Initial Environmental Examination

Project No.: 50176-002

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KGZ: Issyk-Kul Wastewater Management Project, Construction of Additional Sewer Networks in Balykchy City - IMP/ICB/CW-21/008

Prepared by the State Institution Drinking Water Supply and Sewerage Development (SIWSSD) under the Water Resources Service under the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic for the Asian Development Bank (ADB).

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ACRONYMS

ACM	Asbestos Containing Materials
ADB	Asian Development Bank
SIWSSD	State Institution Drinking Water Supply and Sewerage Development under the Water Resources Service under the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic
DPMDCH	Department on Preservation, Monitoring and Development of Cultural Heritage
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMoP	Environmental Monitoring Program
GKR	Government of Kyrgyz Republic
SAACHCS	State Agency for Architecture, Construction, Housing and Communal Services
GRM	Grievance Redress Mechanism
IBA	Important Bird Area
IBR	Issyk-Kul Biosphere Reserve
GDIBR	General Directorate of Issyk-Kul Biosphere Reserve
IEE	Initial Environmental Examination
ISDP	Issyk-Kul Sustainable Development Project
ITA of MNRETS	Issyk-Kul Territorial Administration of MNRETS
KR	Kyrgyz Republic
MAC	Maximum Allowable Concentration
MASL	Meters above sea level
MNRETS	Ministry of Natural Resources, Ecology and Technical Supervision
MLSSM	Ministry of Labor, Social Security and Migration
MPC	Maximum permissible concentration
NGO	Non-Governmental Organization
NSC	National Statistics Committee
LSG	Local Self-Government
OOS Section	Russian acronym for EIA Section in the detailed designs
OVOS	Russian acronym for EIA Report
PCRs	Physical Cultural Resources
SEE	State Ecological Expertise
PIU	Project Implementation Unit (Balykchy)
PMO	Project Management Office
REA	Rapid Environmental Assessment
Cadastre	State organization under the Ministry of Agriculture
SSEMP	Site Specific Environmental Management Plan
IWMP	Issyk-Kul Wastewater Management Project
SPS 2009	ADB Safeguard Policy Statement 2009
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNDP	United Nations Development Programme
WSS	Water supply and sanitation
WWTP	Wastewater Treatment Plants

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EXECUTIVE SUMMARY

1. This Initial Environmental Examination (IEE) report assesses the potential environmental, health, safety, and social impacts of the proposed “Construction of Additional Sewer Network Project in Balykchy City, Kyrgyz Republic”. The project aims to expand the wastewater collection networks, complementing existing initiatives to improve wastewater systems in Balykchy city, thereby enhancing health, hygiene, and sanitation standards.

2. **Project Background and Purpose** The project, proposes an additional 11.034 km of sewer network (including three sewage pumping stations) in Balykchy City, funded by the Asian Development Bank (ADB) under the "Issyk-Kul Wastewater Management Project" (Loan Approval Number: 3742/0628). The construction approach will remain consistent with previous phases, without changes in technology. This IEE was prepared by the State Institution Drinking Water Supply and Sewerage Development under the Water Resources Service under the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic (DWSSD) in accordance with ADB's Safeguard Policy Statement (SPS 2009) and relevant Kyrgyz Republic laws and regulations. The project is categorized as "B" for environmental safeguards by ADB, meaning potential adverse environmental impacts are site-specific, largely reversible, and can be readily mitigated. The report aims to identify and assess potential impacts and recommend mitigation and enhancement measures.

3. **Legal and Regulatory Requirements**. The legal and regulatory framework[1] for the project includes national laws and international treaties relevant to environmental protection, sustainable development, and occupational health and safety. Key legislation includes the Law on Ecological Expertise, the Law on Sustainable Development of Environmental-Economic System of Issyk-Kul, and various environmental standards for air quality, water quality, and noise levels. The project also complies with ADB’s environmental assessment requirements, which classify the project as Category B, indicating that potential adverse environmental impacts are site-specific, few if any are irreversible, and mitigation measures can be readily designed. The subproject has received a positive conclusion from the State Environmental Expertise, issued by the Issyk-Kul Regional Department of the Ministry of Natural Resources, Ecology, and Technical Supervision (MPRETN) on 27 May 2025.

4. **Project Description**. This chapter outlines an extension project for the sewage network in Balykchy city, Kyrgyzstan, following the successful completion of an initial 10.66 km network funded by ADB. The current project involves adding 11.034 km of sewer network and constructing three new sewer pumping stations (SPS) on Sportivnaya Street, Pervomayskaya Street, and Kalinina Street. The anticipated environmental impacts are temporary and primarily related to construction.

[1] The Kyrgyz Republic's legal framework, including the Constitution and various laws such as the Law on Environmental Protection (1999), Law on Ecological Expertise (1999), and Law on Sustainable Development of Environmental-Economic System of Issyk-Kul (2004), establishes principles for natural resource and environmental management. The country is also a signatory to international environmental conventions relevant to the project, including the United Nations Framework Convention on Climate Change and the Convention on Biological Diversity

5. The project involves laying two-layer corrugated sewer pipes for gravity networks, with a minimum clearance of 200 mm from water supply pipelines. Pressure sewer networks from pumping stations will use PE 100 SDR 17 pipes. The average laying depth for the network will be up to 3 meters, with slopes determined by terrain, permissible wastewater flow rates, and the location of other utilities. Wastewater collection on Bekturova Street, Sultanova Street, and Kadyr-Ake Street will use gravity flow to underground SPS, each consisting of a sealed fiberglass tank. Pressure pipelines from these stations will be made of polyethylene (PE) pipes with varying diameters depending on the street. Distribution manholes with shut-off and control valves will be installed for emergency switching between pressure lines.

6. The main scope of work includes excavation, pipeline laying, jointing, pressure testing, backfilling, compaction, construction of manholes and the three SPS, and road restoration. Manholes will be constructed from precast reinforced concrete with diameters of 1 to 1.5 m and heights ranging from 1.4 to 4.5 m. The project is expected to be completed within 18 months from the contract signing date.

7. **Baseline Environment**. Balykchy is a strategically important town in northeastern Kyrgyzstan, located at the western tip of Lake Issyk-Kul. It functions as a vital transportation hub, connecting major highways and railways across the country and serving as a gateway to the Issyk-Kul region. As of 2022, Balykchy had a population of 52,225.

8. The town's physiography is shaped by its position at the western end of the Issyk-Kul basin, within the Tian Shan mountain system. It occupies a relatively flat plain at an elevation of about 1,607 meters above sea level, bordering the saline Lake Issyk-Kul. The Kungey Ala-Too and Terskey Ala-Too mountain ranges are to its north and south, respectively. Land use in Balykchy reflects its historical role as an industrial and transport hub, with significant areas dedicated to industrial facilities, a railway terminal, a seaport, residential zones covering about 576.8 hectares, commercial areas, and waste management facilities. The immediate area around Balykchy has limited agriculture due to its arid nature, and the soils are generally stony and humus-poor, classified as mountain/valley grey-brown desert rocky or light grey soils.

9. Balykchy has a mid-latitude steppe climate (BSk) with warm summers and cold winters and relatively low annual precipitation of around 536 mm. Temperatures range from -9.7°C in January to 19.6°C in July. The wettest months are June, July, and August, while January, February, and December are the driest. Snowfall is relatively rare and typically lasts for 7-10 days.

10. The city's water resources primarily come from 16 artesian wells, as Lake Issyk-Kul is saline and not used for direct human consumption without extensive desalination. While groundwater quality lacks sufficient data for a definitive assessment and has been affected by an aging distribution network, surface water quality in Lake Issyk-Kul generally shows good aeration, with dissolved oxygen levels exceeding benchmarks and BOD_5, ammonia, nitrite, nitrate, and heavy metal levels within acceptable limits. However, wastewater effluent from the Balykchy WWTP did not meet standards in 2017.

11. Ambient air quality typically falls within the moderate category, though PM2.5 levels occasionally exceed WHO guidelines. Primary pollutants include PM2.5, PM10, and

occasional NO_2 emissions. Noise levels are generally low, consistent with the region's predominantly rural nature.

12. Balykchy's ecological resources are characterized by a high-altitude saline lake (Issyk-Kul), dry semi-arid steppe, and mountain foothills, all influenced by human activity. Dominant habitat types include lacustrine (Lake Issyk-Kul), limited riparian and wetland areas, semi-arid steppe/desert-steppe, and urban/human-modified habitats. The vegetation is predominantly desert-steppe, with drought-resistant plants like Chenopodiaceae and Artemisia, and a notable absence of natural trees in the immediate vicinity. More diverse mountain steppe and coniferous forests are found at higher elevations.

13. The fauna of Balykchy is diverse, with significant avian life and unique aquatic species. Lake Issyk-Kul, particularly Balykchy Bay, is a globally important Ramsar Site for wintering and migratory birds, including Whooper Swans, Red-crested Pochards, and White-headed Ducks. Steppe and foothill birds like larks, wheatears, and various birds of prey are also common. The lake is home to seven endemic fish species, such as the Issyk-Kul Dace, along with native and introduced species. Smaller mammals like Tolai Hares, Ground Squirrels, Red Foxes, and Muskrats inhabit the steppe and foothills.

14. The population of Balykchy was 51,487 in 2022, with females slightly outnumbering males. The population has seen a resurgence since the Soviet collapse, with a relatively young age structure. The city has a multi-ethnic composition, with Kyrgyz as the majority (84.5%), followed by Russians (11%). Historically an industrial and transport center, Balykchy's economy is re-emerging, driven by transportation and logistics, food processing, services and tourism, and construction materials. There are also plans for a wind power plant, positioning the city as a future renewable energy hub. The workforce of 30,911 is primarily engaged in services, industry, and transportation, with a notable informal sector. The unemployment rate in the broader Issyk-Kul Oblast was 5.5% in 2022.

15. Balykchy's cultural heritage reflects its past as a fishing and transport hub. Key aspects include the Balykchy Museum of Local Lore, Soviet-era architecture and monuments, religious sites (Orthodox church and mosque), and a memorial to Pyotr Petrovich Semyonov-Tyan-Shansky. The city also has historical ties to a branch of the Great Silk Road, serving as a transit point. Its cultural heritage is further intertwined with broader Kyrgyz nomadic traditions and a strong connection to fishing, as reflected in its name, which means "fisherman".

16. **Analysis of Alternatives**. The analysis of alternatives considers the "Without Project Option" and the "With Project Option." The former would result in no significant adverse impacts but also no improvements in sanitation, while the latter involves temporary construction impacts but long-term benefits for health and sanitation.

17. **Environmental Assessment**. The anticipated environmental impacts and mitigation measures section identifies potential impacts during the construction and operation phases, such as changes in air quality, noise, water resources, soil, and community safety. Mitigation measures include dust suppression, noise control, waste management, and safety protocols. During the environmental assessment, no significant adverse and irreversible environmental impacts were noted due to the expected volume of construction work. The overall impact of

the project is anticipated to be very positive compared to existing conditions, provided that potential negative impacts are effectively mitigated.

18. The IEE includes an Environmental Management Plan (EMP) and an Environmental Monitoring Plan (EMoP). The EMP outlines detailed actions for mitigating impacts during pre-construction, construction, and operation phases, with specific roles and responsibilities assigned to various stakeholders, including contractors, PMO, and environmental specialists. The environmental management budget estimates the costs for implementing the EMP. A Site-Specific Environmental Management Plan (SSEMP) must be developed by contractor prior to construction, incorporating environmental concerns from the IEE and EMP. No civil works can commence without an approved SSEMP. Mitigation measures will be implemented during pre-construction, construction, and operational phases, aligning with ADB's SPS 2009 and Kyrgyz Republic laws.

