAND RESOURCES	34
3.2.6 HYDROLOGIC CHARACTERISTICS	34
3.2.7 FLORA AND FAUNA	34
3.2.8 SOCIAL AND ECONOMIC CHARACTERISTICS	34
3.2.9 PHYSICAL AND CULTURAL RESOURCES	35
4. ENVIRONMENTAL MANAGEMENT, MONITORING PLAN AND INSTITUTIONAL RESPONSIBILITY	37
4.1 ENVIRONMENTAL MONITORING PLAN	37
5. INSTITUTIONAL REQUIREMENTS	39
5.1 ORGANIZATIONS INVOLVED IN THE PROJECT	39
5.2 INSTITUTIONAL RESPONSIBILITIES	39
GRIEVANCE REGISTRATION	41
GRIEVANCE PROCESSING	42
6. PUBLIC CONSULTATIONS AND DISCLOSURE	44
7. ENVIRONMENTAL MANAGEMENT PLAN: MONITORING AND INSTITUTIONAL RESPONSIBILITY: KURTY –TOGYZ (BURLYBAITAL) ROAD SECTION (KM 2295-2380)	47

ABBREVIATIONS

Akimat	Regional office of the executive branch in Kazakhstan
CfR	Committee for Roads
PE	Project Engineer
ESS	Environment and Social Sphere
FEAP	Framework environmental action plan
EAP	Environmental action plan
ESIA	Environmental and Social Impact Assessment
FS	Feasibility study
OHS	Occupational health and safety
HT	Heavy truck
ME RK	Ministry of Energy RK
CEMCSI	Committee for environmental management, control and state inspectorate in oil and gas industry
MID	Ministry of Investments and Development RK
IBRD	International Bank for Reconstruction and Development
PAP	Persons, affected by the Project
HCH	Historical and Cultural Heritage
PMC	Project Management Consultant
MP	Monitoring Plan
RK	Republic of Kazakhstan
FRP	Framework resettlement policy
SEE	State ecological expertise
WS	Works Scope
WB	World Bank

1. INTRODUCTION

Kurty-Togyz road section of the Center - South road project, length of 85 km, is a reconstruction of the existing road within the bounds of the existing right-of-way, and also the second carriageway of the offered 4 lane road will be partially built. The project crosses various landscapes, types of land use and (micro) climatic zones. The plan of the project alignment lies in Zhambyl and Ili district of Almaty oblast. The project consists of two designed sections, length of 40 km and 45 km, which are better to reform to lots during project implementation.

In accordance with requirements of the legislation of the Republic of Kazakhstan Environmental impact assessment (EIA) reports were prepared. Reports of EIA were developed according to provisions of the Ecological code of the Republic of Kazakhstan and other acting legal and regulatory and procedural documents of RK, regulating questions of environmental protection and an ecological safety. Content and structure of EIA materials conforms to requirements of «Instructions for evaluating impact of planned business operations and other activities on the environment during development of the pre-planned, planned, pre-project and project documentation, approved by the order of the Minister of environmental protection of the Republic of Kazakhstan dated June «28», 2007 No. 204-p».

The government of RK requested the World Bank to finance Kurty-Togyz road section of 85 km length, which is a part of a Center-North corridor, connecting Astana and Almaty at the expense of the saved means of the Loan 7681-KZ. In compliance with World Bank requirements and operating policy, the project was determined under Category «A» according to which it is necessary to prepare EIA report in accordance with Operating Policy of the World Bank (OP «Environmental impact assessment» 4.01). Additionally, the road upgrade activities trigger the OP 4.11 on Physical Cultural Resources and the OP 4.04 on Natural Habitats. The works will follow national legislation and requirements as well as the WBG EHS Guidelines. The earlier prepared EIA report was translated and various amendments and changes were made according to World Bank requirements and the international accepted practice. It included restructuring of chapters of the initial report according to the content, required by policy and guidance of the World Bank. This work was performed by Specialists on environmental protection of «KazDorNII» JSCB company based on the approved Terms of Reference from Committee for Roads.

The purpose of ESIA consists in determination of ecological and other consequences of the offered road and its development. The ESIA report includes the following main sections:

- The basis of policy and legislation
- Project description
- Alternative analysis
- Basic data
- Assumed environmental impact
- Environmental management plan

2. PROJECT DESCRIPTION

2.1 PROJECT GENERAL INFORMATION

«Kurty–Burylbaytal» road section of 85 km length (km of 2295-2380) belongs to «Astana-Karaganda-Balkhash-Kapshagai-Almaty» Center-South corridor, it is located in Zhambyl and Ili districts of Almaty oblast. The road will connect Western China with Western Europe. The purpose of a corridor is providing the certain road through Western China, Kazakhstan and Russia under any weather conditions. This corridor will increase an economic profit, will significantly improve goods and tourists flow, will improve social communication between China and Kazakhstan.

The existing road of the III technical category is constructed in the 60th years of last century, it is planned to reconstruct the road section under I technical category.

The offered alignment will be reconstructed on the existing road with broadening of the existing right-of-way (about 50% of all alignment) and partially construction of a new right-of-way (about 50%) is almost parallel to the existing road. The project passes through various landscapes, types of land use and (micro) climatic zones. Project alignment is completely in Almaty oblast and passes through Ili and Zhambyl district. Total length is 85,04 km.

- Section length in Ili district – 21 km.
- Section length in Zhambyl district – 64,04 km.

The project consists of 2 designed sections with 40 km and 45 km length, as shown in Table 2.1.1. Detailed projects have been developed and agreed with supervisory bodies. The detailed information on design sites is provided below:

Table 2.1.1 Kurty-Togyz road section

No. of section	Name of section	Based on Detailed Design Length from – to km	Length of each section
		in km	in km
1	«Togyz-Kanshegel» road	2295-2335	40
2	«Kanshegel-Kurty»	2335-2380	45
	TOTAL:		85

This project will have ecological and social influences, and land acquisition will be required along the existing route, and also for by-passes. All land plots which are subject to rehabilitation have been defined after detailed design completion and reflected in the revised relevant Resettlement Action Plan (RAP). OP 4.12 policy is triggered due to anticipated land acquisition and resettlement activities primarily related to construction works associated with expansion to four lanes from the existing two. Additional impacts are expected to allow land allocation for parking road-building equipment, bypasses, borrow pits, construction camps, and road-building materials and warehouse sites. Temporary land acquisition shall cover only land plots of local executive authorities; they are not agricultural or residential nor involve income generating activities, therefore no loss to agricultural production or livelihood is anticipated. After the completion of these lands use, they will be restored to the original status at the end of the rental.

2.2 PROJECT CHARACTERISTICS

Main indices of designed road:

- Road category – 1b;
- Length – 85,04 km;

- Subgrade width – 25,5 m;
- Traffic lanes number – 4;
- Dividing strip width – 3 m;
- Maximum width of right-of-way – 70 m;
- Maximum design speed – 120 km/h;
- Average design speed – 80 km/h;
- Bridges and Overpasses – 2 Nos.;
- Culverts – 62 Nos.;
- Rest area – 2 Nos.
- Type of road pavement type of pavement – asphalt concrete.

Design construction period: 3 years (36 months)

- 1 section - 36 months
- 2 section – 35 months
- Bridge through Buryozek river (Utegen) – 35 months
- Bridge through Kurty river – 35 months

Construction works include:

- Site clearance and preparation;
- Construction and development of borrow pits;
- Construction of work settlement, warehouse and production facility;
- Subgrade construction;
- Pavement surfacing construction
- Road pavement construction;
- Crossings and junctions' construction;
- Transport interchanges construction in different levels;
- Bridges and overpasses construction;
- Road signs and guard rails installation;
- Road markings application;
- Construction of water drain from carriageway and bridges
- Construction of stream deflectors at artificial structures.

2.3. SECTION 1

Section 1 (km 2295-km 2335) the main road direction is south-east, as shown in the project lay-out map in fig. 2.3.1. and fig. 2.3.2. This section will pass on the existing alignment Almaty-Astana between Kanshengel village and behind Aydarly village. According to administrative division the designed section passes across the territory of Aydarly and Sarytaukum rural districts of Zhambyl district of Almaty oblast. The alignment crosses one dry wash of Ashysu river, which dries up in the summer, but is filled in the spring. The average level of the section is 600 m above sea level; with a minimum 560 meters and a maximum 640 meters.

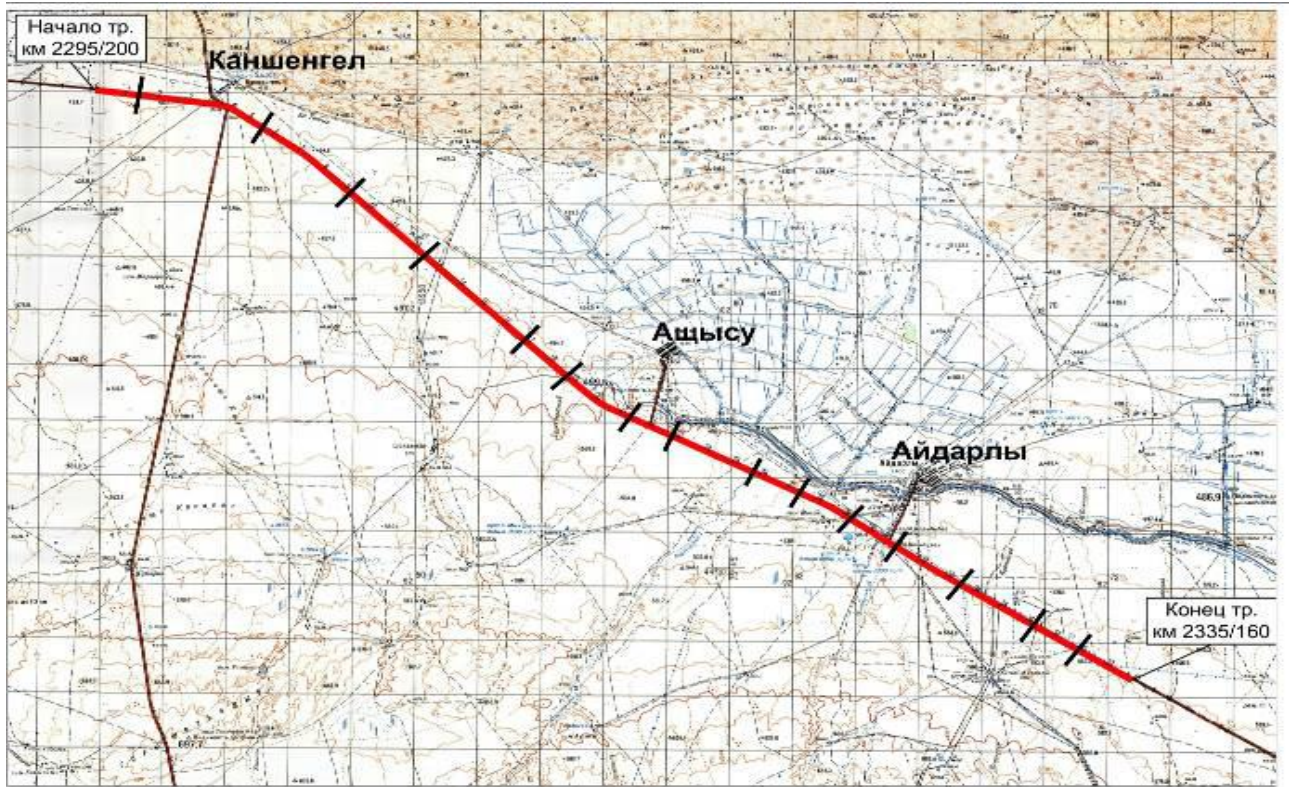


Figure 2.3.2: Alignment plan of section 1

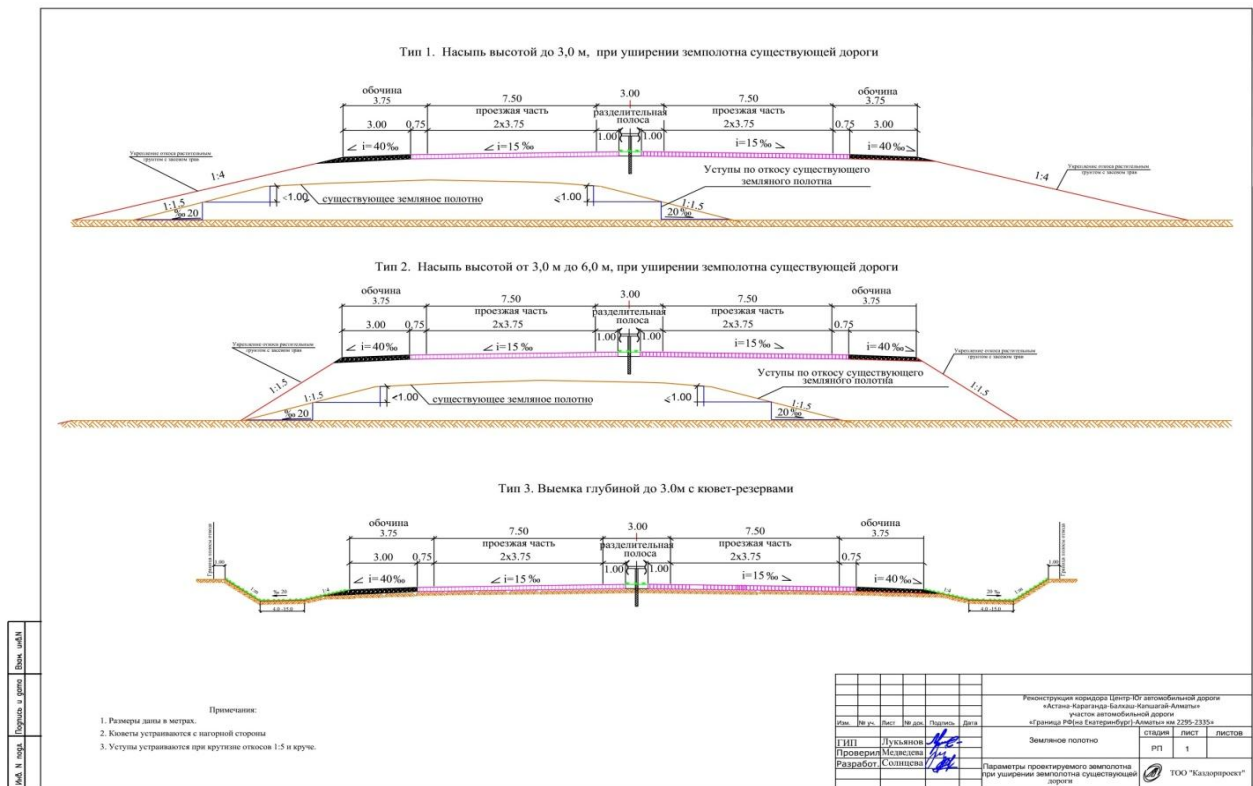


Figure 2.3.3: Typical transversal section of section I of the offered reconstruction and construction of additional two lanes of the existing road

2.4 SECTION 2

Section 2 (km 2335-km 2380). This section will pass on the existing alignment Almaty-Astana, beginning with Kurty village, as shown below in the figure 2.4.1 along with the offered transversal section in figures 2.4.2 and 2.4.3. On administrative division the designed section passes across the territory of Ili and Zhambyl district of Almaty oblast. The road with dense infrastructure network and several settlements with intensive agricultural activity in not built-up places.