19. **Information disclosure and stakeholder consultation** are integral to the project, ensuring transparency and community involvement. Public consultations were held on April 4, 2025 at Balykchy City to inform and involve local communities and stakeholders, and a Grievance Redress Mechanism (GRM) has been established to address complaints and feedback from affected persons

20. **Conclusion**. The proposed activities focus on expanding the existing sewerage network and improving sanitary conditions in Balykchy, aiming to enhance the quality of life and the environment. The document recommends ensuring compliance with the EMP and conducting post-construction audits to verify that all necessary measures have been followed. The successful implementation of the project will not only provide infrastructure but also contribute to the preservation of the environment within the framework of sustainable development.

1 INTRODUCTION

1.1 Background

21. Recognizing the significant environmental value of the Lake Issyk-Kul and its region, the Government is currently implementing reforms in the water supply and sanitation sector, which have included the formulation of the National Development Strategy of the Kyrgyz Republic for 2018-2040 and the Program for the Development of Drinking Water Supply and Sewerage in Settlements of the Kyrgyz Republic until 2026 (Resolution of the Government of the Kyrgyz Republic dated June 12, 2020 No. 330). Previously, ADB has assisted to improve environmental management and urban services in the region through the first Issyk-Kul Sustainable Development Project (ISDP-1), and other external assistance continues to be provided.

22. The proposed Issyk-Kul Wastewater Management Project (IWMP) builds on previous initiatives to further enhance wastewater systems in Balykchy and Karakol, significantly improving health, hygiene, and sanitation standards. Implemented by the Government of the Kyrgyz Republic and the ADB, the project aims to achieve these improvements by rehabilitating existing dilapidated wastewater treatment plants (WWTPs), expanding wastewater collection networks, and strengthening institutional capacity in both cities.

23. Under Project Number 50176-002, the sewer network covering 12.65 km in Karakol city and 10.66 km in Balykchy city has been successfully completed. To extend the benefits to local residents in Balykchy, an additional sewer network of 11.034 km and construction of 3 sewer pumping stations (at Sportivnaya Street, Pervomayskaya Street and Kalinina) has been proposed. This expansion will be funded by the ADB under the Issyk-Kul Wastewater Management Project (Loan Approval Number: 3742/0628). The construction approach for the new sewer network will remain the same as that of packages W1 Lot 1 and Lot 2 in Balykchy City, with no changes in technology. In accordance with ADB SPS 2009 requirements, the Executing Agency—State Institution 'Department of Drinking Water Supply and Sewerage Development (DDWSSD)' under the Water Resources Service within the Ministry of Water Resources, Agriculture, and Processing Industry of the Kyrgyz Republic—has prepared this Initial Environmental Examination (IEE).

24. Safeguard categories of the project have been set by ADB for environment as “B”[2]. In accordance with ADB’s Safeguard Policy Statement (SPS), a Rapid Environmental Assessment (REA) checklist has been prepared to support the environmental categorization of the subproject (refer Appendix 1). According to ADB safeguards policy, Environmental Safeguard Category B projects have been considered as their potential adverse environmental impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination (IEE), including an EMP, is required for Environmental Safeguard Category B projects.

25. The purpose of this IEE Report is to assess the potential environmental, health, safety and social impact of the proposed sewerage network project. During the environmental

[2] https://www.adb.org/projects/50176-002/main

assessment, due to the expected volume of construction work, no significant adverse and irreversible impacts on the environment were noted. This IEE Report includes an Environmental Action Plan and an Environmental Monitoring Plan (EMP).

1.2 Purpose of the Report

26. This Initial Environmental Examination (IEE) is part of the preparations for expanding the additional 11.034 km sewer network and three sewer pumping stations (located at Sportivnaya Street, Pervomayskaya Street, and Kalinina) in Balykchy. It has been prepared in accordance with ADB's Safeguard Policy Statement (SPS) of June 2009, as well as the Kyrgyz Republic's Law on Environmental Protection (1999) and other relevant laws, regulations, and requirements. The objective of the IEE is to (i) identify and assess potential impacts and risks of project implementation on the physical, biological, cultural, and socio-economic environments within the project area, and (ii) recommend measures to avoid, mitigate, and compensate for adverse effects while enhancing positive impacts. The IEE has been developed based on relevant references, desk assessments, site reconnaissance, community consultations, and discussions with government agencies and other stakeholders.

1.3 IEE Structure

27. This IEE is structured in accordance with SPS 2009 specifications[3]. It consists of an executive summary, ten chapters, and annexures. It has been prepared based on Detailed Designs prepared by the technical team; primary surveys and secondary data collection and analyses carried out by environmental, biodiversity, hydrogeology, and social experts; and public and stakeholder consultations. The structure of the IEE is as follows

Executive Summary

Chapter 1 – Introduction

Chapter 2 – Policy, Legal and Institutional Framework

Chapter 3 – Project Description

Chapter 4 – Description of the Environment

Chapter 5 – Analyses of Alternatives

Chapter 6 – Anticipated Environmental and Mitigation Measures

Chapter 7 – İnformation Disclosure, Consultation and Participation

Chapter 8 – Grievance Redress Mechanism (GRM)

Chapter 9 – Environmental Management Plan (EMP)

Chapter 10 – Conclusions and Recommendations

[3] As specified in the Annex to Appendix 1, pg. 41-42 (Approach to IEE Preparation).

2 POLICY, LEGAL AND INSTITUTIONAL FRAMEWORK

2.1 Legal and Regulatory Framework

2.1.1 Constitution

28. The supreme legislative instrument in the Kyrgyz Republic (KR) is the Constitution of the Kyrgyz Republic, 1993 (latest revision 2021), hereafter referred to as 'the Constitution'. All laws must comply with the Constitution, and amendments to the Constitution are made by Nationwide Referendum on April 11, 2021[4] change or pass laws or ratify international agreements. Under the Constitution, the Kyrgyz Republic (Kyrgyzstan) is an independent, sovereign, democratic, unitary, legal, secular, and social state.

2.1.2 Natural Resources and Environment Legislation

29. The Constitution establishes the basic principles of natural resource and environmental management, including the right of KR citizens to access the primary sources of life while the main resources (land, water and subsoil) are the common property of the people and belong to the state. Based on these principles, a legal framework has been developed to regulate relations between natural resource users and the state (UNDP 2007a). The most significant relevant legislation includes:

a. Law on Ecological Expertise, 1999 (latest revision 2015), which empowers the MNRETS to undertake State Environmental Reviews (SERs) of proposed projects;
b. Law on Sustainable Development of Environmental-Economic System of Issyk-Kul, 2004, which provides a framework to regulate the preservation, use and sustainable development of Issyk-Kul Lake;
c. Law of KR "On Water" (latest revision of April 05, 2019 No. 44) The purpose and objectives of the water legislation of the Kyrgyz Republic are regulation of relations in use and protection of water resources (waters), prevention of environmental effects on water bodies and water management facilities from economic and other activities and improvement of their condition, strengthening the rule of law in the water relations.

30. In addition to legislation that pertains directly to environment and natural resources, the Kyrgyz national legal framework includes laws in other substantive areas. Chief among these are laws concerning labour and occupational health and safety, and cultural heritage protection.

[4] 1. The Constitution may be adopted by initiative of at least 300,000 voters or the President, or two-thirds of the Jogorku Kenesh Deputies at a referendum appointed by the President.
2. Amendments and additions to the provisions of I, II, and V sections of the Constitution may be adopted by initiative of at least 300,000 voters or of the President or two-thirds of the Jogorku Kenesh Deputies at a referendum appointed by the President.
3. Amendments and additions to the provisions of III and IV sections of the Constitution are adopted by the Jogorku Kenesh by initiative of the President or two-thirds of Jogorku Kenesh Deputies.
The Jogorku Kenesh adopts a law on amendments and additions to the Constitution no later than six months from the day the draft law submission to the Jogorku Kenesh for consideration.
A law on amending the Constitution shall be adopted by the Jogorku Kenesh by a majority, at least two-thirds of the total number of deputies after at least three readings with a break of two months between readings.

31. The Constitution and legal framework of Kyrgyzstan offers protections for workers, stipulating that they are entitled to labour conditions in which basic requirements for safety and hygiene in the workplace are met. The Ministry of Labour and Social Welfare and Migration of KR has primary responsibility for overseeing occupational health and safety. Key relevant legislation includes the Law of the Kyrgyz Republic on Occupational Safety, 2003, the Labour Code of the Kyrgyz Republic, 2004, and individual regulatory norms. The KR joined the International Labour Organization on March 31, 1992. A review by that organization in 2008 concluded that the Law of the Kyrgyz Republic on Occupational Safety met international norms and standards, though it also identified a lack of trained state inspectors to ensure enforcement (ILO 2008).

32. The Constitution and legal framework of Kyrgyzstan also guarantees state protection to historical monuments. The Law on Protection and Use of Historic-Cultural Heritage, 1999 (last revised 2014) establishes a system for the protection of objects of local, state and international historical or cultural importance, with the Ministry of Education and Science having custodial authority. The Ministry maintains the official state cultural heritage register, which lists over 5,000 items of local, state and international importance. Legislation most relevant to the Project is summarized in **Table1.**

Table 1: Relevant Environmental Legislation

Regulation	Year adopted/ edited	Purpose/Content
Law "On Environmental Protection"	1999 (2002, 2003, 2004, 2005, 2009, 2013, 2014, 2015,2016, 2018, 2020)	Establishes state policy and basic principles for the use of natural resources and environmental protection, including environmental impact assessment, the establishment of environmental standards and legal regimes for protected areas.
The concept of the Kyrgyz Republic on environmental safety	2018	Establishes the basic principles of environmental policy and defines global, national and local environmental problems, priorities in the field of environmental protection at the national level, as well as tools for ensuring environmental safety.
Law "On Ecological Expertise"	1999 (2003, 2007, 2015)	Provides a legislative framework for conducting and approving an EIA. Identifies (in general) projects requiring environmental assessment and SEE.
Law “On the sustainable development of the ecological and economic system “Issyk-Kul”	2004 (2013,2017, 2020)	Provides a framework for regulating the conservation, use and sustainable development of Lake Issyk-Kul, including controls on natural resource use and economic development such as a ban on capital construction within 100-m of the shoreline.
Law "On Specially Protected Natural Territories"	2011 (2012,2015, 2018)	Regulates the organization, protection and use of biosphere reserves; national parks; other protected areas with unique natural areas, flora or fauna, or cultural heritage values; and protected areas for recreation areas.
Law on Biosphere Territories, No. 48	1999 (2018-,2020)	Defines legislative norms regarding biosphere territories to preserve, restore and use natural territories with a rich natural and cultural heritage; support for long-term sustainable economic and social development, including recreation areas, restoration of natural resources, long-term environmental control, monitoring and education.

Regulation	Year adopted/ edited	Purpose/Content
Law on the protection and use of flora	2001 (2003, 2007, 2009, 2010, 2016,2020)	Regulates the use, protection, and reproduction of flora. Key principles include the conservation of biodiversity and the growth of wild plants and ecosystems; restoration and conservation of rare, endangered, and endemic species; and the use and restoration of natural plant resources based on scientific principles.
Law on Aquaculture, Fishing and Protection of Aquatic Biological Resources	1997 (1998, 2008, 2013)	Regulates commercial fishing to conserve and develop fish stocks, develop aquatic cultures and meet the needs of the population in fish products.
Law on wildlife	1999 (2003, 2014, 2015, 2016, 2020)	Establishes that the animal world is the property of the national state. Regulates the protection of wildlife in the design and construction of infrastructure, including habitats for fauna species, migration routes, and nesting and breeding areas. Provides definitions of wildlife, rare and endangered species, wildlife protection, and wildlife use.
Law on Water Resources	1994 (1995, 2012, 2013, 2016,2017, 2018, 2019)	Regulates relations in the field of use and protection of water resources, including the prevention of negative impacts, and seeks to improve cooperation and compliance with the law. Regulates the quantity and quality of water discharged into the environment and prohibits the discharge of industrial, domestic and other wastes into water bodies. Provides water protection zones where activities that can adversely affect water quality are prohibited.
Law on drinking water	1999 (2000, 2003, 2009, 2011, 2012, 2014)	Regulates the availability of drinking water and its quality.
Water code	2005 (2012, 2013, 2016)	Creates a unified legal framework governing the use, protection and development of water resources to ensure sufficient and safe water supply and preserve the environment.
Rules for the protection of surface waters	2016 (2017)	Provides a legislative framework for setting quality standards for water bodies used for fisheries and irrigation, and for enforcing regulations regarding discharges to water bodies.
Law on Air Protection	1999 (2003,2005, 2013, 2015,2016)	Regulates ambient air quality and quality management
Law on the Protection and Use of Historical and Cultural Heritage	1999 (2014, 2015, 2017,2020)	Establishes a system for the protection of objects of local, state, and international historical or cultural significance. Contains definitions of basic terms and types of protected objects.
Law on Labour protection	2003 (2009,2013, 2016)	Provides a framework for regulating working conditions, including workplace safety, workplace safety procedures, and workplace hygiene.
EU Council Directive, 91/271/EEC, Urban Wastewater Treatment Plants-UWWTP directive		Wastewater treatment shall meet effluent quality discharge Standard according to European Council Directive 91/271/EEC on Urban Wastewater Treatment Plants (UWWTP), but phased in by compared the developing regulations and conditions in Kyrgyzstan. Plant design shall meet EU Member State Standards (comparable with the smallest settlement/treatment plant size category), which are.

Regulation	Year adopted/ edited	Purpose/Content
		Parameters **Max. Effluent Standards** BOD5, biochemical oxygen demand……25 mg/l COD, chemical oxygen demand …… 125 mg/l TSS, total suspended solids …… 35 mg/l TN, total Nitrogen ……15 mg/l TP, total phosphorus …… 2 mg/l
EU Council Directive, 98/83/EC, Drinking Water Standards		Water quality sampling must be conducted to meet the frequency and methods stipulated in European Council Directive 98/83/EC and article 7(monitoring) and the related Annexes, e.g. Annex Iı, Table A (parameters to be analysed) and Table B1 (minimum frequency of sampling and analysis for water intended for human consumption supplied from a distribution network). The treated water should comply with the EU Directive 98/83/EC, and parameters are below: **Parameters** **Council Directive** Aluminium (only if used as flocculent.....0.2 mg/l Ammonium …… 0.5 mg/l Colour (Record observation) Clostridium perfringens (if water from surface water)……..0 per 250 ml Escherichia coli ……,,,,,0 per 250 ml Hydrogen ion concentration ……6 – 9 Iron (only if used as flocculent) ……..0.2 mg/l Nitrite (only when chlorination is used as a disinfectant)……0.5 mg/l Odour (Record observation) Taste (Record observation)
Resolution No. 201 of the Kyrgyz Government	2016 (2017, 2018, 2019)	Provides sanitary, sanitary-epidemiological rules and regulations, hygienic standards in the field of healthcare

2.1.3 Regulations

33. There are over 19 regulations in place to support the above-mentioned laws. The most relevant of these are the Rules on Protection of Surface Waters of the Kyrgyz Republic, 2016, Regulation on Protection and Use of Fish Resources and Aquatic Organisms, 1994 and Regulation on Protection of Fish Resources and their Habitats, 2008, which prescribe measures to ensure the conservation of fish resources and their habitats during economic activities, establishment of sanitary and protective zones along shorelines, and the prohibition of pollution of shoreline areas by municipal and other wastes. Another relevant regulatory instrument is the List of Rare and Threatened Animal and Plant Species included in the Red Data Book of Kyrgyzstan, 2005 (amended 2009), known locally as the 'Red Book'.[5] Species

[5] *The Red List categorization provides taxonomic, conservation status and distribution information on plants and animals* which have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight flora and fauna which are facing a high risk of global extinction (i.e. those listed as Critically Endangered or Endangered). The former Soviet Union originally provided a Red List of species known as the Red Data Book for its territories, and this name is still used in the KR.

included in the Red Book – and their habitats – are protected by law, and proposed development projects must incorporate measures to avoid negative impacts, as well as mitigation measures designed to prevent habitat destruction and species extirpation or extinction. *Regulations on Procedure of Environmental Impact Assessment in the Kyrgyz Republic, 2015*. The Regulation establishes the procedure of environmental impact assessment of proposed activities. The purpose of OVOS is to prevent and/or mitigate the impact of proposed activities on the environment and related social, economic and other consequences.

34. A series of instructions and decrees support the cultural heritage law. These include:

a. Decree of the President on Measures to Promote the Studies of Historic and Cultural Heritage of the Peoples of Kyrgyzstan, dated January 27, 2012 №18;
b. State List of Monuments of History and Culture in Kyrgyz Republic of National Status, approved by the government on August 20, 2002 № 568;
c. Instruction on Registration, Protection, Restoration, and Use of Historic and Cultural Monuments of Kyrgyz Republic, approved by the government on August 20, 2002;
d. Local 'Lists of Monuments of Regional Importance' approved by local authorities in compliance with the Law on Protection and Use of Historic-Cultural Heritage (Article 10).

35. The key legislation governing occupational health and safety, including at construction sites (the Law of the Kyrgyz Republic on Occupational Safety, 2003) is supported by the Labour Code of the Kyrgyz Republic, as well as other regulatory norms.

2.1.4 Standards

36. Environmental standards that are relevant to the Balykchy WWTP modernization and Balykchy sewerage extension, are identified as follows. The relevant standards include:

a. *Technical Regulation for Potable Water Safety (2011*), which establishes microbiological, parasitological and chemical maximum allowable concentrations (MACs) for potable water from centralized urban water supply systems and non-centralized sources (e.g., community wells).

b. *Rules for Protection of Surface Waters (2016, No. 128*), which establishes ambient standards for surface water used for potable water, recreation, fisheries and irrigation. The rules regulate the discharge into water bodies of all wastewaters, including domestic, industrial, rainfall and snow-melt waters, road washings, runoff from built-up areas, discharge waters of ameliorative systems, drain waters and mine waters. The rules also regulate economic activities, such as water engineering, that may cause adverse impacts on surface waters. The rules apply to all water bodies, including rivers, streams, lakes and reservoirs.

c. *Law on Portable Water of Kyrgyz Republic* which establishes standards for the quality of water bodies used for domestic and potable water supply and recreational purposes. (No. 33 March 25, 1999).

d. *Sanitary protection zones and sanitary classification of facilities, buildings and other plants Appendix 3 to the Decree of the Government of the Kyrgyz Republic of 11.04.2016 № 201 plants'* SanPin 2.2.1/2.11.006-03 (2004). Requires sanitary protection zones (SPZs) around WWTPs and pump stations in order to protect surrounding human receptors primarily from atmospheric impacts. The extent of the SPZs varies depending on the type and size of facilities.

e. Council Directive of EC of 21 May 1991. Urban Wastewater Treatment (91/271/EEC). This Directive concerns the collection, treatment and disposal of urban wastewater as well as the treatment and disposal of wastewater from certain industries. The purpose of this Directive is to protect the environment from the harmful effects of aforementioned wastewater discharges.

f. *Methodology for establishment of standards for maximum permissible discharges of pollutants into water bodies is regulated by the Decree of the Government of the Kyrgyz Republic of 13.02.2017, № 102*. It defines the procedure for establishing, calculating and revising standards of maximum permissible discharges (hereinafter - MPD) of pollutants into water bodies.

g. *Instruction for Establishing Maximum Permissible Discharges of Pollutants into Water Bodies (MNRETS Instruction, Dec 8 1993),* which specifies MACs for wastewater treatment plants based on an assessment of existing water quality and other conditions.[6]

h. *SNIP 2.04.03-85-Sewerage (External Networks and Facilities),* which establishes criteria for hydraulic capacity calculations for sewerage networks and wastewater system design, and specifies standards for components of wastewater management systems, including sewerage and treatment plants.

i. *SNIP 3.05.04-85 (External networks, water supply and sewerage facilities),* which identifies specifications for pipes, water supply and wastewater plants, tanks, pressure mains and gravitational pipelines.

j. *Kyrgyz Republic Noise Standards, Appendix 14 to Resolution of the Government of the Kyrgyz Republic On Approval of Public Health Acts of April 11, 2016 No. 201*

k. *KR Law on Sanitary, Epidemiological Well Being of the Population No. 60, July 26, 2001*, which aims to ensure sanitary- epidemiological wellbeing of the people of the Kyrgyz Republic and is used to enforce guarantees given by the state to the people to exercise their right to their health protection and to the healthy environment.

l. *According to Appendixes 14 and 15 to Resolution of the Government of the Kyrgyz Republic On Approval of Public Health Acts of April 11, 2016 No. 201 Standards for air quality and noise levels are shown un the following tables.*

m. *Sanitary Regulations and Standards SanPiN 2.1.7.573-96 Hygienic requirements for use of wastewaters and sludges for irrigation and fertilization*

6 These assessments have not yet been performed for the two Project wastewater treatment plants, so the IETPD refers to the CMEA standard when undertaking wastewater effluent monitoring.

Table 2: Ambient Outdoor Noise Standards in Kyrgyzstan

Activities / category[7]	Leqv[8]		Lmax[9]	
	Day	Night	Day	Night
Areas in immediate vicinity of hospitals and health centres	35	25	50	40
Areas in immediate vicinity of residential buildings, clinics, medical centres, care centres, recreation centres, libraries, schools, etc.	40	30	55	45
Areas in immediate vicinity of hospitals and dormitories	45	35	60	50
Recreation zones in hospitals and health centres	45	35	60	50
Recreation zones in the territory of micro-districts and groups of residential houses, holiday homes, resorts, schools, care centres, etc.	45		65	

Table 3: Ambient Air Quality Standards in Kyrgyzstan

Pollutant	Maximum Permissible (mg/m^3)	Average Daily Concentration (mg/m^3)
Particulate Material: With silica content> 70%	0.15	0.05
Particulate Material: 70–20% (cement, coal, clay, etc.)	0.3	0.1
Particulate Material: <20 % (dolomite, etc.)	0.5	0.15
Cement dust (Calcium oxide> 60% and silica >20%)	0.5	0.05
Sulphur Dioxide SO_2	0.5	0.05
Carbon monoxide CO	5	3
Nitrogen Dioxide NO_2	0.085	0.04
Nitrogen Oxide NO	0.40	0.06
Lead (Pb) and compounds (except tetra ethyl)	-	0.0003
Lead sulphurous (in terms of Pb)	-	0.0017

Table 4: Standards of Water Quality in Kyrgyzstan

Pollutants	Quality standards for fisheries (mg/dm^3)	Quality standards for irrigation water (mg/dm^3)
pH	6.5-8.6	6.5-8.4
Temperature	5-20°C	15-35 °C
Mineralization	192 before 468	1000
Hydrocarbons	-	300
Carbonates	-	6
Sulphates	100	500
Chlorides	300	250
Sodium	120	150
Calcium	180	300
Magnesium	40	150
Potassium	50	30
Nitrates	40	45
Nitrites	0.08	0.5

7 Activity Categories 1 to 7 relate to indoor standards. The standards provide for allowable noise levels to be reduced in "green areas" or other designated sensitive areas.