Figure 2.4.1: Road alignment of section 2

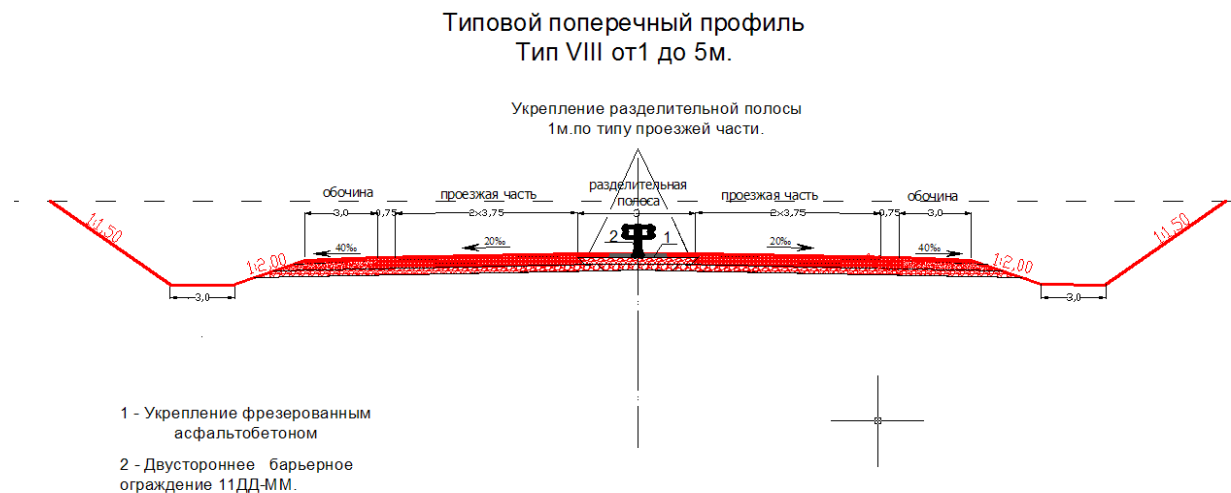


Figure 2.4.3: Typical transversal section of section 2 of the offered reconstruction and construction of additional two lanes of the existing road

The main water course, crossing the road is Kurty river, which originates on the northern slopes of Kastek and Zhetyzhol ridges and is formed from confluence of numerous inflows, such as Kopa, Zhirenaigyr, Aksengir, Zhyngyldy.

The average section level - 600 m above sea level; with a minimum - 560 meters and a maximum 640 meters. The area is flat, ground line gradient is not expressed. Soil covering in design area is poorly developed, provided by slightly humic gray soils with power capacity of 20 cm. Bridges and interchanges of Section 2 are shown in Table 2.4.

Table 2.4 – Section 2: Bridges and Interchanges

No.	Secton	Length, m	Pavement	Location
1	2	3	4	5
1	Bridge through Bu-ryozek river (Utegen)	46,0	a/б	km 2349+150
2	Bridge through Kurty river	71,2	a/б	km 2377+400

2.5 BORROW PITS

The designer determined several existing and geological explorations on borrow pits on these two road sections. They are provided in tables 2.13, 2.14. They are not a part of the approved project designing until the Contractor does not make the final decision on borrow pits choice.

Permissions from district akimats and all authorized bodies, including ecological permissions have already been got on the existing soil reserves and borrow pits. They can be used by the Contractor depending on certain needs of the Contractor. The Contractor, as a rule, is not interested in direct ownership of borrow pit and concludes the Contract with owner/operator of the borrow pit for procurement of definite materials volume, required for project realization.

The contractor bears responsibility for maintenance of public and private access roads between borrow pits and the construction section.

Direct materials extraction from rivers beds is not permitted and is not approved by rivers protection bodies. As a rule it is not allowed to create borrow pits less than in 500 m from any river.

Coordination from various authorized bodies, including the interregional commissions is required for all offered borrow pits. The owner/operator shall develop the ESIA project. When the contractor submits an application, he shall attach EIA with all documents and experimental testimonies into Regional Department on environmental protection for obtaining permits to emissions and impacts. Final process of approval includes the requirement, that when opening a borrow pit, removal and storage of a fertile layer shall be made, and then the fertile layer shall be recovered when closing a borrow pit. This document is prepared after contract signature for exploration and production. General process of approval and coordination for a new borrow pit from oblast and district authorized bodies can take up to 2 years. Therefore, contractors, most likely, will use the existing borrow pits with the available permissions. Permissions from bodies for protection of water resources are not necessary, however, impact on surface and underground water shall be described in EIA.

For the existing borrow pits, determined by designers, all EIA procedures are completed and environmentally acceptable. There will be no harmful impacts on surface and underground water sources and other aspects. Nevertheless, as soon as borrow pits, which are used, will be determined by the Contractor, the overview properly will be executed to confirm, that those sections are really functional or are operated in a corresponding manner.

Regardless of what borrow pits will be used, the existing roads will be used for access to construction sections. On the main road, most probably, construction activity will slightly affect a transport flow and noise levels near villages. However, this matter needs to be studied and carried out detailed monitoring prior to the beginning of the construction period. On minor roads, which adjoin the main road, construction activity considerably will increase a transport flow and impurity and noise level is possible. Traffic estimation with accounting of all adjoining roads together with the program of monitoring will be prepared till the beginning of the construction period as a part of measures for environment management and measures managements.

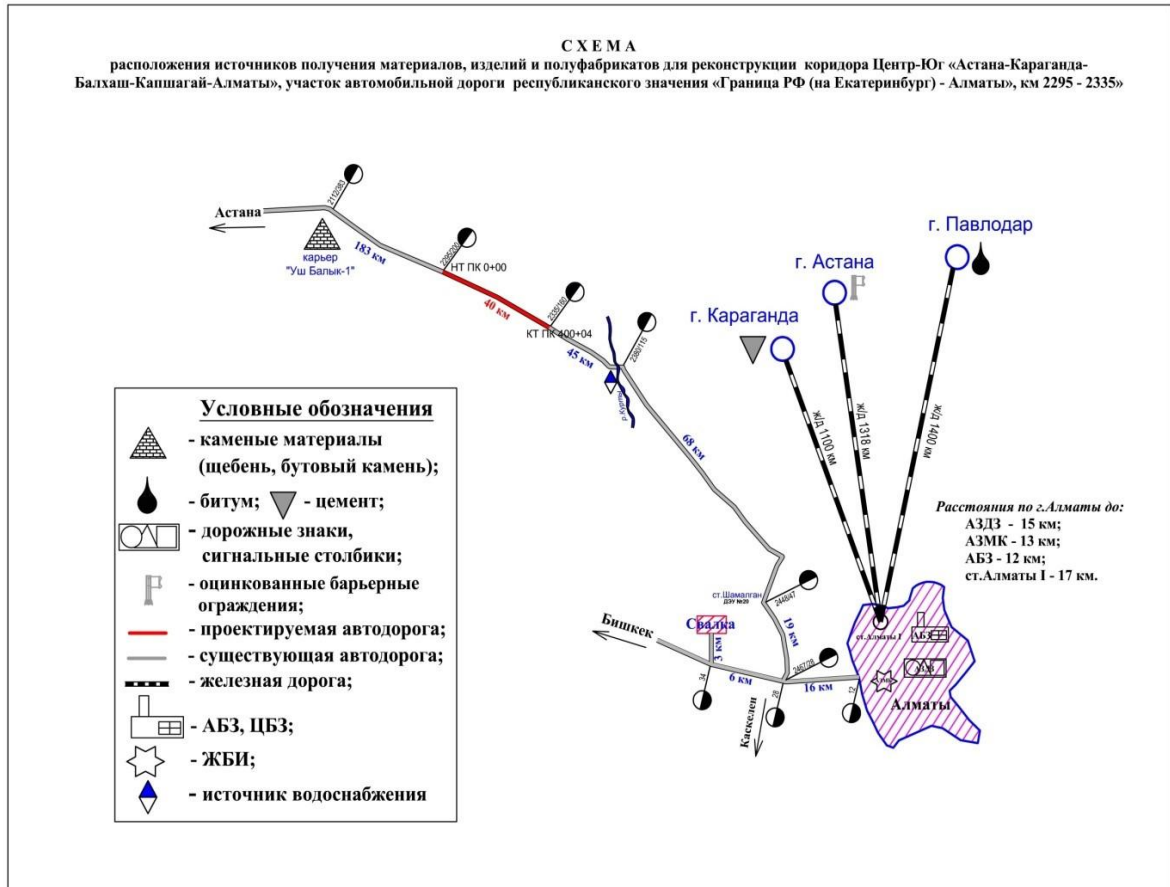
Table 2.13: Section 1, Borrow pits

No.	Name	Material	Status	Kilometrage, km/ Distance from alignment
1	Borrow Pit No.1	Soil	Investigated/suggested by designers	km 5/ 0,2 km
2	Borrow Pit No. 2	Soil	Investigated/ sug- gested by designers	km 15/ 0,2 km
3	Borrow Pit No. 3	Soil	Investigated/ sug- gested by designers	km 25/ 0,2 km
4	Borrow Pit No. 4	Soil	Investigated / sug- gested by designers	km 36/ 0,2 km
5	«Ulken-Tas» LLP, «Ush-Balyk-1» LLP	Factional crushed-stone, rubble rock, sand form sieve resi- due of crushing, GSM	Existing	km 383/ 183 км
6	«Ulken-Tas» LLP, «Ulken» borrow pit	Щебень фракц. 25-60 мм	Existing	km 383/ 183 км

Table 2.14: Section 2, Borrow Pits

No.	Name	Material	Status	Kilometrage, km/ Distance from alignment
1	Borrow Pits No.1	Gravel-sand Mix	Investigated/suggested by designers	Km 2335+175/ 60,29
3	Borrow Pits No. 3	Gravel-sand Mix	Investigated/suggested by designers	Km 1244+750/ 64,26
4	Borrow Pits No. 4	Gravel-sand Mix	Investigated/suggested by designers	Km 2356+850/ 67,28
5	Borrow Pits No. 5	Gravel-sand Mix	Investigated/suggested by designers	Km 2373+750/ 81,64

Figure 2.3.1: section 1 of Kurty-Burylbaital road, lay-out diagram of sources of road-building materials



2.6 TRAFFIC VOLUME AND TRANSPORT MODE

At road classification as one of many factors traffic volume is also considered. Based on information, obtained from Committee for Roads MID RK, for the last 3 years the following traffic volume is registered, presented in table 2.4.1.

Table 2.4.1 Information on vehicle traffic across Kurty-Togyz (Burylbaital) section in the period from 2014-2016

Bill of traffic intensity under Category I																		
Years	Transport flow structure																	
	Vehicle and microbuses	Buses		Single unit trucks						Trailer truck	Tractor semitrailer					Total, cars./day		
		Light vehicles (Paz-672)	Heavy vehicles (Икарус 260)	Two-axle, carrying capacity			Three-axis, carrying capacity				Tractor semitrailer							
				Up to 2 tones	Up to 5 tones	Up to 10 tones	5-10 tones.	10-12 tones.	More than 12 tones		2-axle (11-11)	3-axle (12-11)	2-axle (111)	2-axle (112)	2-axle (113)		3-axle (122)	3-axle (123)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
2014	2297	55	13	122	87	133	128	44	20	56	57	12	9	11	21	21	3	086
2015	2	61	14	135	96	147	141	49	22	62	63	13	10	12	23	23	3	

	412																282
2016	3016	69	16	165	75	156	168	57	25	67	70	15	10	11	26	26	3972
2020	3078	77	18	172	122	187	180	62	28	79	80	17	13	15	30	30	4188
2025	3929	99	23	219	156	239	230	79	36	101	102	22	16	20	38	38	5346
2035	6399	161	38	357	254	389	374	129	59	164	167	35	26	32	61	61	8707
S p.	0	0,010	0,195	0	0,04	0,39	0,17	0,35	2,72	0,89	3,3	0,61	2,55	4,73	3,9	6,08	
N p. 1st	0	1	3	0	4	57	24	17	60	55	207	8	25	57	90	141	749
<i>adjustment factor to car</i>																	
	1,0	3,0	4,0	1,5	2,0	2,5	3,0	3,5	3,5	4,0	5,0	6,0	3,5	4,0	5,0	5,0	
<i>actual traffic intensity</i>																	
% influx	73,5	1,8	0,4	4,1	2,9	4,5	4,3	1,5	0,7	1,9	1,9	0,4	0,3	0,4	0,7	0,7	100%
<i>prospective traffic intensity, resulted in car, unit/days</i>																	
2035г.	6719	507	160	562	534	1021	1179	473	215	688	875	221	97	135	323	323	14033

The table above shows, that traffic intensity grows year after year, for which reason it is required to broaden the road for further safety.

3. ENVIRONMENTAL AND SOCIAL BASIC DATA

3.1 SECTION 1

3.1.1 GENERAL DESCRIPTION

«Kurty-Togyz» road section of «Astana-Karaganda-Balkhash-Kapshagai-Almaty» of Centre-South corridor, «Border of RF (to Yekaterinburg)-Almaty» road of republican value is part of the main primary road, connecting Astana and Almaty cities. The region of alignment laying is located on the territory of Aydarly and Sarytaukum rural districts of Zhambyl district of Almaty oblast.

Section 1 (km 2295-km 2335) the main road direction is – south-east. This section will pass on the existing alignment Almaty-Astana M-36 between Kanshengel villages and behind Aydarly village. According to administrative division the designed section passes across the territory of Aydarly and Sarytaukum rural districts of Zhambyl district of Almaty oblast. Oblast has several villages with agricultural activity. The alignment plan crosses 2 seasonal/dry Ashisu and Otegen river beds.



Figure 3.1: Planimetric map of Almaty oblast

The total area of Almaty oblast is 428,0 thousand sq.km. The administrative center of oblast is located in Taldykorgan. There are 16 rural districts, 10 small towns, 15 villages, 759 rural areas (auls) in oblast. Oblast population is 1 631,4 thousand people (without Almaty). Total length of this section under the project is 40 km.

Zhambyl district – Length under the project is 40 km.

Figure 3.2. – Planimetric map of lay-out of Section 1.

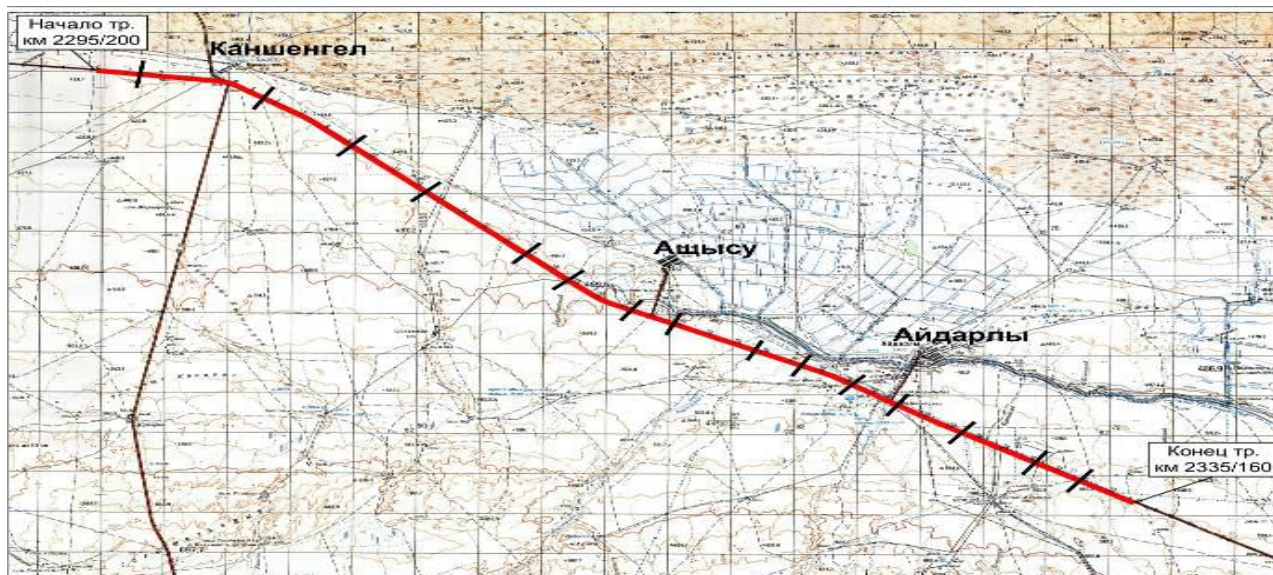


Table 3.1.1: The bill of adjunctions at carrying out the reconstruction of «Astana-Karaganda-Balkhash-Kapshagai-Almaty» Centre-South corridor, road section of republican value "border of the RF (to Yekaterinburg)-Almaty" km 2295-2335

No. c/sc	Direction	PK+	left	right	Angle, degree	Category of minor road	Width carriageway, m	Distance to populated area, km
1	Kanshengel	43+00	+		90	V	7,00	0,5
2	Kopa	42+40,17		+	100	IV	7,00	126
3	Topar	43+00,00	+		170	IV	7,00	130
4	Peasant economy	131+22,60	+		90	V	7,00	□ 1 km
5	Mynbai	131+29,62		+	90	V	7,00	□ 1 km
6	Ashysu	220+17,17	+		102	IV	7,00	3
7	Sholakespe	220+50,26		+	90	V	7,00	5
8	Peasant economy	288+72.68		+	90	V	7,00	□ 1 km
9	Aidarly	307+87,09	+		102	IV	7,00	2
10	Old Aidarly	349+21,29		+	115	V	7,00	2
11	Peasant economy	349+34,45	+		122	V	7,00	□ 1 KM
Total:								

3.1.2 CLIMATE

The climatic characteristics of the main villages along the designed alignment are presented in Table 2.1. Major climatic factors:

- 1) Sharply continental climate. An absolute maximum of air temperature – + 47°C, absolute minimum – (-46)°C;
- 2) Precipitations vary from 150 mm to 400 mm a year. Maximum precipitations in spring and the minimum in the summer;
- 3) Snow falls in November and snow cover lies 80-100 days, the thickness is 21-38;
- 4) Snow cover protects the soil from deep freezing.
- 5) Winds are usually from the north-east and the north-west;
- 6) Sandy storms can cause an erosion of soils in the summer.

The main climatic characteristics of the area of passing through the projected alignment section according to the close-in meteorological stations «Almaty» and «Kurty» are presented in table 2.1.

No.	Climatic indices	Almaty	Kurty
		3	4
1	2	3	4
1	Average annual temperature °C	+ 8,9	+7,9
2	Average temperature of coldest month (January) °C	- 6,5	-11,7
3	Average temperature of warmest month (July) °C	+ 20,7	+25,4
4	Absolute minimum temperature °C	- 38,0	-46,0
5	Absolute maximum temperature °C	+ 42,0	+47,0
6	Average precipitation level, mm, including winter period	491	243

Main climatic indices MS «Almaty», «Kurty»

7	Thickness of snow cover with 5% probability of exceedance, cm	50	50
8	Number of days in the year: ice-slick glazed rain drifting snow wind > 15 m/sec	12 7 5 21	2.0 2.0 25 25
9	Typical periods of air temperature More than 0 °C beginning end duration	13/03 11/11 242	7/03 18/11 255
	More than 5 °C beginning end duration	27/03 25/10 211	21/03 31/10 223
	More than 10 °C beginning end duration	13/04 9/10 178	6/04 15/10 191
10	Annual average wind speed m/sec	1,7	3,9

3.1.3 GEOMORPHOLOGY AND GEOLOGY

The project territory has quite complex geomorphological characteristic and very different relief because of location between high ridges of the Northern Tien Shan in the south, the southern plain of Balkhash lake in the north-west and the valley of Ili river in the north-east.

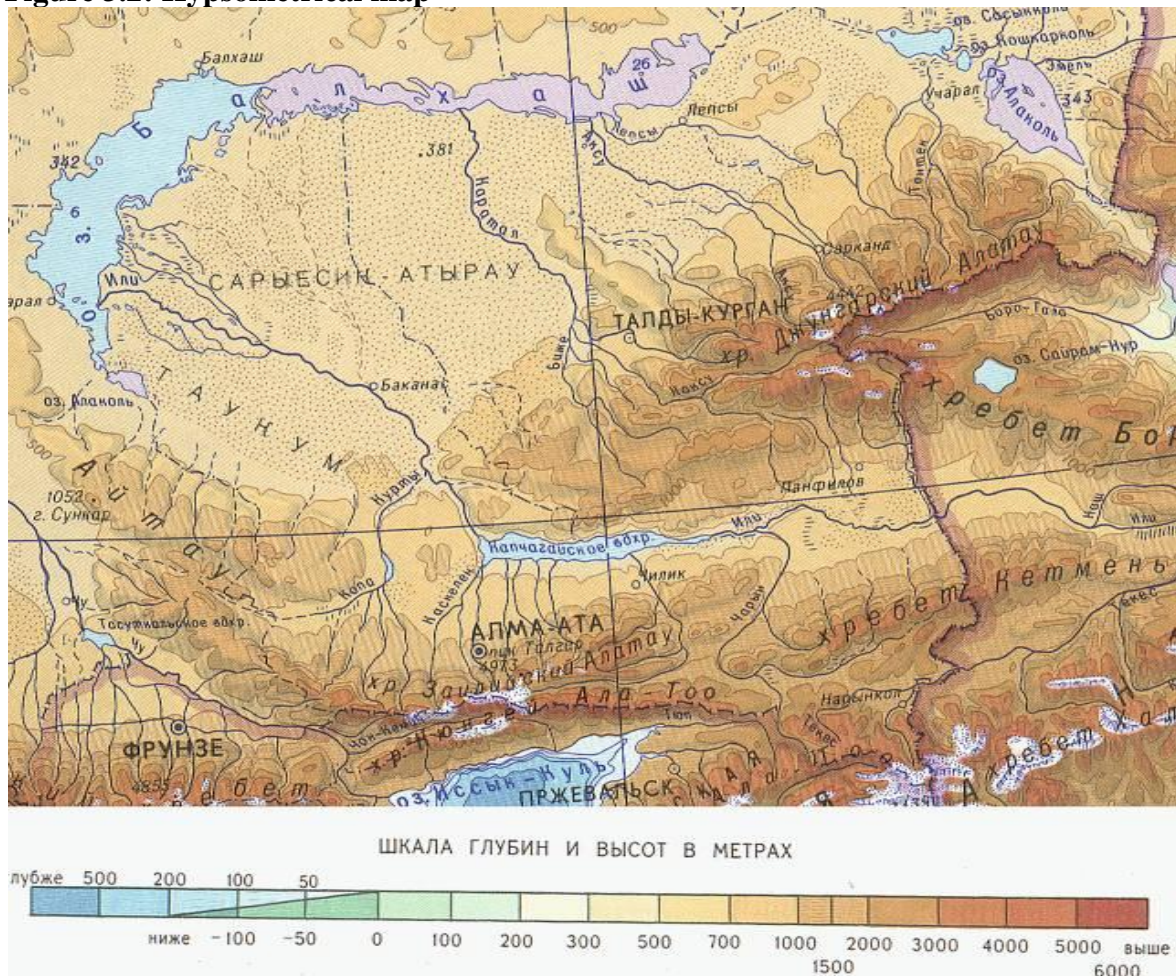
The alignment is laid in Ili-Balkhash-Alakul desert basin. This extensive province is located in a subzone of the middle desert and in the piedmont semi-desert in the south-east of Kazakhstan. The province is confined by Chu-Ili mountains in the west, by Central Kazakhstan hilly area in the north, by Barlyk ridges and the Dzungarian Ala Tau in the east, and by Zailiyskiy Alatau in the south.

The southern part of Ili-Balkhash-Alakol basin is the intermountain basin of Ili river. Directly the alignment passes across the piedmont semidesertic low-inclined plain (Zhusundal) with the continuous gradient to Ili river, crossed by bakanas.

Constant and nearest waterway is Kurty river. Kurty river is the last left-bank tributary of Ili river - the main waterway of south-east Kazakhstan. Length of the river is 123 of km, originates on a northern slope of Chu-Ili mountain, lower it put away for Ili hollow, the feed is rain, snow and groundwater. The river is shallow, is used for an irrigation, the reservoir is formed.

Relief of Almaty oblast is the piedmont plain of south-west slopes of Karatau ridge. The considerable part of the oblast is occupied by Balkhash-Alakol and Ile basins.

Figure 3.2: Hypsometrical map



3.1.4 SOIL AND SOIL-FORMING MATERIALS

The territory of Almaty oblast differs in non-uniformity of soil-formation factors. In case of change of climatic, hydrological conditions, a geological structure, vegetation and other factors, there is a change of the leading factors of soil formation.

The project is located in a semidesert and desert zone. The diagnosis and classification of soils was carried out according to the «Systematic list and main diagnostic indicators of soil of Kazakhstan». The soil cover of research object is non-uniform and also presented by underdeveloped, gray-brown light gray soils, ridge-hilly sands in conjunction with takyr-like sands. Soils are mostly saline. Mechanical composition differs from sands to clay loams and light clay. Soil-forming rocks are mostly saline alluvial-delluvial deposits, represented by loam, sandy loam and sand.

The most important aspect of the soil characteristics is its suitability for removal, retention and subsequent use. In accordance with GOST 17.5.3.06-85 (Definition requirements for removal of topsoil at earth works performing) GOST 15.5.1.03-86 (Classification of uncovering and host rocks for biological reclamation of land) all soils were investigated for fitness for removal and subsequent use for bioremediation are divided into following groups:

Group 1: Soils with limited agricultural value

Light-chestnut medium-depth usual, light-chestnut slightly saliniferous with medium saliniferous 10-30%, meadow-light-chestnut usual medium-depth, meadow light-chestnut usual medium-depth with slightly saliniferous 10-30%. Humus-accumulated horizon depth at these soils is from 20 to 47 cm. Humus is contained from 1,65-3,31%. Mechanical makeup is heavy clay loam. Recommended removal depth is from 20-40cm.

Group 1, calculated approximately 100 km of section 1 (90% general alignment of section 1).

Group 2 (unsuitable)

The second group comprises: meadow light chestnut medium saline with meadow-boggy medium saline 10-30%. light chestnut slightly truncated (eroded) with flood meadow 10-30%, light chestnut heavily saline mixed with hydromorph 10-30%, grey common medium eroded oil, grey general heavily saline, grey common heavily saline medium eroded mixed with meadow boggy 10-30%.

Normally this soil is not recommended for removal but since it is common within river valleys in the area it is not possible to avoid. This soil type is considered more valuable for agricultural purposes any activities disturbing or negatively affecting it shall be minimized to the extent possible. E.g. the soil type shall be considered for temporary works such as haul roads, laydown areas and camp-sites, to minimize impacts and ensure that restoration is diligently carried out.

3.1.5 LAND RESOURCES

The majority of lands of Section 1 are presented by pasture grounds. The land is taken out on a permanent basis for alignment construction, access roads and adjunctions, and also for temporary use. On the chosen sections under the designed road of burial, cattle mortuaries and archaeological monuments are absent. Residential and uninhabited buildings, and also other engineering linear constructions, which are subject to demolition, do not fall within construction strip.

The total area, which is subject to alienation in sustained use in borders of Zhambyl district of 80,429 hectares are pastures.

The total quantity of private lands falling within taking out in each area is given below.

Table 3.2 Lands, falling within permanent taking out for road construction

District	Quantity	of	Land area (ha)	Notice
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	owners		
Zhambyl	67	80,429	

Additional land will be required under borrow pits and bases constructions, workshops and camps for workers. In construction period 28,7 hectares of pastures is become alienated, from them 3, 7 hectares for building sites under warehousing of construction materials and 25,0 hectares for development of borrow pits of road-building materials for temporary use.

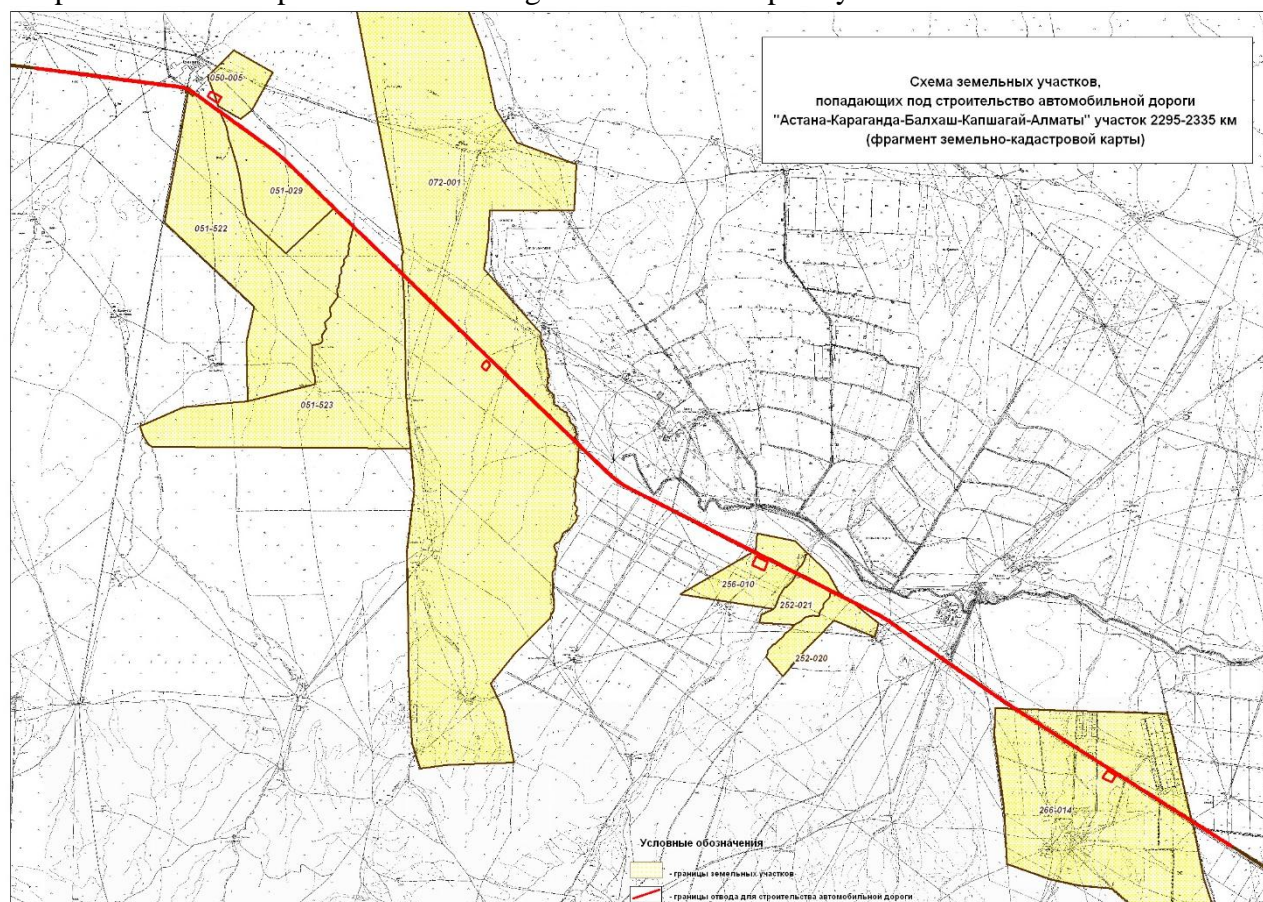


Figure 3.3: Scheme of land plots, falling within road construction, Section 1

Contractors will get access to all lands for temporary use by way of negotiation conducting with owners or tenants.

Considering the requirements of the land legislation all temporarily occupied sections there have to be reclaimed. The technology, the procedure and volumes of remediation works are described in appropriate section of the working draft.

3.1.6 HYDROLOGICAL CHARACTERISTICS

Surface waters

Although rainfall is comparatively rare the Almaty oblast is fairly rich in water resources due to the proximity of the mountains, where precipitation is higher and snow- melt and glaciers provides a perennial runoff. The territory of the oblast is irrigated with several large rivers and lakes, which belong to the internal closed Balkhash-Alakul basin. The most watercourse of the oblast is Ili river.

Constant and the nearest waterway is Kurty river. Kurty river is the last left-bank tributary of Ili river – the main waterway of south-east Kazakhstan. The river length is 123 km, originates on a north slope of Chu-Ili mountains, lower put away for Ili hollow, feed is rain, snow and groundwa-

ter. The river is shallow, is used for an irrigation, reservoir is formed (it is located near Kurty village).

Underground waters

Designers carried out hydrological and geological researches along the project road with drilling of slits through each 500 m on plains and with more frequent drilling on changes of a landscape. The characteristic of underground waters is shown in fig.3.4.



Figure 3.4: Hydrological map of project territory.

3.1.7 FLORA AND FAUNA

The alignment plan passes through the territory of Zhusandaly preserved area, located in the territory of Ili and Zhambyl districts of Almaty Oblast and Korday, Moiyunkum district and Shu district of Zhambyl oblast.

Flora

The road passes through the territory of Zhusandaly preserved area, which occupies very big territory (2 757 500 hectares). The figure below shows the alignment plan (the red line between two yellow points on the right), which while is located within the territory of preserved area – and is still very far from a direct preserved area (I, II and, and Iib) and places of animals' appearance, as shown in the drawing below.