8 L_{eq} = the sound level equivalent, the Leq represents the level of steady sound which, when averaged over the sampling period, is equivalent in energy to the fluctuating sound level over the same period.

9 L_{Max} = maximum sound level.

Pollutants	Quality standards for fisheries (mg/dm^3)	Quality standards for irrigation water (mg/dm^3)
Ammonium	0.5	0.1
Total iron	0.1	2
Zink	0.01	1
Copper	0.001	1
Phosphates	0.05-0.2	10

2.1.5 International Treaties and Obligations

37. The Kyrgyz Republic is a party to several international treaties and conventions (**Table 5**). Fulfilment of the terms of these commitments contributes to environmental sustainability, attracts external funding for stabilization and prevention of degradation of natural resources and cultural heritage, and enhances the country's capacity to use its natural and cultural resources as a basis for poverty reduction and socio-economic development (IMF 2012[10]). Ratified international obligations and associated laws take priority over national legislation, provided they do not contradict the Constitution. In addition to UNESCO's Biosphere Reserve Convention, the nation is also signatory to the Ramsar Convention for the preservation and protection of wetlands. Issyk-Kul wetlands have been designated as Ramsar site No. 1231. This is not a legally binding designation in the nation, but rather voluntary protection. International Environmental Conventions and treaties signed and ratified by the Kyrgyz Republic is relevant and applicable for the project purposes.

Table 5: Kyrgyz Republic participation in international conventions relevant to the Project

Convention	Adopted / in force	KR Signed	Main objectives
United Nations Framework Convention on Climate Change	1992/ 1995	2000	Stabilizing greenhouse gas concentrations at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system.
Paris Agreement,	17.10.2019	2020	The objectives of this agreement are: - Containment of global temperature rise within 2°C, but with a gradual transition to 1.5°C; - increasing the ability to adapt to the adverse impacts of climate change; - directing financial flows towards low-emission sustainable development and adaptation to climate change
United Nations Convention Combat Desertification	1994/ 1996	1996	Reverse and prevent desertification and land degradation in affected areas in order to support poverty reduction and environment sustainability.
United Nations Convention on Biological Diversity	1992/ 1993	1999	Conservation of biodiversity, sustainable use of its components and equitable sharing of the benefits.

[10] Adapted from IMF Country Reports and Article IV Consultations on the Kyrgyz Republic (e.g., IMF 2012; IMF 2023). See IMF Kyrgyz Republic publications and Climate Change Adaptation Report for thematic alignment

Convention	Adopted / in force	KR Signed	Main objectives
Convention on the Conservation of the World Cultural and Natural Habitats	1972/ 1975	1995	Protection of natural and cultural heritage.
Convention on the Conservation of Migratory Species	1979/ 1983	2014	Global platform for the conservation and sustainable use of migratory animals and their habitats.
Ramsar Convention	1971	2002	Conservation and wise use of all wetlands through local and national actions and international cooperation to achieve sustainable development.
Aarhus Convention	1998/ 2001	2001	Granting public rights regarding access to information, and participation and access to justice on matters concerning the local, national and transboundary environment.
Convention on EIA in a Transboundary Context	1991/ 1997	2001	Integrating environmental assessment into state plans and programs at the earliest stages – so as to help to lay the groundwork for sustainable development.

Source: Adapted from Yessekin et. al. (2006) and ADB (2014f)

2.1.6 Protected Areas

38. The Kyrgyz Republic legal framework provides for nine classes of nationally designated protected areas, as follows:

a. **State Nature Reserves** - nationally designated protected areas with the status of a nature conservation and scientific institution whose purpose is to preserve and study the natural course of natural processes and phenomena, flora and fauna, individual species and communities of plants and animals, typical and unique ecological systems and their restoration;

b. **National natural parks** - nationally designated protected areas with the status of a nature conservation and scientific institution designed to preserve the biological and landscape diversity, use unique natural complexes and objects of the state nature reserve fund, which have special environmental, scientific, historical, cultural and recreational value for purposes of preservation, environmental education, scientific, tourist and recreational purposes;

c. **Nationally designated protected areas (natural monuments)** - areas of territories and/or water areas of priority nature conservation, scientific, cultural, aesthetic and historical significance, which are national heritage, fully or partially, permanently or temporarily withdrawn from economic activity, for which a special regime of protection and use is established;

d. **Biosphere areas** - nationally designated protected areas of terrestrial and aquatic ecological systems or combinations of them that secure a sustainable balance of biological and landscape diversity, economic development and protection of the relevant cultural values;

e. **State nature sanctuaries (Zakaznik) -** nationally designated protected areas with protection regime or regulated regime of economic activity, aimed to preserve and reproduce one or more objects of the state nature reserve fund;

f. **State Botanic Garden** - nationally designated protected areas with the status of a nature conservation and scientific organization aimed at research and scientific development on the protection, reproduction and use of flora, including rare and endangered plant species;

g. **State dendrological parks** - nationally designated protected areas with the status of a nature conservation and scientific organization, with the types of protection regime established by zones, aimed at the protection, reproduction and use of tree and shrub species;

h. **Micro-reserves** - relatively small areas, including those among agricultural lands, where economic activities are not allowed in order to create numerous pockets of conservation and reproduction of biodiversity and ecosystems;

i. **Wetlands** - areas of terrain with natural and artificial water areas, including ponds, shallow waters, as well as excessively wet areas where the water surface is usually on the ground, which are places of mass occurrence, nesting, reproduction of birds, reptiles and other near-water animal species, including rare and endangered species;

2.1.7 Territorial structure and IBA zoning

39. In accordance with the Law of the Kyrgyz Republic "On Biosphere Areas in the Kyrgyz Republic" and in accordance with international standards, the Ysyk-Kel biosphere area is divided into zones with different regimes of protection and use.

- The core zone with a total area of 141,022 hectares includes the following areas:
- wetlands of international importance as a habitat for waterfowl (Ramsar Convention) within the boundaries of the territory and water area of the Issyk-Kul reserve, 19,842 hectares, including the coastal zone 3,164 hectares and water area of the Issyk-Kul Lake 16,678 hectares;
- the reserve zone of Kara-Kol National Natural Park with an area of 8,600 hectares, represented by slope ecosystems of the forest belt of Terskey Ala-Too Ridge;
- the territory of Sarychat-Ertash state nature reserve with an area of 72,080 hectares, represented by ecosystems of the syrt uplands;
- the territory of the subalpine, alpine and nival belts of the Terskey Ala-Too ridge with an area of 59 thousand hectares;
- northern - on the northern slopes of the Terskey Ala-Too ridge above the boundaries of the state forest fund from the Djilisuu summit (3,985 m) on the watershed of the upper reaches of the Chon-Kyzyl-Suu and Kichine-Kyzyl-Suu rivers to the Tekele pass on the watershed of the Djety-Oguz and Karakol rivers;
- eastern - along the watershed of the Karakol and Djety-Oguz rivers from the Tekele pass to the Terskey Ala-Too peaks (5216 m) and further to the boundaries of the Sarychat-Ertash state nature reserve;
- western one - from the top of Djilisuu along the watershed of the Chon-Kyzyl-Suu and Kichine-Kyzyl-Suu rivers to the top of Terskey Ala-Too Kyzyl-Suu (4590) and the border of Sarychat-Ertash state nature reserve;

- southern - northern border of the Sarychat-Ertash state nature reserve.
- The buffer zone with a total area of 3,501,516 hectares includes the following areas:
    - the protected zone of the Issyk-Kul state nature reserve, excluding settlements, sanatoriums and arable lands;
    - the basin area of Lake Issyk-Kul, excluding the 1-kilometer zone near the ports and berths of sanatoriums;
    - the territory of the state forest fund on the Terskey-Ala-Too and Kyungei-Ala-Too ridges;
    - the territory of the state land reserve and farmland located above the state forest fund to the peaks of the Kyungei-Ala-Too and Terskey-Ala-Too ranges;
    - the territory of the Issyk-Kul oblast southeast of the Terskey-Ala-Too ridge to the state border of the Kyrgyz Republic, excluding settlements, industrial lands, lands of energy and areas with mineral deposits.
    - Transitional zone with a total area of 688540 hectares, including agricultural land and land for industry, transport, communications, defense and other purposes, as well as the territories of settlements, sanatoriums and the rest of the Issyk-Kul basin, which was not included in the buffer zone.
    - Remediation zone, including anthropogenically disturbed territories requiring regeneration and reclamation measures (mineral deposits, tailing dumps, highway strips, settlements, degraded lands, cattle-driving tracks and cattle-stopping areas).

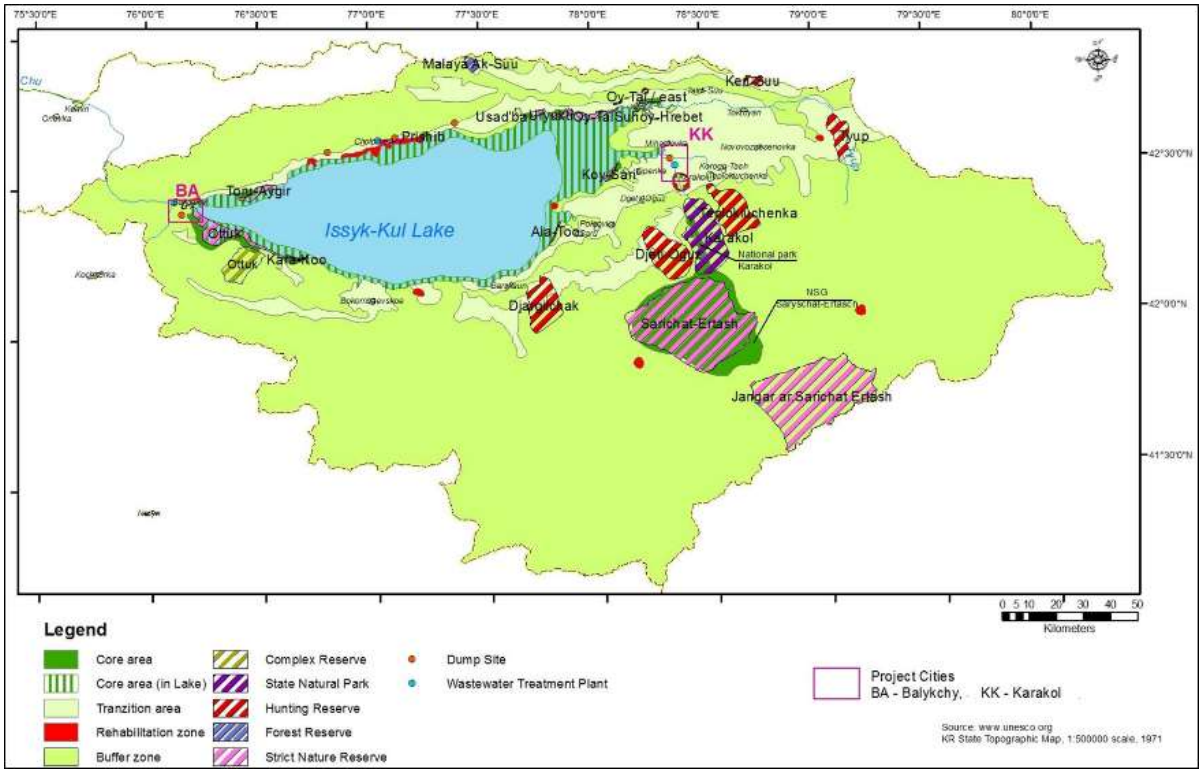


Figure 1: Zoning Map of Issyk-kul Biosphere Reserve

2.2 Relevant Policy and Institutional Framework

2.2.1 Sustainable Development and Environmental Policy

40. The main document setting out government policy for current and future development within the Kyrgyz Republic is the National Strategy for Development for the Period 2018-2040. The strategy notes the necessity of linking economic and environmental factors in order to achieve sustainable development. It recognizes that current economic growth in the nation is based mostly on natural resource-intensive development, and identifies the following significant consequences of this 'brown development': (i) environmental problems and depletion of natural capital (climate change, pollution, loss of biodiversity, degradation of agricultural land, desertification, lack of water for irrigation and domestic use); (ii) increases in poverty; (iii) threats to food security; (iv) threats to energy security; and (v) social inequality. The strategy affirms that sustainable development requires the inclusion of environmental factors as economic development indicators and states the GKR's intention to formulate and consistently implement uniform state policy within a framework of environmental security and protection, covering all aspects of ecosystem sustainability "green development". The principles of this environmental policy include:

a. Minimization of adverse environmental consequences of economic growth by assessing the environmental impact of planned commercial and other development projects.
b. A fee basis for the use of nature and reimbursement of damages inflicted on the environment as a result of violations of environmental legislation.
c. Accessibility and openness of environmental information.
d. A gradual shift to a system of strategic sustainable development planning of economic, social and environmental activities, irrespective of their form of ownership; and
e. Participation of all interest groups in decision making on environmental protection and rational use of nature, at both national and local levels

2.2.2 Relevant Environmental Management Institutions

41. The MNRETS has the primary responsibility for environmental management in the Kyrgyz Republic. The MNRETS receives its mandate through the Law on Environmental Protection (1999). The main objectives of the MNRETS are to:

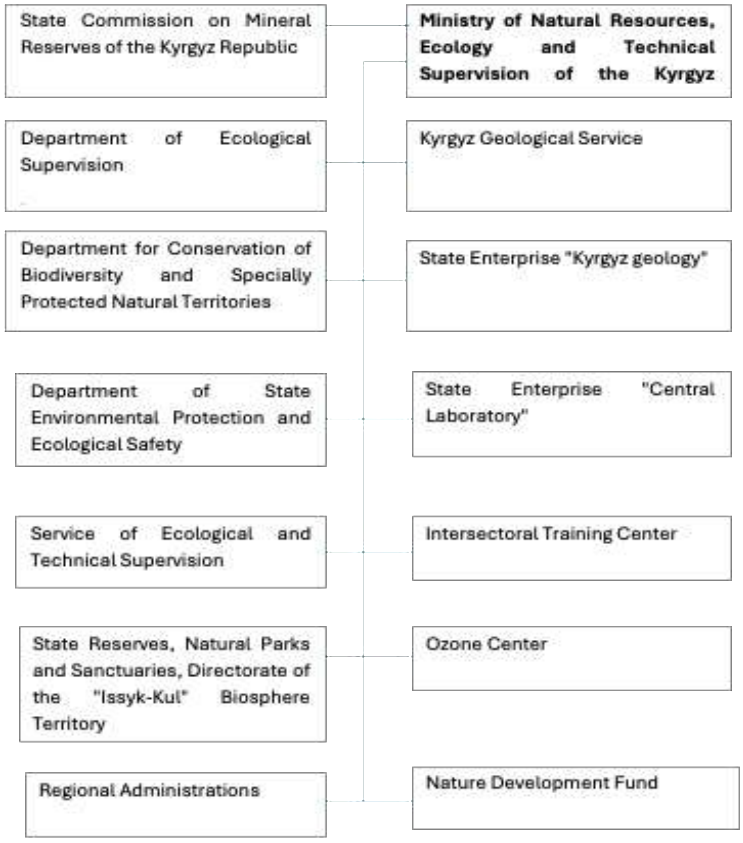
a. Develop and implement fundamental directions in environment and biodiversity protection, forest ecosystems, and protected areas;
b. Promulgate the rational use of natural resources, sustainable development, and the implementation of mechanisms for environmental protection; regulate nature use; ecological control and
c. Formulate environmental legislation.

42. The MNRETS is responsible for reviewing environmental assessment documents for projects of national significance. The review and approval of less significant projects are delegated to the territorial level departments. The organizational structure of MNRETS is presented in **Figure 2**. The MNRETS has two departments responsible for environmental management within the Issyk-Kul basin. These are the Issyk-Kul Territorial Department for

Environmental Protection (ITDEP), which has a regional office in Cholpon-Ata, and the Issyk-Kul Biosphere Reserve General Directorate (IBRGD), which has its office in Karakol.

43. The following tasks are in the scope of Biosphere Reserve in accordance with its functions:

- Ensure long-term preservation of biological and landscape diversity of the region as well as protection of the unique ecosystem and Issyk-Kul Lake;
- Ensure cooperation with local and national environmental authorities in planning and management to create favourable conditions for people's lives;
- Develop and introduce environmentally advanced new technologies of nature management to form a model of harmonious coexistence of nature and man, considering the region-specific local, economic, cultural and ethnic peculiarities;
- Facilitate and ensure the participation of local residents and representatives of stakeholder groups in making environmentally important decisions in the planning and management of natural resource use and economic development;
- Develop an interdisciplinary research base, especially for projects that address local problems, including restoration of degraded ecosystems, soil and water protection;
- Protection and control over the observance of natural resource use regimes in accordance with the zonal division of the biosphere area and the management structure are carried out by state and public control services.
- However, the most tasks are implemented by Territorial Department of MNRETS.



Source: Website of the Ministry of Justice of the Kyrgyz Republic http://cbd.minjust.gov.kg/act/view/ru-ru/158726?cl=ru-ru (Resolution of the Cabinet), 2022

Figure 2: Organizational Structure of MNRETS

44. Although these two organizations have different mandates, they have some overlapping duties. The ITDEP is responsible for monitoring producers of waste for compliance with environmental regulations and providing the environmental component of project approvals and environmental reviews (State Ecological Expertise) when projects are reviewed at the oblast level. Depending on the severity of the proposed environmental impacts, the MNRETS and/or the ITDEP are responsible for subsequent environmental monitoring and protection. The ITDEP laboratory conducts periodic monitoring of water quality in Issyk-Kul Lake and incoming rivers. The IBRGD received related laboratory equipment and training support through Phase I of the ISDP. The IBRGD has the mandate to manage and support environmental protection and sustainable development within the Issyk-Kul Biosphere Reserve, which includes all of the Project's proposed sites of activity. IBRGD activities include awareness-raising, scientific research and conservation activities. The IBRGD is financed from the state budget and other sources, and since 2005 has been considered to be financially independent. The Issyk-Kul Territorial Administration of the MNRETS executes the functions of the Ministry within Issyk-Kul Oblast and carry out state ecological inspection of all entities in Issyk-Kul Oblast. The MNRETS imposes fines for illegal disposal of waste and monitors landfills in Issyk-Kul Oblast.

45. Other government agencies with environmental management responsibilities include:

a. **Ministry of Health (MoH)**, which is responsible for health and safety, standards for pollutants in air, water and food, and noise and vibration standards. The State Sanitary and Epidemiological Service (SSES) under the MoH implements sanitary, hygiene and anti-epidemic activities; improvements to working and recreation environments; and disease prevention. It operates through a network of regional offices.
b. **Ministry of Labour, Social Welfare and Migration (MLSD)**, which oversees the development of long-term programs on occupational health and safety and contributes to occupational health and safety services at other ministries, agencies, enterprises and organizations. Policy is implemented through its local *oblast* level departments.
c. **Ministry of Emergency Situations (MES)**, which is responsible for emergency response and natural hazards. Its subsidiary agency, Kyrgyz Hydromet, is responsible for meteorological services and ambient air and water quality monitoring.
d. **Ministry of Water Resources, Agriculture and Processing Industry (MoA)**, which is responsible for agricultural lands and pastures as well as for recommendations how to use WWTP sludge for (a) disposal and (b) re-use in agriculture.
e. **Ministry of Energy (MoE)**, which is responsible for exploration, regulation, control and protection of subsurface resources.
f. **State Enterprise "Cadastre" under the State Agency for Land Resources of the KR Ministry of Agriculture**, which acts as a land registry and undertakes systematic registration of properties in urban and municipal areas.

g. **Rayon State Administrations (RSAs)**, whose responsibilities include allocation of land plot for use including transfer of land plots established in the Land Code, public hearings, and information disclosure.
h. **Organs of Local Self-Governance (OLSG)**, known also as *aiyl okmotu*, which are responsible for social issues, and the allocation of lands for stockpiles, asphalt plants, construction camps, etc. (ADB 2014).

46. The powers of the above state bodies and municipal bodies are determined in accordance with the Regulations or Charters about them, which are approved by the Government of the Kyrgyz Republic or higher local government bodies.

2.2.3 Environmental Monitoring Capacity

47. The MNRETS holds the primary responsibility for environmental monitoring. Its central laboratory, located in Bishkek within the Environmental Monitoring Administration, performs several key functions: (i) conducting water sampling and analysis, (ii) overseeing industry wastewater permits, (iii) assisting state control inspectors with sample collection and analytical services, and (iv) participating in transboundary water quality studies and monitoring.

48. Additionally, MNRETS operates laboratories under oblast-level Territorial Environment Protection Monitoring Departments. The ITD of the MNRETS laboratory carries out periodic water quality monitoring in Issyk-Kul Lake and its watershed rivers. It also conducts monthly sampling and analysis of influent and effluents at the Balykchy WWTP on a contractual basis.

2.3 Kyrgyz Republic Environmental Assessment Requirements

49. The construction of additional 11.034km sewer network and three sewer pumping stations (located at Sportivnaya Street, Pervomayskaya Street, and Kalinina) in Balykchy City is subject to the environmental assessment requirements of the Kyrgyz Republic. This section describes the Kyrgyz Republic requirements.

2.3.1 Legal Basis

50. The primary legal basis for environmental assessment in the Kyrgyz Republic is the Law on Environmental Protection, 1999, which prohibits financing and implementation of projects without a positive statement of State Ecological Expertise[11] (SEE). The Law on State Environmental Expertise specifies the requirements for the preparation of the SEE and provides supporting instructions. The Kyrgyz Republic is also a signatory to the Aarhus Convention, and its requirements, together with the Law on State Environmental Expertise, provide the legislative framework for requiring public participation in environmental decision-making through the process of Public Ecological Expertise (PEE).[12]

Table 6: Key KR environmental assessment laws

[11] Concerning '*expertise*'- If read without an understanding of the specific context, *expertise* has little meaning as translated. It is grammatically incorrect and confusing since sometimes it refers to an agency, sometimes to a process and at others to a decision. It most often is used for environmental assessment.

[12] The Aarhus Convention establishes a number of rights of the public (individuals and their associations) with regard to the environment, including (i) access to environmental information; (ii) public participation on environmental decision-making; and (iii) access to justice regarding environmental decisions made without regard to the first two rights or in contravention of environmental law. The Parties to the Convention are required to make the necessary provisions so that public authorities will honour these rights.