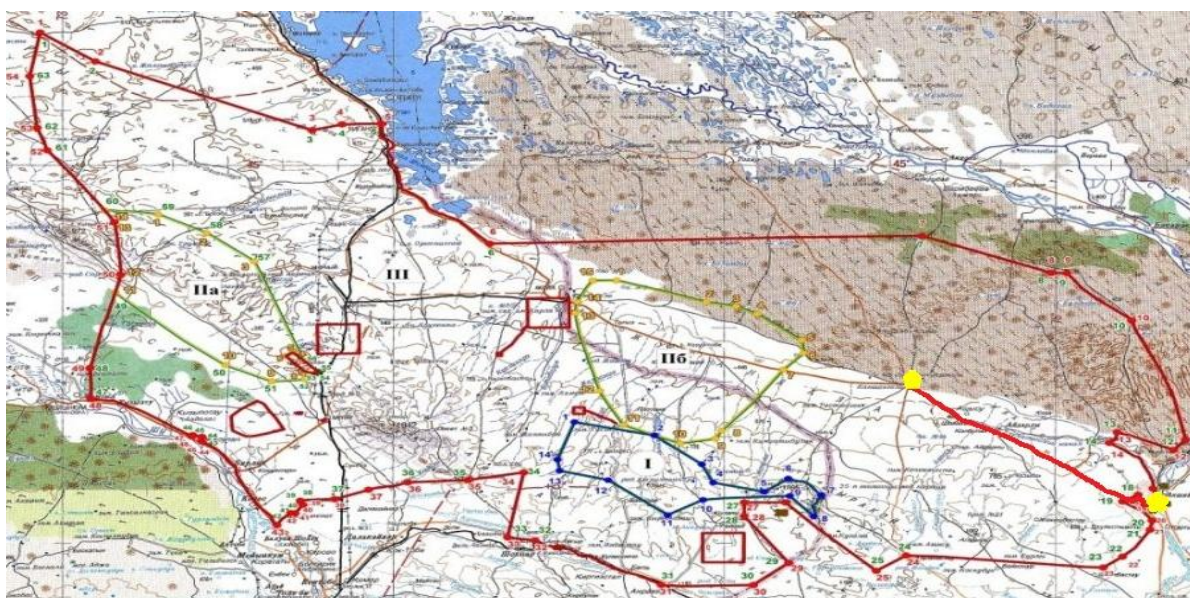


Figure 3.5: Map-scheme of territory of Zhusandaly preserved area

The following mammals appear on this boundary Zhusandaly Zone: goitred gazelle, wolf, jackal, fox, corsac fox, hare. At the same time, as shown in the figure below (4.6 and 4.7) places of animals appearance are located further to the North and the West, and the regular or seasonal animals migration is not observed in the area of alignment plan. Bridges, culverts and cattle passes, and also agricultural transitions will serve as a potential route for casual animals' migration. Average height of an embankment of 2-3 meters over the existing earth level will also «direct» animals to transitions and to culverts.



Figure 3.6: Map-scheme of appearance of wolf, jackal, fox and corsac fox



Figure 3.7: Map-scheme of appearance of goitred gazelle, mountain sheep, roe

There are about 200 bird species in Zhusandal (Berezovikov, 1999), including 83 types of the nesting and more than 100 migrating. The nesting types represent a typical complex, for deserts of Northern Eurasia, in the form of such types as *Chlamydotis undulata* (Mac-Queen's bustard), *Aquila heliaca* (imperial eagle), *Falco naumanni* (Naumann's kestrel), *Burchinus oediconemus* (Norfolk plover), *Charadrius leschenaultia* (Geoffrey's plover), *Charadrius asiaticus* (Caspian dotterel), *Syrhaptes paradoxus* (Pallas sand grouse), *Pterocles orientalis* (black-bellied sandgrouse), *Calandrella rufescens* (Grey Lark), *Calandrella brachydactyla* (red-capped lark), *Hippolais rama* (booted warbler), *Sylvia nana* (desert warbler), *Oenanthe deserti* (desert chat), *Cercotrichas galactotes* (rufous warbler), *Lanius pallidirostris* (desert shrike) (gray shrike), *Corvus ruficollis* (desert corbie crow), *Rhodospiza obsoleta* (desert finch) and *Emberiza bruniceps* (red-headed bunting). Areas of birds appearance are shown in the figure 3.8. and 3.9.



Figure 3.8: Schematic map of communication of Mac-Queen's bustard, bustard, small bustard and gray crane

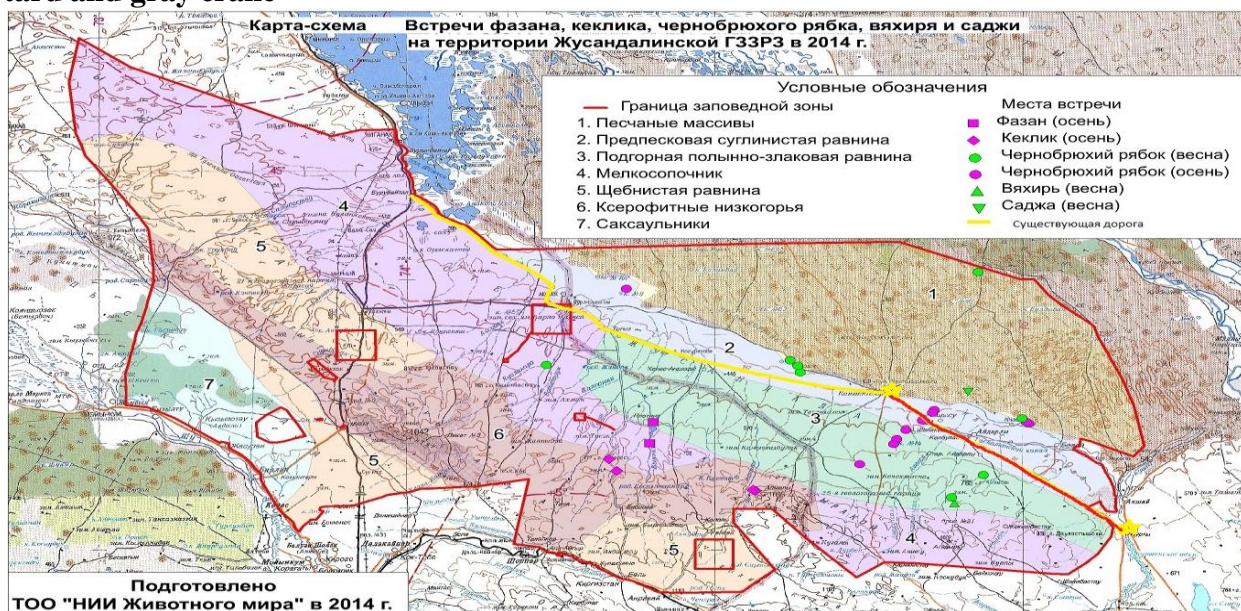


Figure 3.9. Schematic map of ranging of pheasant, partridge, black-bellied sandgrouse, ring-dove and Pallas sand grouse

Flora

The proposed route of the alignment plan is located in a desert steppe zone of the irrigated and not irrigation agriculture, and also sheep breeding and cattle breeding. Vegetation on gray soils generally consists of a wormwood. A considerable part of vegetation is presented in the form of a kind of a dayfly: meadow grass, fire, small sedge, poppies.

The following types can be found in major area of Zhusandaly.

The species of plants, which are under the threat of disappearance:

- Regel tulip – *Tulipa regelii* Krasn (Liliaceae). The status – a rare, endangered, endemic species;
- *Atraphaxis teretifolia* – *Atraphaxis teretifolia* (M.Pop.) Kom. (Polygonaceae). The status – a rare, endemic, epibiotic species;
- Betpak-daly campion – *Silene betpakdalensis* Bajt. (Caryophyllaceae). The status – a rare, endemic species;

- *Niedzwedzkia semiretschenskia* B.Fedtsch. (Bignoniaceae). The status - very rare, narrowly endemic, endangered, relic species of a monotype sort.

Rare species of plants:

- Albert's tulip – *Tulipa albertii* Regel (Liliaceae). The status – a rare, endemic species;
- *Stipa karataviensis* Roshev (Poaceae). The status – a rare species with the reduced area;
- Greig tulip – *Tulipa greigii* Regel (Liliaceae). The status – a rare, endemic species with the reduced area;
- Kolpakovskii tulip – *Tulipa kolpakowskiana* Regel (Liliaceae). The status – almost endemic species, with strongly reduced numerosity;
- *Iridodictyum Kolpakovskianum* (Regel) Rodion. (Iridaceae). The status – species with decreasing area and numerosity;
- *Silene muslimii* Pavl. (Caryophyllaceae). The status – a rare, endemic species;
- *Stubendorffia gracilis* (Pavl). Botsch. et Vved. (Brassicaceae). The status – a relic, endemic species, meets in limited places;
- *Astragalus pseudocytisoides* M.Pop.(Fabaceae). The status – a rare, narrowly endemic species;
- *Ferula taucumica* Bajt. (Apiaceae). The status - a rare, narrowly endemic species;
- *Acantholimon titovii* Lincz. (Limoniaceae). Status: rare, endemic, over the last time its natural habitat has sharply reduced;
- *Pedicularis czuiliensis* Semiotr. (Scrophulariaceae). Status: rare, narrow endemic;
- *Cancriniella krascheninnikovii* (N.Rubtz.) Tzvel. (Asteraceae). Status: narrow endemic plant of monotypic type;
- *Jurinea robusta* Schrenk (Asteraceae). Status: rare, relic, endemic type;
- *Scorzonera chantavica* Pavl. (Asteraceae). Status: rare, narrow endemic species with decreasing number.

Widespread types, but seldom in the territory of nature conservation areas:

- *Celtis caucasica* Willd. (Celtaceae). Status: widespread species, but seldom in the northeast of its natural habitat.

It should be noted, however, that the road passes along the existing alignment and shall not significantly affect rare or endangered species more than the existing situation related to the human activities in the project area, which is affected by intensive agricultural activities, partially used for cattle grazing. The ecosystem in this area has thus already adapted to the human activities, and therefore, it is so far less sensitive in comparison to the unaffected natural environment.

Flora and Fauna: Methodology for the Study of Biodiversity Issues along the Alignment

Based on the consultants' field studies within the alignment and provided information, as well as field studies of the design engineers, it can be summarized that the alignment passes through sensitive fauna or flora. During the public consultations held in August there was a discussion of potential problems with wild animals in the Section 1.

The environmental protection team of the PMC undertook a number of site visits to the alignment accompanied by the design engineers and other experts. They met with experts at the site, at public consultations and had other meetings in Almaty. Telephone interviews were conducted with representatives of public authorities and other experts. The team also studied a series of websites in Russian and English to determine and understand the fauna resources and issues in the area of Kurty-Burylbaital road.

3.1.8 PHYSICAL AND CULTURAL RESOURCES

One of the issues that must be considered during the construction of the road is the preservation of

physical cultural resources (PCR) such as certain structures, commemorative sites and other objects associated with historical events in the life of the community. This includes structures and sites of material and spiritual art, which are of historical, scientific, cultural value (antique buildings, burial mounds, archaeological sites). As per the conclusion of the archeological survey of the Section km 2295-2335 for reconstruction of “Astana-Karaganda-Balkhash-Kapshagai-Altay” national road No.AEC-04 dated 20.05.2014 carried out by “Archeological Expedition” LLP, economic development of the territory which was allocated for the road construction in the specified section is allowed at observance of the conditions provided by Article 39 of the Law of the Republic of Kazakhstan “On Protection and Use of Historical and Cultural Heritage Objects”. That is, after complete archaeological study of the monuments located in the road construction area and after their removal from the Government Accounting:

- When developing the territories before land acquisition, surveys shall be carried out to identify objects of historical and cultural heritage.
- In case of detection of the objects of historical, scientific, cultural and other value, individual and legal entities are obliged to suspend further works performance and to report about it to the authorized body.
- It is prohibited to carry out works which can pose threat to the existence of objects of historical and cultural heritage.

On the basis of the specified Law, surveys were carried out in the South Kazakhstan Oblast within the Right of Way of the Section 1, which is 100 m to the right and 100 m to the left from an axis of the existing road (hereinafter referred to as the “Right of Way”).

The assessment was carried out in the territory with the total length of 40.0 km, covering 200 m to the right and 200 m to the left from the axis of the existing road (hereinafter referred to as the “Territory of Assessment”).

In the course of the Assessment, 8 objects of historical and cultural heritage (hereinafter referred to as the “HCH Objects”) were identified in the Territory of Assessment, including:

- 2 HCH Objects, which are archeological monuments (objects Nos. 6, 7);
- 6 contemporary memorials (objects Nos. 1-5, 8).

Table 3.4. Historical and Cultural Heritage Sites Identified in the Course of Archeological Assessment in the Section 1

No.	HCH Objects	Geographic Coordinates, UTM	Location relative to the Axis of the Road	Description of the HSH Object
	Starting Point of Section 1	43 T539648.57 4908051.01	2295 km of M36 road	
1	Contemporary memorial	43 T541045.38 4907831.30	To the right from M36 road	Placed to Studenov Igor Petrovich 1961-1993
2	Contemporary memorial	43 T549519.06 4902718.59	To the left from M36 road	Placed to Galina Pavlovna 1960-1993
3	Contemporary memorial	43 T555413.91 489621.72	To the right from M36 road	Placed to Dyorov Pavel Petrovich 1927-1981
4	Contemporary memorial	43 T556228.49 4896373.25	To the right from M36 road	Placed to Dzhadrayeva Zarema Mukashevna 1983-2005
5	Contemporary memorial	43 T557413.71 4895837.37	To the left from M36 road	Placed to the dog with the inscription “To Chip, the Devoted Dog”
6	Single burial mound (kurgan)	43 T562936.84 4892888.79	To the right from M36 road	The fill of the burial mound is of flat hemispherical form, rounded in layout, made of soil and rock, loosely covered with turf. Diameter is 13m, height is 0.3m. There is a ditch at the outside edge of

No.	HCH Objects	Geographic Coordinates, UTM	Location relative to the Axis of the Road	Description of the HSH Object
				the mound foot with the width of 0.8 m, depth of up to 0.2 m.
7	Kurgan-type burial ground	43 T564370.19 4891853.56	To the right from M36 road	Consists of five burial mounds (kurgans) stretched out along the SW-NE line. The mounds are made of soil and rock, of flat hemispherical form, rounded in layout. The diameter of the mounds ranges from 11 to 15 m, the height ranges from 0.1 to 0.3 m.
8	Contemporary unmarked grave	43 T564864.16 4891753.51	To the left from M36 road	Metal fencing of the Muslim burial. Unmarked.
	Section endpoint	43 T572681.85 4886660.62	2335 km of M36 road	

The following was recommended to ensure preservation of HCH Objects identified in the Territory of Assessment:

1. In regard to Objects Nos. 6 and 7: to establish protective fencing along the perimeter of the specified burial mound taking into account the protective zone of 50 m from its border for the entire period of the road construction.
2. In regard to Objects Nos. 1-5, 8 (contemporary memorials): To coordinate protection measures in its relation for the road construction period with the local executive authority.
3. At construction of the road, according to the Law RK dated 02.07.1992. "On the Protection and Use of Historical and Cultural Heritage Objects", it is necessary to show vigilance and care, in case of chance finds in relation to remnants of ancient structures, artifacts, bones and other signs of material culture, it is necessary to suspend all construction works and to report about finds to the local executive bodies or to Archeological Expedition LLP.

3.1.9 SOCIAL AND ECONOMIC CHARACTERISTICS

The road mainly passes through the rural districts with low population density. The total number of population of 2 districts, through which this road section passes, is as follows:

Table 4.3 Population of Districts in the Section 1

District	Population (2011)
Zhambyl	126 108
Ili	154 124

Since the road mostly runs through the vast territory, the number of population level living in close vicinity to the road is low.

Zhambyl District

Kastek (nowadays Zhambyl) district was established on September 3, 1928.

By the 75th anniversary of the great akyn Zhambyl Zhabayev, based on the Resolution of the Central Executive Committee of Kazakhstan dated 19.05.1938, Kastek District was renamed into the Dzhambul District. On the basis of the Resolution of Board of the Presidium of the Supreme Council of the Republic of Kazakhstan dated May 4, 1993 "On the Ordering of Exact Transcription of Names of Toponymics with the Kazakh Language into Russian Language and Renaming of

Certain Administrative-Territorial Settlements of RK”, Dzhambul District became Zhambyl District.