Legislative Instrument	Requirements
Law on Environmental Protection, 1999 (amended 2002, 2003, 2004, 2005, 2009, 2013, 2014, 2015, 2016)	Defines the policy and regulates the legal relations applicable to natural management and environmental protection in the KR.
Article 17: Environmental requirements related to location, design, construction, reconstruction and commissioning of enterprises, structures and other facilities	Defines EIA requirements.
Article 22: Environmental Protection from Harmful Physical Effects	Forbids exceeding the maximum allowable standards for noise, vibrations, electromagnetic fields and other harmful physical effects on human health and environment.
Article 10: Environmental Impact Assessment	Requires an EIA when preparing the feasibility evaluations for: - Concepts, programs and plans of sectorial and territorial socioeconomic development. - Plans of integrated usage and protection of natural resources. - Master plans of towns and settlements as well as other town-building documentation. **New construction, reconstruction, expansion and re-equipment.**
Article 3: Objects (Facilities) of State Environmental Expertise	Requires SEE for construction, reconstruction, expansion, technical upgrading, temporary closing and liquidation of objects (facilities).
Regulation on Order of Environmental Impact Evaluation approved by Resolution of the Kyrgyz Government of 13.02.2015 no. 60	Provides detailed screening lists of projects requiring an environmental assessment.

2.3.2 Environmental Process

51. Beginning with the initial application, the environmental assessment and permitting process in Kyrgyz Republic follows a prescribed set of steps. These are presented and described below in **Table 7**. Under the project, the section “Environmental protection” and the design of sanitary protection zone had been developed, which passed the state environmental expertise procedure and received positive conclusions.

Table 7: Environmental assessment and permitting process

Step	Actions
1	Project proponent submits application to appropriate local government authority (e.g. city mayor’s office), and authority forwards application to State Enterprise "Cadastre" under the State Agency for Land Resources of the KR Ministry of Agriculture and the local Department of Environmental Protection (MNRETS)
2	State Enterprise "Cadastre" under the State Agency for Land Resources of the KR Ministry of Agriculture reviews issues of land use and ownership and issues Land Allocation Statement (LAS) Local Department of Environmental Protection (MNRETS) reviews LAS (land allocation statement) to scope environmental issues, and screens project against list of project types automatically requiring an EIA in *Instruction on Environmental Impact Assessment Performance Procedures in the Kyrgyz Republic* Regulation

Step	Actions
	on Order of Environmental Impact Evaluation approved by Resolution of the Kyrgyz Government
3	Application package is sent to Territorial department for Urban Planning and Architecture. Territorial department for Urban Planning and Architecture consults with local agencies to consider issues of location and design (e.g., land suitability; environmental impact; public health; architecture and landscape; fire risk; and availability of electricity and other services), and consults with the relevant *rayon* administration(s)
4	If conclusions of the Stage 1 review are positive, a relevant body of local self-governance makes decision on entitlement and allocation of a land plot. State Enterprise "Cadastre" under the State Agency for Land Resources of the KR Ministry of Agriculture issues register the title for the land lot (by State Act) for intended use.
5	Preliminary engineering designs are developed, geotechnical/geological and other surveys are conducted and service provision is investigated.
6	Designs are reviewed by Gosarkhitectura
7	OVOS Report is developed at the stage of detailed design. Upon approval from stakeholders (PMO, ADB), public consultations should be conducted. Section “Environment Protection (OOS)” is developed at the stage of detailed design as a part of the design and estimate documentation; approvals from State Enterprise "Cadastre" under the State Agency for Land Resources of the KR Ministry of Agriculture, Gosarkhitectura and other local agencies; and should be submitted for review of state ecological expertise in the regional department of MNRETS (Refer Appendix 5 - Conclusion received from State Ecological Expertise)
8	MNRETS appoints a SEE committee and instigates the SER process. The project may be approved, rejected or sent for re-examination.
9	If the SEE conclusion is positive, the relevant territorial department of Gosarkhitectura issues the Construction Permit.
10	The relevant territorial department of Gosarkhitectura considers the final project designs (including any amendments made during construction) and if there are no objections, issues the Operation Permit.
11	The local (Oblast level) Environmental Protection Department undertakes inspections and monitoring of environmental impacts during operation.
	a. The EIS should be prepared by a licensed and certified EIA professional hired by the project proponent, and must cover: (i) description of the project or planned activity; (ii) possible alternatives for the project or planned activity; (iii) description of the existing environment; (iv) types and degree of impacts on environment and population; (v) possible changes in environmental quality; (vi) description of socio-economic and ecological consequences; (vii) findings from public consultations; and (vii) actions to prevent environmental damage or mitigate the level of ecological risk. b. The proponent will be required to conduct public consultations as a matter of course, and include the findings in the EIS. In addition, the project may also go through an independent PEE review. PEE may be initiated by citizens, local administrations or public associations, and is meant to inform interested parties

Step	Actions
	about a proposed project, identify probable adverse environmental and social impacts, and search for solutions to avoid or limit adverse impacts. The PEE process can include public meetings, workshops, public opinion surveys, dissemination of newsletters and bulletins, and information sharing via press and TV. The conclusions of the process should be summarized in a PEE Declaration, which will be submitted to the state expert commission conducting the project SER. The PEE Declaration is a supplement to the SER and is considered to be of a recommendatory nature. It may be published in the mass media and passed to local state administrations and local councils, the project proponent, and other stakeholders. PEE is typically only undertaken for large scale controversial projects. c. The SER duration depends on the complexity of the project, but should not exceed 3 months.

2.4 Applicable ADB Policies and Environmental Assessment Requirements

2.4.1 Environmental Assessment Requirements

52. The major applicable ADB policies, requirements and procedures for Environmental Assessment are the SPS 2009; *ADB Operations Manual for the SPS* (OM Section F1, 2010); and *Environmental Safeguards – A Good Practice Sourcebook* (2012). The SPS 2009 promotes good practice as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety Guidelines. The Operations Manual underpins the policy statement, and the Sourcebook provides practical guidance on SPS 2009 implementation. The guidelines shared in the Environmentally Responsible Procurement (https://www.adb.org/documents/environmentally-responsible-procurement-reference-guide-better-practices) shall be adopted during the course of the project implementation

53. The SPS 2009 establishes an environmental review process to ensure that projects are environmentally sound, are designed to operate in line with applicable regulatory requirements, and are not likely to cause significant environmental, health, social, or safety hazards. ADB assigns proposed projects to one of four categories, described in detail in SPS 2009. Category A requires a full-scale EIA, Category B an IEE[13] while C requires no document, although effects are reviewed and recorded. Issyk-Kul Wastewater Management Project has been classified by ADB as Category "B" and requires the preparation of an IEE. All applicable environmental requirements in the SPS 2009 are covered in this IEE.

54. Besides the environmental assessment requirements, good practice guidance for the management and control of ACM and various COVID-19 guidance notes prepared by ADB need to be considered within the project's environmental impact assessment.

55. The purpose of Good Practice Guidance for the Management and Control of Asbestos is to increase awareness of the health risks in the workplace and provides recommendations on managing the risks of exposure. It contains high-level recommendations on the following: duties of employers, workers and asbestos contractors and sellers:

[13] The IEE is also detailed environmental investigation as an EIA; the main differences relate to administrative procedures for the loan.

- Training requirements for work with asbestos; projects/employers.
- Identification of asbestos.
- Safe work with asbestos.
- Management of incidents connected to asbestos finding.
- Management for safe removal of asbestos,
- Management of asbestos waste as well as management of asbestos waste occurred as results of natural disasters.

2.4.2 Information Disclosure and Public Consultation

56. Information disclosure involves delivering information about a proposed project to the general public and to affected communities and other stakeholders, beginning early in the project cycle and continuing throughout the life of the project. Information disclosure is intended to facilitate constructive engagement with affected communities and stakeholders over the life of the project. In order to make key documents widely available to the general public, the SPS 2009 requires submission of a finalized IEE for Category B projects to ADB for disclosing it on their website.

57. ADB's Access to Information Policy (AIP)[14], which went into effect on 1 January 2019, reflects ADB's ongoing commitment to transparency, accountability, and participation by stakeholders. The policy, led by a new overarching principle of clear, timely, and appropriate disclosure, contains principles and exceptions to information sharing with external stakeholders. Details of policy implementation and disclosure requirements are provided in ADB's *Operations Manual* (OM L3). ADB's website is the primary medium for disclosure. Where necessary, more appropriate means of information dissemination will be used that considers such things as literacy level, geography, infrastructure, and popular mass media for reaching project-affected people.

58. Meaningful consultation is defined under the SPS 2009 as a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making about such matters as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues (ADB 2009c). As part of the project management for complaint handling the guidelines suggested in the ADB website shall be adopted https://www.adb.org/sites/default/files/publication/29678/grievance-mechanisms-critical-component.pdf.

[14] ABDs information disclosure policy is available at https://www.adb.org/documents/access-information-policy.