On the basis of the Resolution of Dzhambul District Council of People’s Deputies No. 14-7 dated February 15, 1992, executive committees of district and rural Councils of People’s Deputies were abolished in the territory of the district.

On the basis of the Decision of Zhambyl District Council of People’s Deputies No. 11-680 dated November 29, 1993, activities of one district and 21 rural Councils were early ceased, and authorized representatives of the head of the district administration were introduced in the territory of former district, rural, settlement Councils of People’s Deputies.

Since January, 1994, based on the Decision of the District Council No. 1-6 dated January 6, 1994, rural administrations were established.

Based on the Decision of Akim of Zhambyl District No. 3-46 dated March 5, 1996, district and rural administrations were liquidated, and the Personnel of the District Akim and Personnels of Akims of rural and settlement districts were established.

Based on the Decree of the President of Kazakhstan “On Changes in the Administrative-Territorial Structure of Almaty Oblast” dated May 23, 1997, Kurty District was abolished, and Aidarly, Bozoy, Temirzhol, Sarytaukum rural districts and Ulken Settlement District were transferred to Zhambyl District.

The district is composed of 23 rural and 1 settlement districts.

Zhambyl District is located in southwest part of spurs of Trans-Ili Alatau, in the western part of Almaty oblast. The area of the territory is 19.3 thousand sq.km; there are 61 settlements.

As of January 1, 2013 population of the district was 136 800 people. The population is represented by more than 30 ethnicities and ethnical groups.

The district center is Uzynagash Village with the population of 38 589 people.

Zhambyl District is related to agricultural areas. The proximity of the location of cultural and financial center of Kazakhstan, which is Almaty, is an important factor.

Mineral Resources

There are reserves of gold, silver, lead and zinc in Kastek and Chinasylsai mineral deposits. Gravel, cement raw materials are mined in Chilbastau deposit. There is a reserve of gravel and sand mix near Kargaly Village.

Water Resources

The large rivers are Uzynkargaly, Kutyrgan, Zhirenaigyr, Karakastek, Kastek, Zhamanty. Ulken Settlement is located on the bank of Balkhash Lake.

Agriculture

In 2013, the volume of gross output of agriculture amounted 21 681.4 million KZT or increased by 4.7% (4 627.9 million KZT) compared to the level of 2002.

Crops occupy 91.1 thousand hectare, which is more by 3.4 thousand hectare than the level of 2010.

The areas of crops cultivation using intensive technology were increased to 6.4 thousand hectares (2010 – 4.1 thousand hectare), moisture-preserving technology – to 6.5 thousand hectare (2010 – 4.6 thousand hectare), trickle irrigation – to 20 hectare (2010 – 15 hectare).

Grain crops are cultivated in all regions of the area and occupy 51.9% of all cultivated areas; crop volume exceeds 1200.0 million tons in recent years (2011 – 99.2 thousand ton).

Annually, production of oil-bearing crops, vegetables, potatoes, fruits and berries, grapes is increased.

There is 1 elite seed-growing farm and 2 farms on production of high-reproductive seeds of crops operating in the area.

There is 293 hectare of gardens of fruit-bearing age in the area. Planting of new gardens is made annually. In 2011, there were 11 fruit crops planted.

Measures for development of greenhouse farms are implemented to ensure the population of the district and Almaty with fresh vegetables during interseasonal period.

As of today, there are 71 greenhouses for cultivation of vegetable products with a total area of 4.58 ha operating.

It is observed that there is steady growth in production of livestock products and number of farm animals in animal husbandry.

As of today, there are 16 breeding facilities. Specific weight of the breeding number of cattle in the general herd makes up 13.05%, sheep – 10.5%, horses – 12.5%.

In 2013, the volume of gross output of agricultural production made up 21.6 billion KZT, crop products – 10 494.0 million KZT, animal husbandry products – 11 127.4 million KZT.

Industry

In 2013, industrial output made up 7 763.8 million KZT or increased by 3.6% (2 133.9 million KZT) compared to the level of 2002, the index of physical volume – by 101,0%.

The mining industry and development of quarries occupies 13.4% in area total production; over the reporting period, products worth 1 046.3 million KZT have been produced, manufacturing industry – 76.9%; products worth 5 971.2 mln KZT were produced.

The volume of electric power, gas, steam supply and air conditioning made up 7.9% of the total volume of industrial production in the area (618.9 million KZT), water supply; sewer system, control over waste collection and distribution – 1,6% (127,4 million KZT) respectively.

Motor Roads and Transport

Length of public roads in the area is 1 318 km, including 412 km of national roads, 659 km of regional roads and 247 km of local roads.

There are 13 bridges and 511 culverts on regional and district roads of the oblast.

Among regional roads, there are 69 km (10%) of roads with asphalt concrete pavement; 561 km (85%) – with black crushed stone pavement; 9 km (1%) – with gravel and crushed-stone pavement; 22 km (3%) - without pavement (earth road).

In regard to regional and district roads, it should be noted that only insignificant part them is in a good condition (86%). Other roads can be classified as satisfactory roads – 11%, there are 30% of unsatisfactory roads. The road of regional significance, which makes up 45%, has no hard surface.

Traffic lights and road marking are available only in the district center, on the regional and national roads.

Regional roads and streets of settlements do not meet the requirements neither for traffic speed, nor for axial load, as well as do not ensure traffic safety.

Annually, current and medium maintenance of roads is carried out in the area. In 2012, current, medium maintenance and overhaul of the roads of the area were carried out; in 2013, current and medium maintenance of streets of settlements in Zhambyl District is planned.

There is motor type of transport in the area. Passengers and luggage carriage is provided by TRANSSERVICE LLP which has the equipped production base and coach station. There is 1 coach station operating. There are 20 interurban routes running in the area.

Compared to 2004, motor transport turnover increased by 92,1% and made up 196 037,0 thousand t.km. in 2012, the passenger turnover increased by 95,2% and made up 219 173,4 thousand pass.km in 2009.

There is a mainline railroad passing through Zhambyl District with the total length of 110 km. Problems:

- high extent of aging of the vehicles fleet – operation of over 12 years;
- lack of intra-district routes;
- lack of parking lots for taxis.

“Kanshengel” settlement of Zhambyl District of Almaty Oblast is located in the section of “TOP Geodesy” LLP km 2214-2295 (81 km) and Kazdorproject LLP km 2295-2335 (40 km), 2 km away from the road. The name of “Kanshengel” settlement came from the Kazakh word “Kalyn Shengel”, which means “Dense Thickets” of local bushes called “shengel”. There is another of version: in ancient times, there were terrible, bloody wars, and back then all the bushes became red because of enemy blood (blood in Kazakh is “kan”). At the beginning of the 18th century, 60 km away from here, there was the Great Anrakai Battle with Dzungars. Anyway, all the local and old residents agree in the opinion that the earth is sacred here. In Soviet period, the settlement was used as a transit point, when shepherds (sheepherders) were driving the flock (herd of sheep) from winter pasture (kystau) in sands to summer pasture (zhailau) in mountains and vice versa. There was also a runway for planes of light aviation which was liquidated long time before the collapse of the Soviet Union. There was a bulky communications station in the settlement, which provided communication even with Moscow; unfortunately, now it also does not exist. Currently, it is a small settlement – a mixture of the Kazakh nomadic culture and modern technologies.

Kopa (Qopa in Kazakh) is a village in Zhambyl District of Almaty oblast, which is a part of Samsy Rural District. It is located approximately 53 km away to the northwest from Uzynagash Village.

In 1999 the population of Kopa Village was 531 persons (260 men and 271 women). According to census of 2009, there were 570 people (299 men and 271 women) living in Topar Village.

Topar is a village in Balkhash District of Almaty Oblast. It is the administrative center and the only settlement of Topar Rural District.

In 1999 the population of Topar Village was 1 327 people (696 men and 631 women). According to census of 2009, there were 1 305 people (680 men and 625 women) living in the village.

Ashchisu is a village in Zhambyl District of Almaty Oblast. It is the administrative center and only settlement of Sarytaukum Rural District.

In 1999, the population of the village was 621 persons (327 men and 294 women). According to census of 2009, there were 340 people (173 men and 167 women) living in the village.

Aidarly is a village in Zhambyl District of Almaty oblast. It is the administrative center and only settlement of Aidarly Rural District.

In 1999, the population of the village was 1 246 people (659 men and 587 women). According to census of 2009, there were 1 251 persons (623 men and 628 women) living in the village.

In all the above villages, residents are engaged in animal husbandry, in particular breeding of camels, cattle, horses and small cattle.

Land plots are used for cattle grazing, and melons are grown on the sites with fertile soil.

Ili District is located in the central part of Almaty Oblast and borders in the northeast with Balkhash Area, in the west with Karasai and Zhambyl districts, in the southeast with the lands of Almaty, in the east with Talgar District.

About 80% of the territory is located in desert and desert-steppe zones: sands of Sartaukum and Karaoy Plateau. The Karaoy Plateau is used for dry farming. Sands of Sartaukum are winter, spring and autumn pastures. The relief is characterized by existence the ridgy and ridgy-hilly sandy formations.

Climate of the area is sharply continental. Average temperature in January is 7-9 °C, in July - 22-25 °C. [4] The annual quantity of atmospheric precipitation is 200-3500 mm.

Ili, Kaskelen rivers, Grand Almaty Channel run in the territory of the district, Kapchagai Water Reservoir adjoins to the territory of the district in the north. There are light brown, gray soils.

Sheep fescue, wormwood, cheegrass, tereskep, alkali grass, sedge, oleaster, reed, saxaul grow there. Wolves, foxes, corsacs, hares and boars inhabit the area.

On July 17, 1928, Ili District was renamed into Kargaly District with its center in Bezvodnoye Village. In 1970, “Ilyich Zholy”, “The Way of Ilyich” district newspapers started to be published in the territory of the district. Kazakhs make up 54,6%, Russians – 30,1%, Uyghurs – 1,7%. The area is 7 800 sq.km.

Economy

Alma-Ata – Semipalatinsk railroad, Alma-Ata — Kapshagai motor road runs on the territory of the district.

As of 1987, the area of agricultural grounds made up 435.5 thousand ha, including: 435,5 thousand ha of pastures, 136,7 thousand ha of arable land (14,5 thousand ha of irrigated land), 2,2 thousand ha of hayfields, 11,9 thousand ha of woods. Cultivation area in 1987 was 84,6 thousand ha for grain crops, 3,4 thousand ha for industrial crops (mainly sugar beet), 1 thousand ha for melons, 600 ha for grapes, 300 ha for fruits and berries.

The cattle livestock in 1985 was as follows: 32 thousand heads of cattle, 196,1 thousand heads of sheep and goats, 68 thousand heads of pigs, 3,2 thousand heads of horses, 1,6 million heads of poultry.

Enterprises

Almaty sugar plant is included into AlmatyKant Corporation now; repair depot was servicing the sugar plant earlier, but now it exists at the expense of private orders; the brickworks does not operate now; on the place of the borrow pit, where clay was extracted earlier, a warehouse of oil products was constructed; instead of the former “KazMarble” plant, which employed about 1 000 people until 1991, there is “Assyl Tas and Co” enterprise now with the number of workers of 30-40 people; there are also “Frutai” plant of beverages, TUMA Universal Base, “AlmatyAulKurylysy” on the basis of “Bent” poultry farm, 2 bakeries and many others. Boraldai Airport is located on the east edge of the settlement.

Akshy (Aqshy in Kazakh) is a village in Ili District of Almaty Oblast. It is the administrative center of Kurty Rural District, which is located on the right bank of Kurty River, approximately 82 km to the southeast from Otegen-Batyr Settlement, which is the administrative center of the district, at the height of 507 meters above sea level.

In 1999 the population of the village was 4 662 people (2 300 men and 2 362 women). According to census of 2009, there were 5 646 people (2 800 men and 2 846 women) living in the village.

Site visits: environmental protection team of the PMC, which is in charge of preparation of the preliminary EIA report, visited “Kurty-Burylbaital” road alignment:

- On July 10: they visited the site together with design engineers and representatives of Regional Department of the Committee for Roads, as well as with representatives of the World Bank, a social expert. It was the first site visit held to review general direction of the road alignment and obvious impacts of the Project.
- On August 7: they visited the site accompanied by the design engineers in order to inspect agricultural land along the alignment and the needs for additional cattle crossings.

Discussions with the following people on fauna issues and potential problems caused by road construction were held:

- Dzhubaniyazov Zhanibek Bissengaliyev, “OKHOTZOO PROM” PO” RSME, Zhussandaly State Conservation Area of the national significance. Deputy Director (telephone conversations, letters on these populations of animals and plants).

Meetings with design engineers:

- Sultanbek Karimov, Kazdorproject LLP, General Director, Chief Engineer of the Project for the Section 1 (support during site visits and public consultations, phone conversations)
- Yashchenko S.Yu, Doris LLP, Chief Engineer of the Project for the Section 2 (support during site visits and public consultations).

Websites reviewed and referred to:

- ru.wikipedia.org
- redbookkz.info
- caspionet.kz
- greensalvation.org
- unesco.org/en/tentativelists
- birdlife.org/datazone/sitefactsheet
- egov.kz/wps/portal/
- en.wikipedia.org/wiki/Endangered_species
- iucnredlist.org
- wwf.panda.org

A series of websites on travel and tourism in Almaty oblast provided useful information about the wildlife and probability of coming across with faunal and floral form.

Conclusion: The PMC environmental team obtained data from a range of sources and people who are familiar with the area and the alignment. Since the alignment passes through the existing road already impacted by carious projects, road reconstruction will incrementally contribute to this anthropogenic impact, but will not create substantial new impacts.

3.2 SECTION 2

3.2.1 GENERAL DESCRIPTION

Road Section 2: (km 2335 – km 2380). This section will pass along the existing Almaty-Astana road, starting from Kurty Village. Based on the administrative division, the designed section passes through the territory of Ili and Zhambyl districts of Almaty Oblast. The road has a dense infrastructure network and several settlements with intensive agricultural activities in undeveloped places.

The main watercourse crossing the road is Kurty River, which originates on northern slopes of Kastek and Zhetyzhol ridges and is formed by merging numerous inflows, such as Kopa, Zhire-naigyr, Aksengir, Zhyngyldy. In relation to the hydrological analysis, only the river of Kurty was studied in the area of the road alignment, where capital dam with a water reservoir was constructed. The existing bridge over Kurty River at km 2377+400 which was built in 2002 will be reconstructed and the new bridge will be built for additional two lanes.

The alignment crosses Byryozek (Utegen) River at km 2349+150. The existing bridge was built in 1974 at the site of road crossing the periodic waterway is now in a critical condition. Most likely this bridge will be built anew.

The average level of the section is 600 m above the sea level; with a minimum of 560 meters and a maximum of 640 meters.

The terrain is flat; the natural incline of the area is not clearly defined. Seismic activity of the area is 9 points – SNiP RK 2.03-30-2006.

The soil cover around the alignment is developed poorly, presented by slightly humous gray soils with thickness up to 20 cm.

The designed section of the road reconstruction runs through the territory of Zhusandaly Conservation Area (information on potential impacts and mitigation measures are the same as for the Road Section No.1).



Figure 3.2.1: Planimetric Map of Almaty Oblast

The total area of Almaty Oblast is 428 thousand square kilometers. The administrative center of the oblast is located in Taldykorgan. There are 16 rural districts, 10 small towns, 15 settlements and 759 villages (auls) in the oblast.

The population of the Oblast is approximately 1 631.4 thousand people (excluding Almaty). The total length of this section is 45 km.

- 1) Zhambyl district: the length as per the design is 24 km;
- 2) Ili district: the length as per the design is 21 km.



Figure 3.2.2: Schematic Layout of the Section 2 Location

Table 5.1.1: Summary sheet of junctions at the reconstruction of “Astana-Karaganda-Balkhash-Kapshagay-Almaty” Center-South Corridor Section of “The Border of the Russian Federation (to Yekaterinburg) – Almaty” km 2335-2380 national road.