3 PROJECT DESCRIPTION

3.1 Background

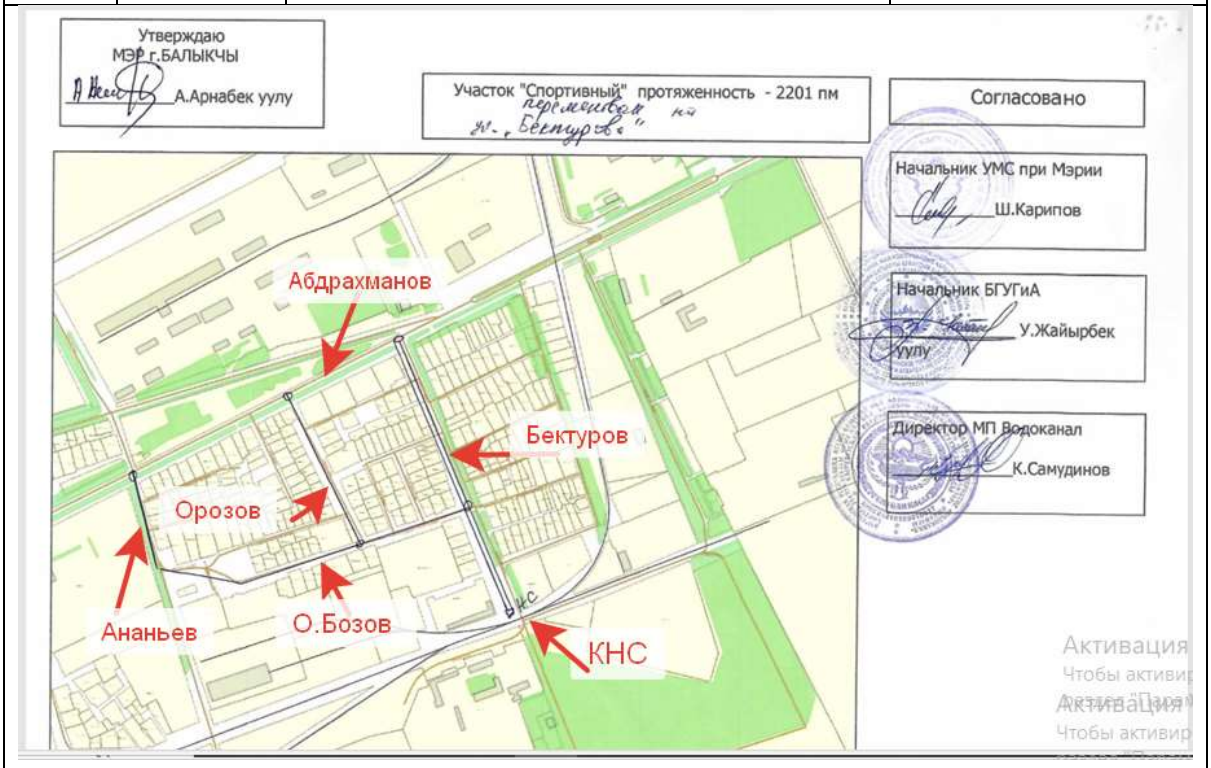
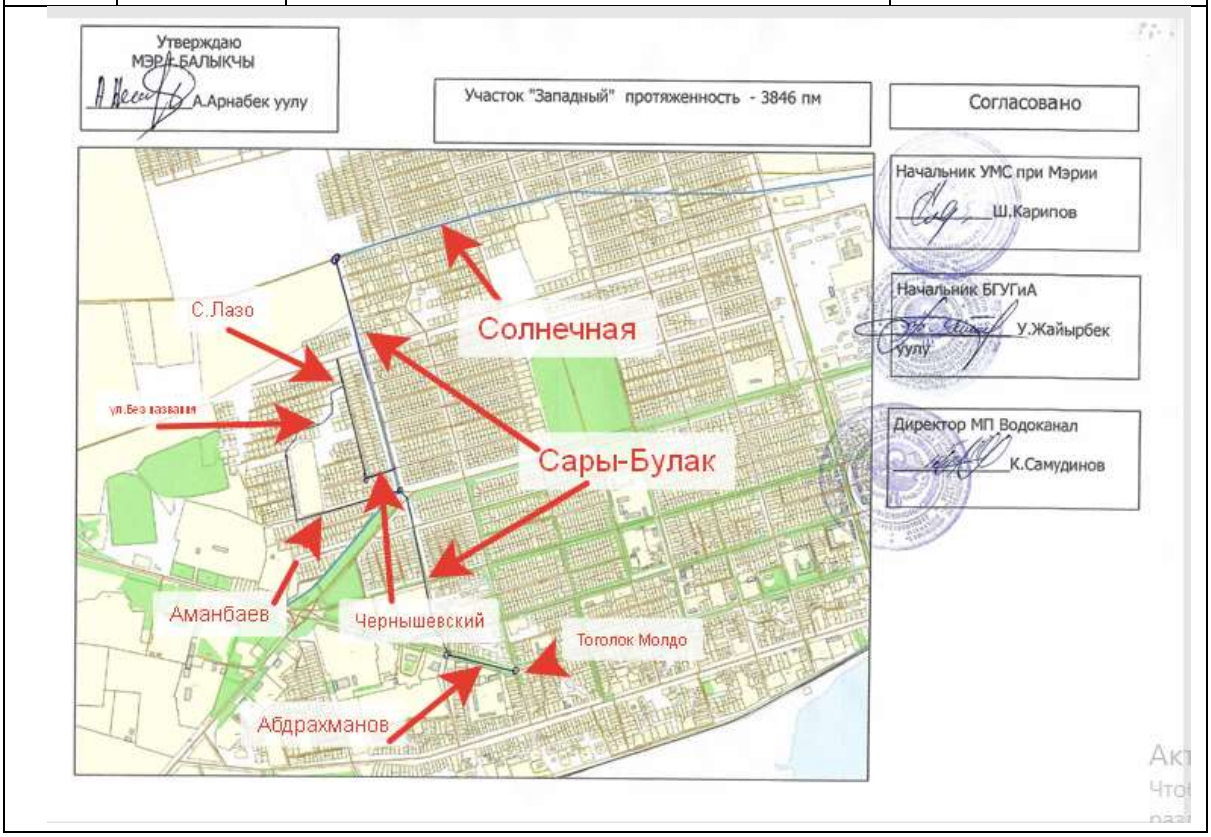
59. Under the ADB finance (project number 50176-002), the sewage networks covering 10.66km in Balykchy city was successfully completed and now it is in operation. In order to extend the sewage networks an additional 11.034 km sewer network and three sewer pumping stations (located at Sportivnaya Street, Pervomayskaya Street, and Kalinina) has been included in the Balykchy City. The site layout of the sewage network is shown in Figure 3. The anticipated environmental impacts based on the proposed sewer networks are temporary (mostly related to construction works), however the project also address potential negative impacts which will be mitigated through either avoidable design and construction planning, or with proven and established mitigation measures. This is the focus of this IEE.

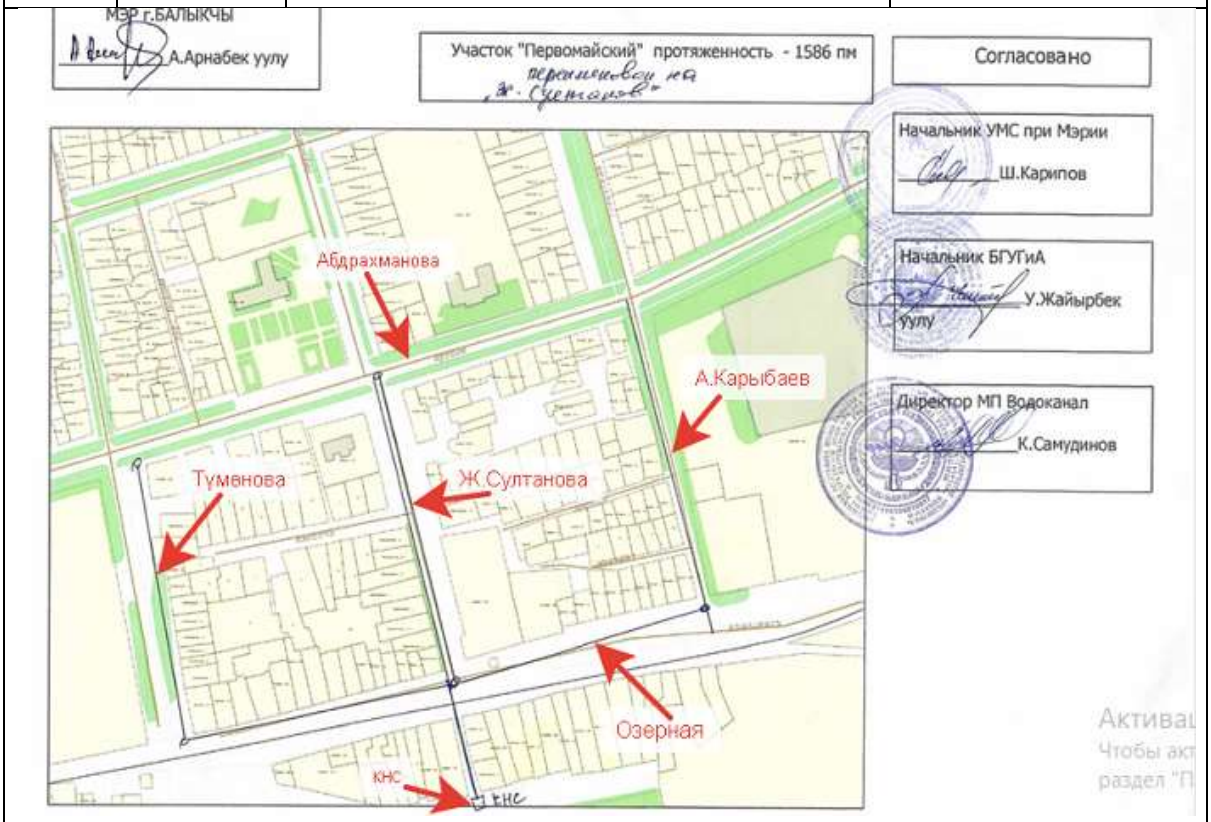
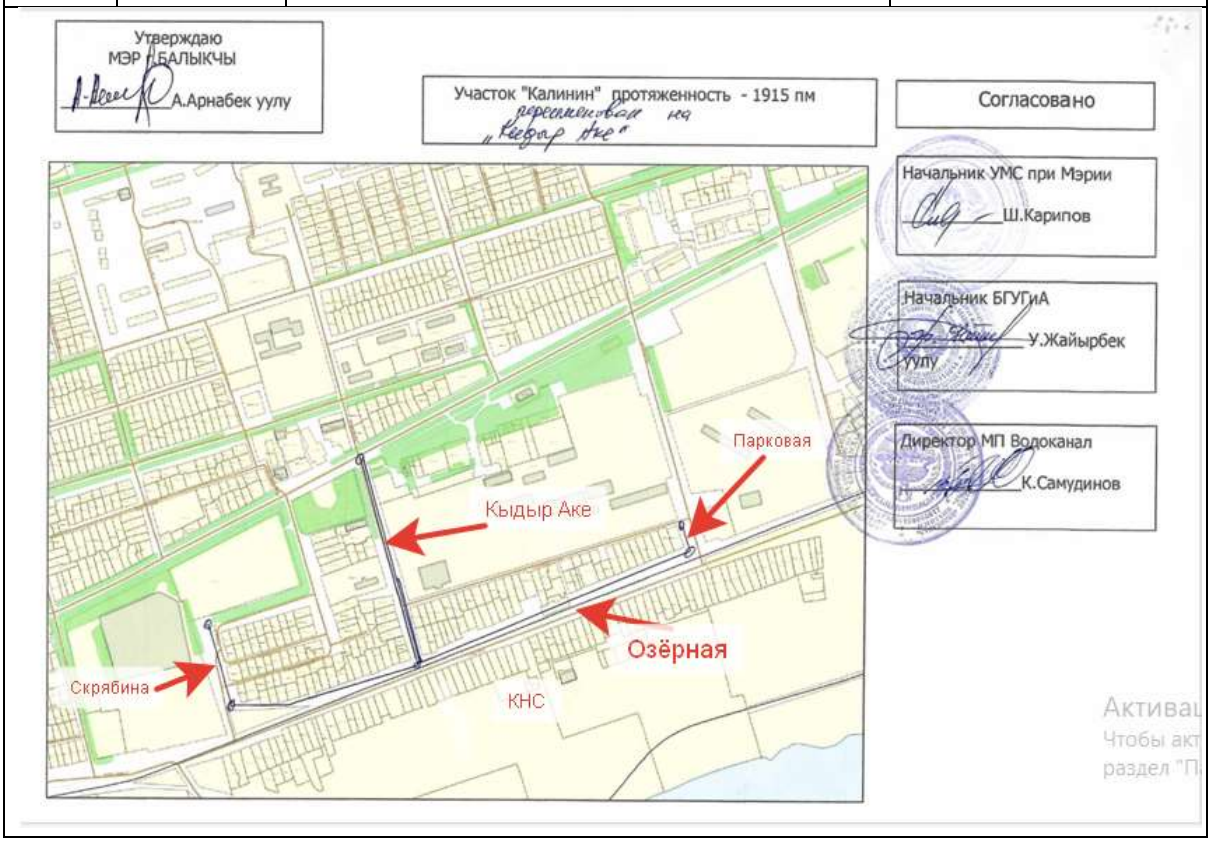
Figure 3: Sewage Network – Additional Areas in Balykchy