No.	Direction	PK+	left	right	Angle, degree	Category of the minor road	Width of the carriageway, m	Distance to the settlement, km
1	Farm	303+76		+	90	V	8,00	0,5
2	Uzynagash Village	405+00		+	15	IV	10,00	36
3	Akshi Village	441+50	+		33	IV	8,00	11
4	Kurty Village	449+23		+	71	V	8,00	2 KM
Total:			1 nos	3 nos				

3.2.2 CLIMATE

Same as for the Road Section I and is provided in the Sub-Clause 3.1.2

3.2.3 RELIEF AND LANDSCAPE

Same as for the Road Section I and is provided in the Sub-Clause 3.1.3

3.2.4 SOILS AND SOIL-FORMING MATERIALS

Same as for the Road Section I and is provided in the Sub-Clause 3.1.4

3.2.5 LAND RESOURCES

Section 2 passes through irrigated land near Nurly Village. To the east from Nurly Village, the area is represented by non-irrigated lands, which are almost not suitable for pasture, or unusable semi-deserts. Land is taken for permanent acquisition for the construction of the road, access roads and junctions, including agricultural land with a small amount of commercial and industrial buildings. There are no residential buildings affected by land acquisition. Land acquisition is almost completed, and the process is described in the Report for Resettlement Measures Implementation. At all sites there are sections that have not been acquired yet (86 land plots).

Land acquisition for the construction and reconstruction of the road was carried out at the stage of survey works with land management agencies and authorities for environmental protection. Total number of private lands that were affected by acquisition in each area is provided below. Most of the land plots have been already acquired, and compensation for them has been paid.

Table 3.2.2 Land Subject to Permanent Acquisition for the Road Construction

District	Number of Owners	Land Area (ha)	Notes
Zhambyl district	33	80,429	Part is located in the Section 1
Ili district	9	20,971	Part is located in the Section 2

Additional land plots will be required for quarries and construction of depots, workshops and camps for workers. Contractors will have access to all land for temporary use by negotiating with the owners or tenants. In all cases, the land required for temporary and permanent use is agricultural, pastoral or uncultivated.

Taking into account the requirements of the land legislation, all temporarily occupied areas must be reclaimed. Technology, procedure and amount of reclamation works have been described in the relevant section of the working draft.

3.2.6 HYDROLOGIC CHARACTERISTICS

Same as for the Road Section I and is provided in the Sub-Clause 3.1.6

3.2.7 FLORA AND FAUNA

Same as for the Road Section I and is provided in the Sub-Clause 3.1.7

3.2.8 SOCIAL AND ECONOMIC CHARACTERISTICS

The road mainly passes through rural areas with low population density. The total number of population of 2 districts, through which this road section passes, is as follows:

Table 5.3 Population of Districts in the Section 2

District	Population (2011)
Ili	154 124
Zhambyl	126 108

Since the alignment mainly passes through the open terrain, the level of population, living in close vicinity to the road, is very low.

3.2.9 PHYSICAL AND CULTURAL RESOURCES

One of the issues that must be considered during the construction of the road is the preservation of physical cultural resources (PCR) such as certain structures, commemorative sites and other objects associated with historical events in the life of the community. This includes structures and sites of material and spiritual art, which are of historical, scientific, cultural value (antique buildings, burial mounds, archaeological sites), as well as unique natural conservation areas, national parks.

As per the conclusion of the archeological survey of the Section km 2335-2380 for reconstruction of “Astana-Karaganda-Balkhash-Kapshagai-Almaty” national road No. 14006153 dated 05.05.2014 carried out by “Kazarcheology” LLP, economic development of the territory which was allocated for the road construction in the specified section is allowed at observance of the conditions provided by Article 39 of the Law of the Republic of Kazakhstan “On Protection and Use of Historical and Cultural Heritage Objects”.

Requirements:

- When developing the territories before land acquisition, surveys shall be carried out to identify objects of historical and cultural heritage.
- In case of detection of the objects of historical, scientific, cultural and other value, individual and legal entities are obliged to suspend further works performance and to report about it to the authorized body.
- It is prohibited to carry out works which can pose threat to the existence of objects of historical and cultural heritage.

In the course of the archaeological survey, strategic prospecting shafts were placed at different sites of the territory, strategic cleaning was carried out, as well as archaeological materials were collected.

Based on the results of the survey in the allotted section, no sites of historic and cultural heritage have been found. Economic development of the territory allotted for the road is allowed in this section.

Labor Influx

The risks associated with labor influx for this section of the road are described in more detailed in the Environment and Social Impact Assessment (ESIA) applicable for Kurty-Burylbatai. The latter document also provides a description of mitigation measures in light of other mitigation framework for both social and environmental issues.

The construction activities require both skilled and unskilled labor. The experience from reconstruction road completed globally through Bank funds demonstrates that contractors may accompany a sizable number of outside labor force. The road sections completed under the previous Bank support show that the labor camps established by the contractors are managed well and no reported incidence of adverse social impacts or disputes with local communities.

One important observations in this regard is that most of the outside labor force brought for previous road works belong to the same cultural/religious groups as the local communities and, therefore social relations between outside labor force and local community was cordial and mutually beneficial. A specific GRM was established at local community and camp level to address issues related to labor camp management. In summary, as per the experience in previous road sections, the risks related to labor influx were minimal and managed carefully. This positive experience will be upheld throughout project implementation.

The actual size of labor force and the number required for project activities is difficult to estimate at this stage. Nevertheless, influx of labor will be kept minimal as the project will aim to employ local labor force as much as possible for construction works. Thus, specific provisions to be included in contract documents will be (i) limiting the use of foreign unskilled and semi-skilled workers or unskilled and semi-skilled workers from elsewhere in Kazakhstan unless there are no local unskilled and semi-skilled workers available; (ii) payment of legal wages to workers; (iii) no use of trafficked or child labor for construction and maintenance activities; (iv) inclusion of women in the local construction force, in accordance with the local gender balance, to the maximum extent possible; (v) no differential wages being paid between men and women for work of equal value; and (vi) use of locally sourced materials used in the rehabilitation to the maximum extent possible.

Furthermore, to minimize adverse impacts, efforts will be taken to establish labor camps in locations outside of major settlements to ensure no undue social disturbance to local communities.

4. ENVIRONMENTAL MANAGEMENT, MONITORING PLAN AND INSTITUTIONAL RESPONSIBILITY

Environmental Management Plan was prepared in accordance to the World Bank's Operational Policy, as well as based on the Section 4, Chapter 14, Article 128 of the Environment Code of the RK.

The main factors that adversely affect the environment are construction of camps, construction works for artificial structures, operation of specialized machinery, excavation of borrow pits during the road construction, as well as auxiliary production units (concrete mixing unit, asphalt concrete plant, crushing-and-sorting shop, etc.). Possible impacts are listed in Table 4. 1. and 4.2 with proposed mitigation measures and monitoring actions.

The main objective of the EMP is reduction of the environment pollution level, stabilizing indicators of environment quality and improvement of environment quality, as well as ensuring environmental security for sustainable development of the area applying the best international practices by the Contractors.

4.1 ENVIRONMENTAL MONITORING PLAN

Environmental monitoring is a very important aspect of environmental management during construction and operation of the project to safeguard the environment. During construction, monitoring of landslips, side slopes, as well as embankment in order to timely prevent from potential soil erosion. Reserves restoration, quarry activities, material stocking, placement of asphalt plants, community relations, as well as safety provisions have been described in the EMP.

In response to the environmental impacts identified during the survey, the Environmental Monitoring Plan has been developed, presented in Table 4.1 and Table 4.2. The contract documents will contain the list of all the required mitigation measures and the time frame for monitoring of these measures application. The monitoring will comprise surveillance to check whether the Contractor is meeting the provisions of the Contract during construction.

The Construction Supervision Consultant (CSC) jointly with MID will have to carry out the following during the project implementation, i.e. the during construction:

- The Contractor will prepare site-specific EMPs. The CSC will be using this monitoring plan as the basis for supervision of the Contractor's compliance with these EMPs.
- Regular supervision of the environmental monitoring and submission of quarterly reports: the main parameters to be monitored are outlined in Tables 4.1 and 4.2. The CSC will provide an Environmental Expert within the CSC team.
- Regular supervision of the project roads and submission of quarterly reports based on the monitoring data and laboratory analysis reports. The Contractor and the Supervision Engineer will be responsible for environmental monitoring data collection.

A lump sum budget is allocated to cover monitoring costs during construction of the project. PIU will hire a consultant, who will carry out environmental monitoring and ensure that the road is monitored regularly during construction works.

The following measures will be taken to provide compliance with environmental monitoring program during the project implementation:

1. Bidding and contract documents will clearly set out the contractor's obligations to undertake the mitigation measures as set out in EMP and in Chapter 7 of EIA report and to be envisaged as appendix to specifications;
2. The recommended environmental mitigation measures cost shall be included as an item in the Bills of Quantities. This will ensure that there is specific budget for environmental impacts mitigation measures to be implemented as required. During the procurement, Contractors shall be recommended that they should include these costs in their rates and submit the costs for the mitigation measures as an Item in the Bill of Quantities.
3. The Construction Supervision Consultant (CSC) will carry out construction supervision, occupational health and safety compliance supervision, environmental protection requirements compliance as agreed with the Project Management Consultant (PMC).

5. INSTITUTIONAL REQUIREMENTS

The following section describes measures for environmental management, which will be taken within the general project implementation. Roles and obligations of different organizations in application of these measures have been identified and measures for institutional consolidation have been defined, which are required to have these organizations fulfilling their assigned roles and obligations.

Environmental monitoring program will be prepared, as well as expenses related to its implementation will be incorporated to the construction Contracts and construction supervision project.

5.1 ORGANIZATIONS INVOLVED IN THE PROJECT

Institutions involved in environmental management of the project are the following agencies:

- Government of the Republic of Kazakhstan
- Ministry for Investment and Development (MID)
- Committee for Roads
- International Bank for Reconstruction and Development (IBRD)
- Committee for Environment Protection of the Ministry of Energy of the RK
- KazAvtoZhol NC JSC – national operator in national roads management
- Kazakhavtodor RSE – company for roads operation and maintenance
- Project Management Consultant (PMC)
- Construction Supervision Consultant (CSC)
- Contractor
- Regional and local authorities
- Affected communities

5.2 INSTITUTIONAL RESPONSIBILITIES

MID is responsible for preparation, implementation and financing of the environmental management and monitoring of objectives, the way they are related to the project. MID will be fulfilling its obligations through the PMC, which will be responsible for overall project implementation and will undertake daily measures for projects management, as well as monitoring.

Experts shall be appointed to the PMC for performance of all the assignments related to the environmental assessment. Environmental specialists of the PMC will have support from the CSC (Supervision Consultant). The CSC team, in its turn, will be required to provide an environmental monitoring experts and social monitoring expert.

In implementation of assignments for environmental management and monitoring, specific technical assistance will be provided by the PMC:

- by environmental experts, who are a part of the Supervision Consultant team for all the contractors involved in the project. Experts will be assisting in all the environmental planning and implementation aspects, internal monitoring and assessment (MA), and training of the CSC employees, as well as employees of contractors and relevant public institutions in relation to environmental assessment issues and WB's Environmental Policy;
- independent agency for monitoring (IAM) can be employed to (I) carry out time to time monitoring and assessment, (II) inspect a third party's performance of activities for IEE and EMP, and (III) to ensure that all the identified adverse impacts have been mitigated at present.

Residents of settlements and administration of villages and organizations will be assisting in arrangement of meetings and providing information about the affected communities if identified and about environment impacts. Process account will be an integral part of the Report for Internal Monitoring prepared by CSC and PMC.

Responsibility for fulfillment of monitoring requirements for this EMP is shown in Table 7.1 and Table 7.2 in accordance with the Environment Management Plan, monitoring and Institutional Responsibility of the Section 4.

Implementation of measures for impacts mitigation at the construction stage will be a contractor's responsibility in accordance with contract specifications and requirements of the Loan. Environmental experts of the CSC will be coordinating monitoring of mitigation measures implementation at the construction stage. The local environmental expert will be coordinating together with international environmental expert to make difficult decisions, which arise in this field, as well as providing constantly updated information for submission of reports to PMC and WB.

After completion of the project, MID will be responsible for roads operation and maintenance. The PMC, in cooperation with the regional/oblast akimats, will be conducting regular and random monitoring according to the schedule of the monitoring plan.

It is recommended to conduct time to time environmental monitoring of fauna after the completion of the road construction. It is likely that taking over of works after completion shall include full examination of the Contractor's compliance with the specified requirements for environmental protection. This should include inspection of proper cleaning and reclamation of all the temporary work sites (borrow pits, construction camps, etc.), as well as proper landscaping, and draining of all the soil reserves and landfills.

In the long term, it is important that the authorized road maintenance authorities monitor the effectiveness of erosion protection measures. Some forms of reporting should be implemented to have information about defects in design or construction methods fed back to the center and road maintenance depots.

It is also recommended that the CSC conducts time to time assessment of the livestock and migratory herds and animals mortality rate, especially on the new alignments if there is a need for construction as a result of road traffic impact. Adjusting measures should be undertaken if the frequency of such cases increases significantly. Different stages of the EIA implementation on certain sections (lots) of the road:

- (a) Road design planning with special account:
 - sections with large excavations and embankments, and borrow pits of construction materials,
 - ground reserves for embankments and waste dumping areas,
 - warehouses for toxic waste and debris,
 - locations for temporary concrete plants and other materials processing plants,
 - construction camps of contractors,
 - sources of water for construction purposes,
 - temporary access roads and other temporary structures,
- (b) Obtaining written consent from local administrative authorities related to landfill spoils, waste burial, contaminated soils and toxic substances.
- (c) Obtaining written permit (from local authorities, representatives of the environmental protection authorities and sanitary inspector) for permanent and temporary acquisition of land for the construction of roads, borrow pits, landfills and contractors' construction camps, concrete plant and other plants for processing of materials.
- (d) Harmonization of any changes with local institutions responsible for irrigation networks if they are affected by the project.
- (e) Harmonization of planning requirements for bridges and other structures in rivers or other water bodies with agencies responsible for fishery and local representatives of environmental protection authorities.
- (f) Monitoring (by measuring) of air emissions and discharges to land during construction.

- (g) Monitoring of vibration impacts associated with construction, the Contractor is responsible for any preventable damage caused by itself. Contractors which do not comply with legal requirements shall be liable for these violations, and shall pay compensations for any damage caused.

GRIEVANCE REDRESS MECHANISMS INCLUDING GRIEVANCE DURING CONSTRUCTION

Guideline on Grievance Redress Mechanism (GRM Guideline) is designed and approved in 2014 by Committee for Roads MoID RK for all road sector projects. GRM Guideline is intended to be used as a guidance document for stakeholders involved in design, preparation and implementation of road projects, and complements grievance redress requirements incorporated in the loan agreements, as well as environmental and social safeguard documents (in case of projects funded by IFIs).

The overall objective of the GRM Guideline is to establish an effective communication channel among the stakeholders for providing a timely and efficient two-way feedback mechanism to address any complaints made about the project, including those from members of the communities, local businesses and other stakeholders, as well as raising public awareness on the projects and on the availability of a GRM mechanism. The Grievance redress procedure suggests resolution of grievances in the spirit of mediation between the parties, and should comply with the spirit of IFI standards and practices.

The GRM will be available for those living or working in the areas impacted by the project activities. Any person impacted by or concerned about the project activities will have the right to participate in the GRM, will have easy access to it, and will be encouraged to use it. The proposed GRM does not replace the public mechanisms of complaint and conflict resolution envisaged by the legal system of the RK, but attempts to minimize use of it to the extent possible.

GRIEVANCE REGISTRATION

Complainants or stakeholders may visit Akimats, call or send a letter or e-mail or fax to grievance focal point, at CSC, GRC Coordinator and CfRMoID RK to register their grievances related to road sector projects. Receipt of grievances received through a letter or e-mail or fax shall also be acknowledged through a letter / e-mail / fax within 3 working days upon receipt by GRC coordinator at regional level. Receipt of grievances lodged in person or via phone will be acknowledged immediately.

Complainants or stakeholders may visit, call or send a letter or e-mail or fax to community Akimat, grievance focal point at CCs and CSCs, GRC Coordinator at CoRMoID RK to register their grievances related to road sector projects. Receipt of grievances received through a letter or e-mail or fax shall also be acknowledged through a letter / e-mail / fax within 3 working days upon receipt by GRC coordinator at regional level. Receipt of grievances lodged in person or via phone will be acknowledged immediately.

Each project level party participating in the GRC at regional level shall maintain a record-book to register the complaints, and regularly share the grievance details with GRC coordinator at regional level, in order to keep the track of grievances and the status of their resolution. The GRC coordinator at the regional level shall coordinate with each member of the GRC on a weekly basis, collect relevant documents, maintain a consolidated registry of complaints received, follow-up on the status of resolution of each complaint received, maintain an up-to-date grievance database and provide relevant reporting.

Whichever method is used for receiving the grievance (e.g. e-mail, mail, fax, call, etc.), its registration will be made by the GRC coordinator at the regional level, who will acknowledge receipt and follow up with the grievance investigation and consideration by the GRC at regional level. All the grievances will be recorded in a standard format, which will include but not limited to the following details:

- Contact information of the affected party;

- Date, time, and place where the complaint was received;
- Name of the person who received the grievance;
- Details of the grievance.

The project will pursue a participatory approach in all stages of planning and implementation. This is expected to ensure that the affected people have nothing or little to complain about. However, some people may still remain dissatisfied for some reason or the other. Many grievances arise due to inadequate understanding project policies and procedures, and can be promptly resolved by properly explaining the situation to the complainant.

In case the complainant refuses to provide contact details or no contact information is available in the grievance received by e-mail / mail / fax, the GRC at the regional level will consider the anonymous complaint. In such cases, the printed response will be posted at the information board of the KazAutoZhol's respective regional branch, as well as at the information board of the relevant Akimat, so as the complaining party can approach and get familiarized with the feedback.

The GRC coordinator at regional level will collect the data on grievances and centralize the grievance registry to assure that every affected person, group or community has an individual registry number and that follow-up and corrective actions are implemented as per resolution provided, or if the issue was not resolved at regional level, it is passed for consideration at the central level. The grievance database will be maintained and updated on a bi-monthly basis by the GRC coordinator at regional level for each project. The database will be designed to make it simple and easy to input data, provide information on grievance and status of its resolution, timeline for resolution and level at which the issue was considered and resolved, track individual grievances, etc. The grievance database will specify details of grievance resolution and include information on satisfaction of complaining party by the resolution provided (excluding the cases of grievance lodged anonymously). Where it will not be possible to resolve grievances to the satisfaction of both parties, appropriate information will be reflected in the database. The GRC coordinator at regional level for each project will share the grievance database with the safeguard specialist of KazAutoZhol central office / GRC coordinator at central level, who will maintain and update the centralized grievance database for all road sector projects.

GRIEVANCE PROCESSING

Depending on the nature of grievance, this step may include verification, investigation, negotiation, mediation or arbitration, coordination with appropriate agencies and decision-making. Verification includes gathering of documents, proofs and facts, as well as clarifying background information in order to have a clear picture of the circumstances surrounding the grievance case. Verification will be undertaken by members of the GRC at the regional level, and overall coordination of activities will be ensured by the GRC coordinator on regional level. Results of verification or fact-finding activities will be presented at the meeting of the GRC at regional level, where the issue will be considered and resolution will be sought.

The GRC at regional level will discuss the grievance case within ten working days and recommend its settlement to parties. Meetings of the GRC at the regional level will be held on a bi-monthly basis; however, special ad hoc meetings can be arranged in between of regular meetings as needed. The GRC coordinator at regional level will ensure that actions and decisions are properly documented in order to demonstrate that the GRC at regional level is providing an appropriate attention to the grievance and is actively seeking ways to obtain resolution that could satisfy the parties.

If grievance cannot be resolved by the GRC at the regional level and is passed for consideration by the GRC at the central level, appropriate documents collected during investigation and fact-finding shall be shared with the GRC coordinator at the central level. The GRC coordinator at the central level will circulate such documents among the members of GRC at central level, to ensure that they are aware of all relevant details prior to GRC meeting.

Consideration of grievance case by GRC at central level may require further verification of the issue, including gathering of additional documents, obtaining input from various state stakeholders and project parties in order to have a clear picture of the circumstances surrounding the grievance case. Additional verification will be undertaken by members of GRC at the central level (as needed), and overall coordination of activities will be ensured by the GRC coordinator at central level. Results of verification will be presented at the meeting of GRC at the central level, where the issue will be considered and resolution will be sought.

The GRC at the central level will discuss the grievance case within twenty working days and recommend its settlement to parties. Regular meetings of GRC at central level will be held on a monthly basis; however, special ad hoc meetings can be arranged in between of regular meetings as needed.

If following its consideration by the GRC at central level, the grievance cannot be resolved to the satisfaction of the parties, the recommendation will be made to seek resolution through the courts. Irrespective of the outcome of grievance consideration, documentation regarding the case by the GRCs at regional and central levels will be collected and maintained by GRC coordinator at central level (with input from GRC coordinator at regional level). The GRC coordinator at the central level will keep a separate track of cases, which were not resolved through GRM and were referred to the RK legal system.

DISCLOSURE OF GRIEVANCE REDRESS PROCEDURE

The grievance redress procedure information for the project will be disseminated through information leaflets and brochures, and presented during the project related meetings and public consultations. During these gatherings, it should be emphasized that the informal GRM is aimed at quick and amicable resolution of complaints and does not substitute the legal process established under national legislation.

At the beginning of each project (commencement of construction at each section of the road) community consultation shall be carried out by CCs and CSCs under the coordination and supervision of the GRC coordinator at regional level to ensure people's awareness of the availability of the GRM, steps of grievance resolution as well as contacts and locations of focal points to be approached in case of grievance. CCs, CSC, PMCs, CfR, MoID RK regional branches and Akimats, as well as NGOs and professional mediators are considered as the key actors of the GRM and play a crucial role in disseminating the information on GRM and facilitating quick and amicable resolution of complaints. The GRC coordinator at the regional level shall coordinate information dissemination activities on GRM, and ensure that the posters providing details on GRM and contacts of grievance focal points at CCs and CSCs, GRC coordinator at regional level are posted in publicly accessible and visible places at every construction site and in every affected community. In addition, the information on GRM (leaflets, brochures), including contact details grievance focal points at CCs and CSCs, GRC coordinator at regional level, should be available at the offices of CCS, CSCs, PMCs, Akimats, CoR.

In the areas populated by minority groups meetings shall be held and information leaflets shall be provided in the linguistically appropriate manner, if the language used by the minority group is different from official language of RK.

6. PUBLIC CONSULTATIONS AND DISCLOSURE

Consultation with persons, whose interests are likely to be affected, included the following:

At the alignment design stage: The designers have published an advertisement in «Moiynkum ta-ny» local newspaper during design and survey works about the public hearings to be held. However, these public hearings have been attended only by 20 people, including representatives of the CfR MID RoK and structural departments of akimat of Zhambyl Oblast. It has been held on August 22, 2014. During the consultations all technical parameters of the road, schedules of the proposed works, the expected benefits, expected impacts, including the expected mitigation measures, the number of underpasses, design solutions for abutment design of bypasses, junctions and underpasses for the needs of owners of land and farms, identification of placement of production base and a testing ground for debris removal, consideration of the possibility of the use of water for process needs from the nearest water bodies, information on land plots allocated for farms within the area of construction of the road have been submitted.

Public hearings were held in villages along the route of section in Almaty and Zhambyl oblasts, as showed below:

- Akshi – 05.08.2014
- Aidarly – 30.03.2015
- Kurty – 30.03.2015
- Gulshat v. – 17.06.2015

Zhambyl oblast

- Aksuek – 25.02.2015
- Burylbaital – 25.02.2015

On public hearings held on February 25, 2015 in Aksuyek village. The speaker, the Deputy Director General of «Kazdorproject» LLP, Khil A.V. explained that design works for the main road have been completed. Basic technical parameters of the designed alignment have been presented: alignment plan on the rectifiable section, structure of the approved road pavement option, road cross-section, sites for borrow pits, location of rest areas and bus shelters, location of cattle underpasses and other design solutions. It has been also attended by akim of this rural district, as well as residents of the village.

The following group of people has been invited on public hearings:

- All the local population, whose interests have been likely affected during the road reconstruction;
- NGO involved in environmental and social issues;
- Representatives of authorities in the field of environmental design and social issues

Project Management Consultant has an important role in the public information process by preparing and distributing brochures that describe the process and clarify rights and responsibilities, compensation rates, payment schedules and grievance redress options.

The third public hearings on the issues of final road design, resettlement plan, ESIA involving design organizations and representatives of Zhambylzhollaboratory have been held on May 26, 2016 in the village of Mynaral in Moiynkum District of Zhambyl Oblast.

In addition, all the attendees of the public hearings were provided with information brochure that discusses relevant regulations, entitlements, compensation rates, payment, and grievance redress mechanisms. Also these brochures and other project related information is available in all regional and rayon Akimats, which can be visited by every concerned person, where information can be obtained.

The RAP has been translated into Russian and Kazakh languages and disclosed on the project website, the website of the Committee for Roads, and the respective rayon Akimats. The RAP in English will be disclosed on the WB external website.

The consultation process during preparation stage of the project was mainly focused on key informants interviews, focus group discussion and public meetings. The consultation program involved following entities:

- a. Head of households likely to be affected
- b. Household members
- c. Community
- d. Respective Akimat
- e. Major project stakeholders such as women, highway user groups, medical workers
- f. Distribution of Public Information Booklet

This Public Information Booklet (PIB) will be included the following useful information concerning the Resettlement Plan:

- a. Brief description of the project;
- b. Types of impacts expected;
- c. Basic Compensation policy and payments;
- d. Outline of livelihood restoration measures;
- e. When and where APs will receive their entitlements;
- f. Consultation and participation by APs and community;
- g. Implementation schedule;
- h. Grievances Redress Mechanisms;
- i. Roles and responsibilities of ‘Head of Local Self-Government, Deputy Akim of Rayon, RK, and Grievance Coordinators, in Grievances Redresses;
- j. Contact details, including CfR MID RoK, contact person, telephone number and address.

Table 5

Questions Raised at Public Hearings/Consultation

№	Questions	Answers
1	What is the size of the cattle underpass?	In accordance with the standards, the size of the cattle underpass is 4X2.5 meters
2	How many traffic lanes are there on the new road?	4 traffic lanes with median strip are provided for the new road
3	How many meters are provided for permanent land acquisition for the road?	Permanent land acquisition for the road provides 35 meters each on both sides from the road axis
4	Road construction term	Based on the design, the road construction term is 34 months
5	Are there any opportunities for the local population to get jobs?	Employment of local population is provided, however, candidates shall comply with the qualification requirements.
6	What is the pavement of the	The design provides asphalt concrete road pave-

	future road?	ment?
7	When is it planned to commence implementation of this project?	The road construction is planned to be commenced after receiving affirmative opinion from the State Expertise, allocation of funds for the implementation and identification of the contracting organization

Local communities also made their suggestions at the public hearings in regard to providing additional cattle underpasses, additional rest areas near the roadside services locations if possible.

Based on their suggestions and in order to minimize adverse impact, the following was recommended to the designer at the design stage:

- a) the Designer should increase the number of cattle droves and size of the cattle droves in rural areas, where animal husbandry is an important economic activity, as well as to obtain approval for this project from the local administration;
- b) the Designer should envisage pedestrian passes safety measures (overpasses or underpasses) in the densely populated villages, as well as to obtain approval for this project from the local executive authorities.

In general, the local population was satisfied with answers provided by the representatives of “Kazdorproject” LLP, “Zhambylzhollaboratory” SI and the Project as a whole.

It is obvious that the entire population agrees upon the basic provisions of the road reconstruction project in general.

Repeated public hearings were further held from 17.04.2017 to 21.04.2017. At these hearings project institutes, representatives of CfR MID RK, «KazavtoZhol» NC JSC and consultants have described already completed road projects with the receipt of positive conclusions of the State Expertise and all issues related to environmental protection, resettlement, seizure and cultural and archaeological heritage to all participants. All attendees had wishes that the road reconstruction project started as soon as possible, so they expect only positive effects from it. More detailed information is available in the minutes of public hearings.

7. ENVIRONMENTAL MANAGEMENT PLAN: MONITORING AND INSTITUTIONAL RESPONSIBILITY: KURTY –TOGYZ (BURLBAITAL) ROAD SECTION (km 2295-2380)

Table 7.1: Construction stage - PROJECT IMPACTS; MITIGATION MEASURES, MONITORING AND RESPONSIBILITY

CATEGORY	POTENTIAL IMPACT	SIGNIFICANCE	LOCAL IMPACTS	MITIGATION	RESPONSIBILITY	MONITORING	RESPONSIBILITY	LONG TERM IMPACT
1. Air quality	Air pollution: emissions from construction machinery and equipment, emissions from cement-concrete, asphalt-concrete plants, crushers, etc. Dust: from construction activities borrow pits/quarries and crushers transportation of materials	Potentially significant, locally without mitigation, and will worsen during dry seasons	Generally, in the area of construction, the existing roads or bypass roads; Potential impact on the adjacent areas near Kanshengel, Mynbai, Kurty, etc. villages; Local influences in Sections 1 and 2 are not expected	All vehicles and equipment used in construction must be up-to-date, regularly undergo maintenance and used according to recommendations of manufacturers. All access and bypass roads shall be watered. All plants/dust-generating equipment should be operationally faultless and located at a distance away from all sensitive zones.	The contractor bears responsibility for implementation of mitigation measures. Construction Supervision Consultant monitors the compliance with mitigation plan.	Regular (monthly) monitoring by licensed laboratories at designated sampling points and on-site compliance checks by Construction Supervision Consultant (CSC), Engineer and local environmental protection authorities. The sampling points will be defined by the Project monitoring programs, which will be developed by indi-	Contractors Construction Supervision Engineer	Long term impact is limited

						<p>vidual contractors and are required by the law. Parameters to be monitored follow the EHS Guidelines including: nitrogen oxides, inorganic dust, sulfur oxide, carbon, PM10, PM2.5 and carbon monoxide. Meteorological parameters during sampling include air temperature, emission rate, atmospheric pressure and air humidity.</p>		
2. Noise and vibration	Noise from construction machinery and equipment Noise from cement-	Potentially significant	The areas of construction; access and bypass roads. Potential impacts on residen-	All vehicles and equipment used must be up-to-date, undergo regular maintenance and used according to recom-	The contractor bears responsibility for implementation of mitigation measures.	Regular (monthly) monitoring by licensed laboratories at designated sam-	Contractor (through licensed laboratories) Construction Supervision	There will be no long term impact

	concrete and asphalt concrete plants, crushers, etc. Transport noise on the access roads		tial areas. Potential impacts on the areas near Kanshengel settlement; Local impacts on Sections 1 and 2 are not predicted.	mendations of manufacturers. All plants have to work according to recommendations of the manufacturer and located at distance away from residential areas. Any types of works during night time near residential areas of the settlements of Kanshengel and Airdarly, Mynbai and Kurty should be prohibited. Speed shall be restricted to 60 km/h for all construction machinery.	Construction Supervision Consultant monitors the compliance with mitigation plan.	pling points and on-site compliance checks by Supervision Engineer. Values should be compared versus the measurements done as baseline level (before construction starts)	Engineer	
3. Water, drainage system and floods	Pollution by a runoff from the construction sites in the areas of bridge construction is possible Infiltration of the polluted water in the water-bearing horizons	Influence is moderate to low. Places of water intakes from wells (drinking water and process water) and Kurty river (process water) will be agreed with Commit-	Potential impacts in the area of Kurty river (bridge construction). Potentially – all alignment Areas of location of the construction camps	Committee for Roads, Committee for Water Resources and Akimats of districts in consultation with contractors. The contractor shall ensure water intake only from designated sources. Good housekeeping at construction sites.	Committee for Roads, Committee for Water Resources in consultation with contractors. The contractor bears responsibility for implementation of mitigation measures.	Regular (monthly) monitoring by licensed laboratories at designated sampling points and on-site compliance checks by Construction Supervision	Contractors in consultation with Construction Supervision Consultant and environmental protection authorities	Long-term impacts are possible water intakes are made not from

	<p>Pollution of underground waters at pits/quarries (accidental spills) Pollution of surface and underground water sewage from camps.</p>	<p>tee for Water Resources. Pollution of underground waters is unlikely as deep soil excavation isn't planned. Pollution from camps can be moderate to significant</p>		<p>Areas of potential pollution of rivers will be designed to prevent accidental spills and runoff and protected by sediment settlement ditches. Sewage at construction camps will be collected in septic tanks and transported/discharged at wastewater treatment plants. Borrow pits need to be created at minimum 500 m distance from any river</p>	<p>Supervision Engineer monitors the compliance with mitigation plan.</p>	<p>Consultant (CSC), Engineer and Regional office of the Committee on Water Resources implement control on site. Controlled parameters include: pH, density, resistance, solid residues, chlorides, nitrogen nitrogen, nitrate nitrogen, fluorine, insoluble matter, etc (e.g., all applicable feasible water parameters referenced in the EHS Guidelines)</p>		<p>the sustainable water sources</p>
4. Erosion and pollution of soils and sub-soil lay-	<p>Soil erosion (wind and water) is possible due to removal and destruction of topsoil and</p>	<p>Potential impacts are low to medium (earthworks on the alignment and operation</p>	<p>Local impacts are expected only in the areas of borrow pits and earthworks on subgrade along</p>	<p>All recommended methods on reduction and elimination erosion were included in the program of construction</p>	<p>The contractor bears responsibility for implementation of mitigation measures.</p>	<p>Contractors Construction Supervision Engineer</p>	<p>Contractors Construction Supervision Engineer Committee for Roads</p>	<p>Erosion is possible if there is no proper</p>

ers	subsoil layers. Pollution of the soil and subsoil layers as a result of construction and accidental spills.	of borrow pits).	the alignment.	Construction methods on reduction or elimination of pollution of soils and subsoil layers. Storage of topsoil and topsoil management	Construction Supervision Consultant monitors the compliance mitigation plan.			manage age-ment and prevention during construction.
5. Flora and fauna and the sensitive and protected territories	Impacts on vegetation along the alignment. Disturbance of fauna in the area of influence of the construction works	Potential impacts are Low to Medium Impacts on conservation areas will be minimal. Temporary disturbance of birds and animals in close vicinity to the construction sites, concrete mixing plants, crushers or borrow pits is possible.	Moderate loss of vegetation is possible. Illegal hunting is possible	Culverts, animal underpasses and bridges will serve as crossing points for wild animals. Illegal hunting near the project area will be prohibited. The contractor should prevent his personnel from hunting within the conservation area.	The contractor bears responsibility for implementation of mitigation measures. Construction Supervision Consultant monitors the compliance with design and mitigation plan.	Regular monitoring of proper vegetation and rational topsoil management by the Contractor. Construction Supervision Consultant will monitor the compliance with design and mitigation plan.	Contractors Construction Supervision Engineer Committee of Forestry and Wildlife	No significant long-term impact on flora and fauna is expected
6. Social / Economic / Farmers	Land loss/ land plots acquisition. Possibility of employment	Potential impacts are low to moderate Employment opportunities	There are cases of land (open space land plots) acquisition along the align-	Land acquisition will be carried out according to the legislation of Kazakhstan and Resettlement	Contractors Akimats	Committee for Roads, Akimats/local authorities and contractors	Regular monitoring of possible impacts on farmers by Construction	Long-term consequences are

	during construction Inconvenience in terms of crossing and activities of farmers Loss of trade along the road	emerge for local population Potential impacts on farmers (animal husbandry)	ment	Action Plan (RAP) Encouragement of hiring of local labor Consideration with local population on additional cattle crossings (August 2014) Compensation for temporary use of land plots in the form of loss of income should be paid or other appropriate mechanisms put in place according to the legislation of Kazakhstan and RAP			Supervision Consultants Committee for Roads will monitor if the affected persons were compensated.	possible if cattle crossings are not provided
7. Historical and archeological monuments	Some archaeological monuments on Section 1 are within right of Way. Danger of loss and destruction of burial mounds outside the RoW on Section 1 There are no historic or cul-	Potential impacts on archaeological monuments Nos. 6 and 7	Potential impacts on archaeological monuments Nos. 6 and 7	Archaeological monuments Nos. 6 and 7 should be fenced to secure protection. Memorial plates will be relocated in coordination with local authorities. Other historic places outside Right of Way, but within 2 km from the road have to be protected from plunder and destruc-	The contractor will be responsible for fencing of the archaeological monuments # 6 and #7 and relocation of memorial plates. In case of chance finds, the contractor should immediately inform	Construction Supervision Engineer, local authorities and authorized representative of the Ministry of Culture will check compliance with this plan and chance finds procedure.	Construction Supervision Consultants and authorized representative of the Ministry of Culture	Provided that all laws will be observed and the specified archaeological sites #

	tural sites on Section 2.			tion. Chance finds procedure to be followed by the contractors. According to the state procedures, works will be immediately suspended, for studying, record and excavation. Ensure safety of cultural resources by observing conservation zones of 50 m from the borders of the respective objects	the Ministry of Culture on any found artifacts or remnants, and stop all construction works and notify the authorities on cultural heritage. Protection of other monuments on Section 1 is responsibility of state institutions on protection of cultural and archaeological heritage (i.e. Ministry of Culture)			6 and 7 will be fenced and memorial plates relocated, long-term influences are not expected.
8. Traffic safety	The traffic volume on the main road can affect traffic safety.	Potential impact is low to medium	Sections of the alignment close to settlements and places of access/bypass roads joining the main road	Speed limit enforcement. Proper installation of road signs and application of marking Informing local population. Responsible actions of the contractor. Arrangement of additional crosswalks, if required. Compliance with	Committee for Traffic Police and the contractors	Regular monitoring and reporting of any accidents and complaints	Construction Supervision Consultants Committee for Traffic Police	There are no long-term impacts

				<p>occupational safety rules during construction to minimize potential impact on local communities: Construction machinery shall adhere to the agreed access roads and comply with speed restrictions Installation of information plates in relation to threats to public safety and information about contact entities in case of emergency situations Prevention of impacts of dangerous materials and waste that are located at the site on the population Accounting of livestock which temporarily cross the site territory and road and interfere with traffic These measures shall</p>				
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				be a part of the Construction Plans for Environmental Management, which shall include traffic management plans				
9. Waste management	Generation of the construction debris and household wastes which are subject to landfill disposal.	Potential impact is low to medium	Potential impacts near construction camps	Construction debris will be used (if technically possible) for construction of sub-grade. Household waste should be regularly disposed at designated landfills Hazardous waste should be properly managed and discarded by licensed companies at specific landfills assigned by regions/municipalities	Contractor together with local authorities	Construction Supervision Consultant should carry out regular monthly monitoring of sites and activities on waste collection and disposal	Construction Supervision Consultant and local authorities	Provided that all waste will be taken out to designated landfills, long-term impacts are not expected
10. Borrow pits/quarries and access roads	Quarries/Borrow pits: Local violations in environment, especially dust and noise from equipment and vehicles.	Potential impacts are possible. The existing pits have been already defined, but additional borrow pits will be required. Location of	Significant local impacts near pits and access roads are possible.	All borrow pits and access roads shall be coordinated prior to the commencement of works Only approved pits can be used, together with the plan of works production on closing and reclama-	Contractors Local authorities	Regular monthly and special monitoring of any impacts, cases and complaints Where applicable, the borrow pits used to source con-	Construction Supervision Engineer and local authorities Contractor	Provided that impacts are mitigated properly, long-term

	Inconveniences for agricultural activities Access roads: Inconveniences for agricultural activities	access roads shall be coordinated with local authorities within 2 weeks after the beginning of works.		tion		struction materials should undergo a closure process including backfilling and revegetation activities following construction		influences are not expected.
11. Occupational Health and Safety	Air, noise pollution, operating environment risks	Medium	As a rule, the existing and bypass roads at the main construction site; Potential impacts on the employees of the contractor and nearby villages	Compliance with health and safety requirements in accordance with the laws of the RK and the WBG. Develop an integrated program of occupational health and safety measures, which will be in line with the national laws, monitoring and management systems, covering any works under the Project. The system shall include the following: Analysis and control of specific risks Requirements for	Contractor	Regular (daily) monitoring of personal safety among workers	Contractors Construction Supervision Consultant (CSC)/Engineer	No long-term impacts

				<p>personal protection equipment and compulsion mechanisms</p> <p>Assignment and introduction of areas for smoking</p> <p>Training of the entire personnel in safety using their language</p> <p>Review of contactors' plans for occupational health and safety, orientated on the standards same as the plans of the design company</p> <p>Control over development/implementation of occupational safety and safety measures of the contractor, including compulsory reporting to CSC.</p> <p>Account, including common operating hours, lost operating hours due to accidents, description of time</p>				
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				<p>loss cases, admission to hospitals, fatal cases</p> <p>Instructions for exchange of information for risks, prevention of accidents, etc.</p> <p>Requirements for labor protection shall be followed by all parties, involved in the Project construction and operation.</p> <p>Worker Safety Action Plans developed to minimize accidents and incidents resulting from road works</p> <p>Emergency Preparedness and Response Plans developed</p>				
12. Contractor's construction camps	Increase in health problems among the community and workers, particularly STD such as HIV/AIDS and STD	Medium	As a rule, existing and bypass roads on the main construction section; Potential impacts on the nearby villages	Issuance of the Code of Conduct to workers, training and creation of information educational campaigns in relation to dissemination and transmission of STD and HIV/AIDS for	Contractors	Regular (daily) monitoring of personal safety among workers	Contractors Construction Supervision Consultant (CSC)/ Engineer and local authorities Experts for HIV/AIDS	No long-term impacts

				<p>construction workers and local communities living near the construction camps. Ensuring free distribution and provision of contraceptives to construction workers by the Contractor to avoid dissemination of STD and HIV/AIDS</p> <p>Place informative posters and brochures about HIV/AIDS using local languages in crowded places, at coach stations, schools and roadsides to minimize dissemination of HIV/AIDS.</p> <p>Sanitary and necessary requirements for training of construction workers in accordance with the laws of Kazakhstan, control and assessment of HIV/AIDS program: proper storage and handling of</p>			programs	
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				<p>dangerous substances and condition of wearing protective clothing for workers.</p> <p>Construction contract shall include the provision about the Contractor's obligation to provide a first aid station in the construction camp, and that qualified paramedical personnel shall be permanently full-time employed. Simple first aid materials for different minor injuries shall be available at any time for all construction sites; etc.</p>				
13. Closure process for borrow pits	Impact on soil, land, and natural resources	Medium impact	At the borrow pits locations and surroundings	Where applicable, the borrow pits used to source construction materials should undergo a closure process including backfilling and revegetation activities following construction	Contractor or Owner of the borrower pit	Monitoring of the closure process in line with the revegetation/reclamation plan	Supervisor Engineer and Committee for Roads shall ensure proper closure process for borrow pits have taken place following construction	

Table 7.2: IMPACTS DURING OPERATION; MITIGATION MEASURES, MONITORING AND RESPONSIBILITY

CATEGORY	POTENTIAL IMPACT	SIGNIFICANCE	LOCAL IMPACTS	MITIGATION	RESPONSIBILITY	MONITORING	RESPONSIBILITY
1. Air quality	Emissions from transport on the road Emissions from activities for repair and the maintenance of roads	Insignificant provided that vehicles are in good condition	Potential impact on adjacent sites near the settlement of Kanshengel; Other local impacts are not expected	All vehicles have to conform to standards of emissions All equipment for repair and the maintenance of the road conforms to standards of emissions Regular monitoring near sensitive areas to determine the need for additional mitigation measures	Committee for Roads and Committee of Environmental Regulation and Control of Almaty oblast	Monitoring of air quality in line with EHS Guideline (N2, NOx, CO2, CO, C, hydrocarbon) near residential areas and other areas if necessary. Frequency of monitoring will be determined based on monitoring data on traffic intensity.	Contractors during defects liability period
2. Noise	Emissions from transport on the road Emissions from activities for repair and the maintenance of roads	Insignificant provided that vehicles are in good condition	Potential impact on adjacent sites near the settlement of Kanshengel; Other local consequences are not expected	All vehicles have to conform to standards of noise Old and faulty vehicles should not be placed or located on the road To observe the	Committee for Roads and Committee for Environmental Regulation and Control of Almaty oblast	Monitoring of noise levels near residential areas and other areas if necessary. Frequency of monitoring will be determined based on monitoring data on traffic intensity.	Contractors during defects liability period

				<p>minimum and maximum restriction of speed All equipment for repair and the maintenance of the road conforms to standards of noise</p>			
<p>3. Water, drainage system and floods</p>	<p>Sustainability of water sources for operation Floods Pollution of surface and underground water because of activities on the road and rest/service areas</p>	<p>Potentially localized impacts Pollution will not be significant if the road is in effective management.</p>	<p>No specific local impacts are expected</p>	<p>To maintain drainage systems operational. Good management and the maintenance of the road will provide a normal flow of water courses.</p>	<p>Committee for Water Resources KazakhAvtoDor RSE Local executive authorities</p>	<p>Monitoring of ground water and drainage water quality in line with EHS Guidelines within the right of way of the alignment Frequency of monitoring will be determined based on monitoring data on traffic intensity.</p>	<p>Committee for Water Resources</p>
<p>4. Flora and fauna and conservation areas</p>	<p>Long-term impact on wild animals, particularly on the migration and relocation routes Disturbance of flora and fauna from use of</p>	<p>Impacts are low</p>	<p>There are no specific local impacts</p>	<p>Underpasses for cattle will serve as crossing points for wild animals (it is already included in the project) To study the need for additional crossings</p>	<p>“Okhotzoorpom” PO” RSCE and Forestry Department</p>	<p>Committee for Roads, Committee of Forestry and Wildlife and regional administration</p>	<p>“Okhotzoorpom” PO” RSCE and Department of Forestry and Wildlife KazakhAvtoDor RSE together with regional administration shall control the demands in additional points of crossing of the road</p>

	salts and chemicals for thawing of snow and ice The increase in illegal hunting is possible because of increased access			using culverts and under bridges for large mammals. To control and prohibit illegal hunting			for mammals, etc.
5. Social / Economic / Farmers	Increase in economic activity because of the improved road. Opportunities for permanent job in the maintenance of roads Opportunities for business and employment in road-side service areas Some disturbance of activities of farmers affected by land acquisition for construction of the	Significant economic and social benefits Some adverse impacts on activities of farmers due to the need to use underpasses for animals and/or agricultural machinery.	There are no specific local influences, except for agricultural and grazing lands. Settlements along the existing road	To hold informative events for local population, explaining them how to receive benefit from the improved road To consider additional cattle crossings and passes for agricultural machinery if necessary and as required (see mitigation measures)	Regional administration and KazakhAvtoDor RSE have to consider additional points of crossing (bridges) in cooperation with local population, if necessary. Akimats/local authorities	Monitoring of adverse impacts on local population and farmers Affected persons will be contacted to check if compensation has been paid to them or any other compensation forms took place.	Administrations of districts and Almaty oblast

	road						
6. Traffic safety and aesthetics	Increased number of road accidents Danger to pedestrians, there is not sufficient number of crosswalks	Low / medium level of impact	Ordinary passes, crossing the road alignment	Special measures in the project will reduce risk of accidents: median strip, good visibility, limited access, road signs, etc. There will be some settlements near the road, and very few pedestrians near the road and road crossing	Already included in the project	Monitoring and registration of all traffic accidents	KazakhAvtoDor RSE
7. Waste management	Wastes from the maintenance of roads and rest / service areas: problems of waste collection and disposal	Low impact	In rest and service areas	Committee for Roads shall ensure regular cleaning and collection of all liquid and solid waste and its disposal according to the approved rules and procedures. The company for road operation will be responsible for collect-	KazakhAvtoDor RSE and local administration	Regular monthly monitoring of sites and waste collection and disposal in line with approved waste management plan.	KazakhAvtoDor RSE

				ing waste from rest / service areas.			
8. Closure process for borrow pits	Impact on soil, land, and natural resources	Medium impact	At the borrow pits locations and surroundings	Where applicable, the borrow pits used to source construction materials should undergo a closure process including backfilling and revegetation activities following construction	Contractor or Owner of the borrower pit	Monitoring of the closure process in line with the revegetation/reclamation plan	Supervisor Engineer and Committee for Roads shall ensure proper closure process for borrow pits have taken place following construction