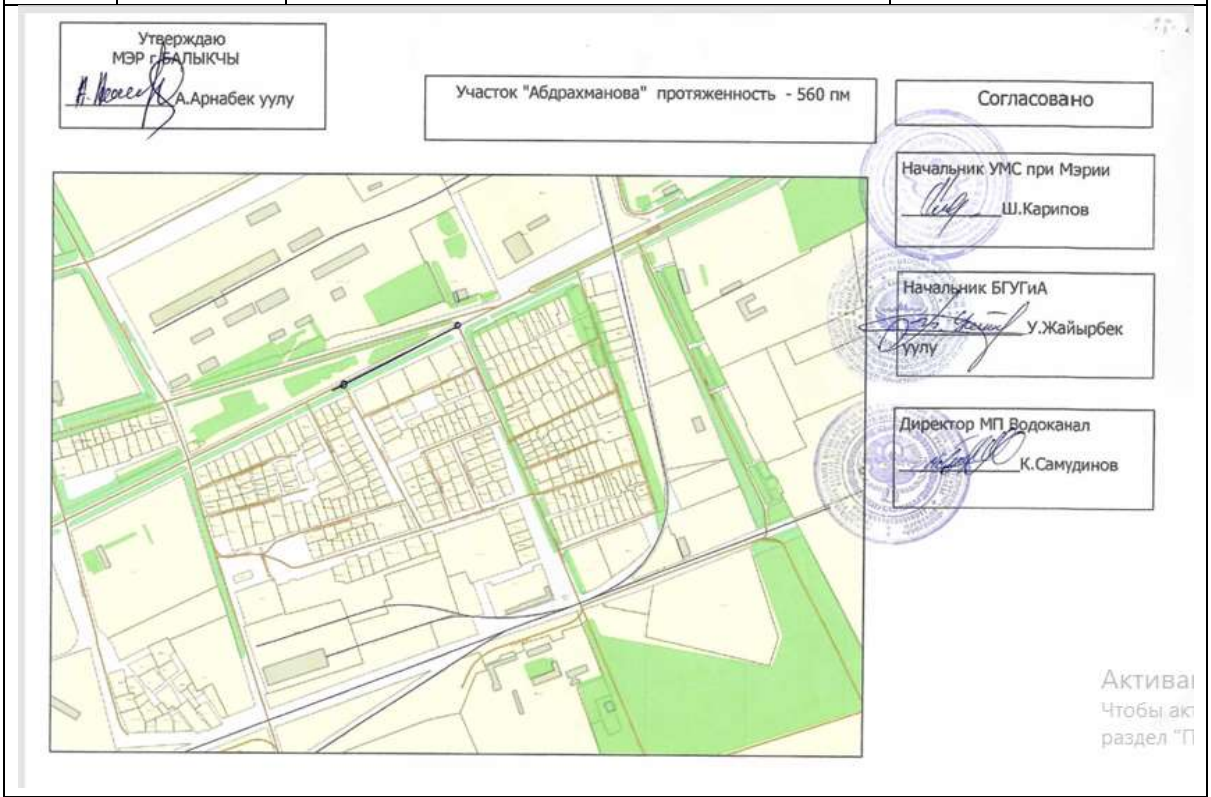
3.2 Description of the project implementation in Balykchy

60. This project involves laying sewage networks using two-layer corrugated sewer pipes (Tu2248-001-73011750-2013) in accordance with the Terms of Reference. The minimum laying depth within the city boundary has been determined based on the requirements of the KR Building Standards 30-01 (2020). According to these standards, the minimum clearance between the water supply and sewer pipelines must be 200 mm if the sewage pipeline is positioned below the water supply pipeline.

Table 8: Proposed additional sewer networks in Balykchy city

Sl.no	Sections	Street Name	Length of Sewerage line installation (m)
1.	Section 1	Bekturova Street. (Sportivnaya Street.)	2148
			
2.	Section 2	Zapadnaya Street	3593
			

Sl.no	Sections	Street Name	Length of Sewerage line installation (m)
3.	Section 3	Sultanova Street. (Pervomayskaya Street.)	2235
			
4.	Section 4	Kadyr-Ake Street (Kalinina)	2798
			

Sl.no	Sections	Street Name	Length of Sewerage line installation (m)
5.	Section 5	Abdrakhmanova Street.	260
			
Total length (m)			**11,034**

	
View of Kadyr-Ake Street	View of Obernaya Kochesu

61. The major scope of works proposed for the additional sewer networks in Balykchy city are

- The excavation for removal of the existing pipelines (if any),
- The laying, jointing and pressure testing of the new pipelines, backfilling and compaction of the trenches
- Construction of the required manholes
- Construction of 3 sewage pumping station (SPS)
- Road restoration works

	
View of Bekturova Street	SPS location at Sportivnaya Street

62. Sewer networks are designed to convey wastewater from the city to the Balykchy Wastewater Treatment Plant (WWTP). Domestic wastewater will flow through the designated pipelines, with two types of networks proposed: (i) gravity sewer networks and (ii) pressure sewer networks.

- Gravity sewer networks will be installed using two-layer corrugated sewer pipes in accordance with TU2248-001-73011750-2013. These polymer pipes are elongated tubes composed of a low-pressure polyethylene layer for protection against damage and a smooth high-pressure polyethylene layer.
- Pressure sewer networks, laid from sewer pumping stations, will utilize PE 100 SDR 17 pipes in accordance with GOST 18599-2001. These pipes are commonly used in the construction of pressure cold water supply systems, electrical networks, sewer systems, and cable channels.

63. During the design of the sewerage networks hydraulic characteristics have been considered according to SNiP 2.04.03-85 "Sewerage External Networks and Structures" clause 2.33, to ensure that the total design flow will cover the prospected block developments adjacent to the designed sewer network. The depth of the sewerage network must ensure that all connections in the neighborhood will be performed satisfactorily. The average depth accepted for laying the sewerage network is up to 3 meters.

64. Besides that, the slopes of the pipelines along the route were determined based on the terrain and on the basis of the permissible flow rates of wastewater, as well as taking into account the location of other underground utilities and standard slopes. The calculated filling in the pipelines of the domestic sewage system, according to SNiP 2.04.03-85 "Sewerage External Networks and Structures" clause 2.40, is taken not more than 0.7 of the pipeline diameters.

65. Due to the terrain features of Bekturova Street, Sultanova Street, and Kadyra-Ake Street, wastewater collection will be conducted via gravity flow, with underground sewage pumping stations installed at each section. Each pumping station consists of a sealed fiberglass tank. The pressure pipelines from these stations are made of polyethylene (PE) pipes, in accordance with GOST 18599-2001, with the following diameters: Ø90 mm on

Sultanova Street, Ø110 mm on Kadyra-Ake Street, and Ø200 mm (in two lines) on Bekturova Street. In the event of an emergency in the pressure section, a distribution manhole will be installed. This manhole will contain shut-off and control valves for switching between the pressure lines. The cross-section of the pump house is provided in the Figure 4.

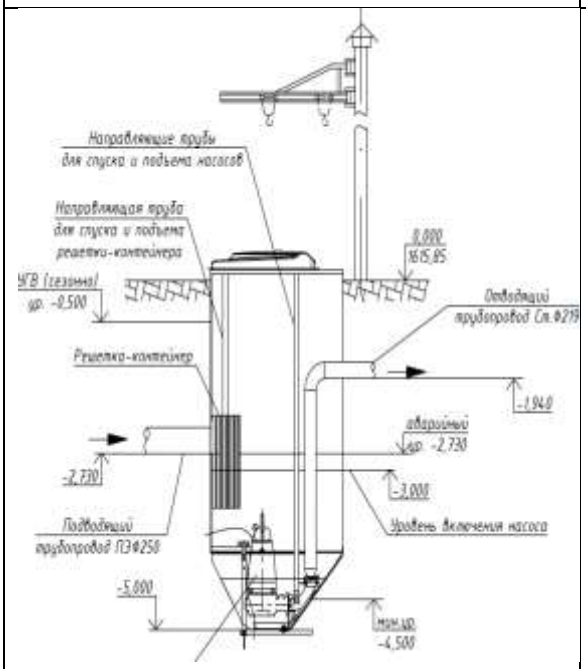
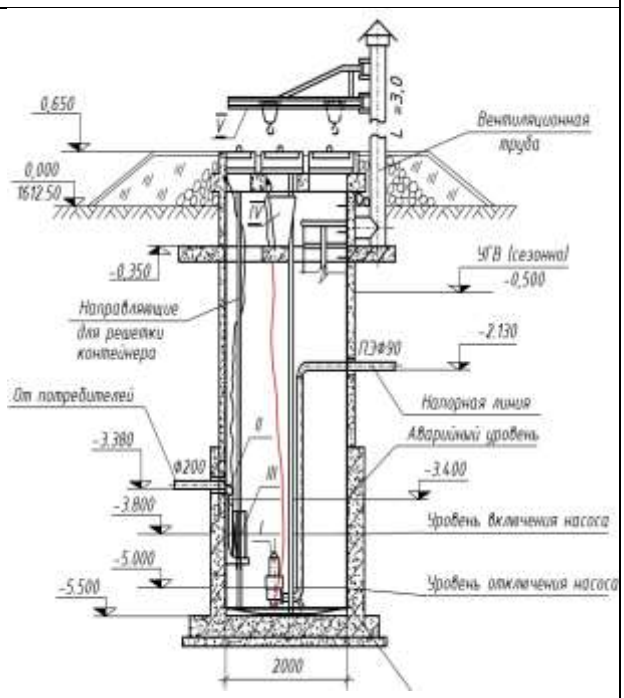
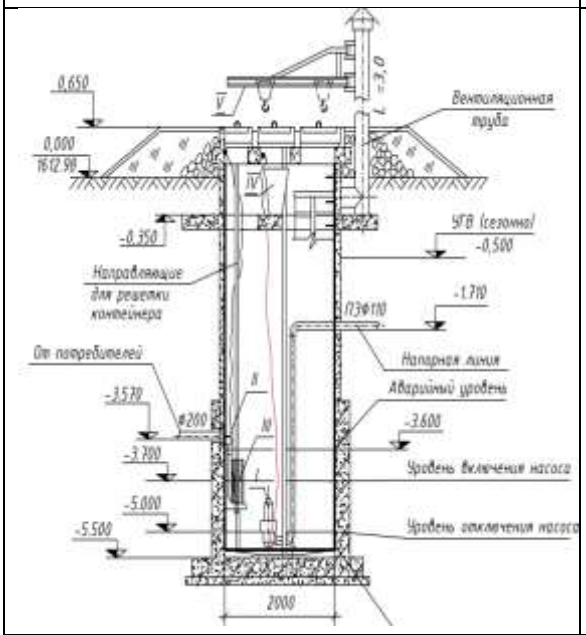
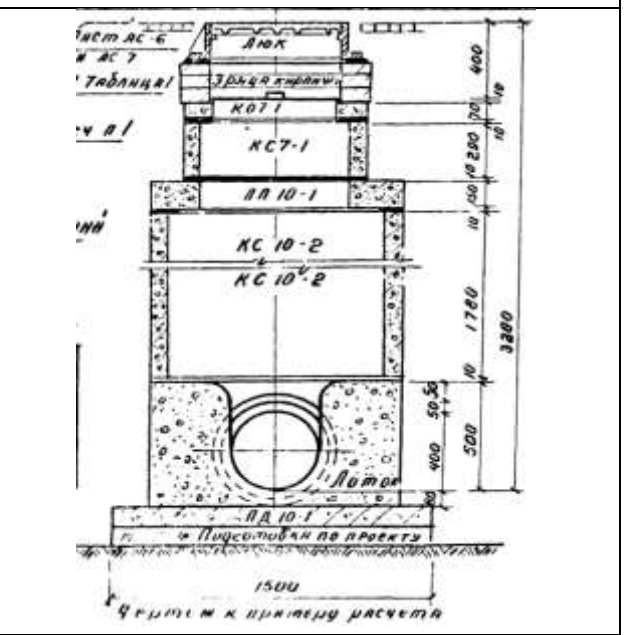
Bekturova Street	Sultanova Street
	
Kadyra-Ake Street	
	

Figure 4: Cross-section for Sewer Pumping Station (SPS) and Manhole

66. Manholes for general usage and for inspection purposes have been designed to ensure the collection of sewage from both sides of the streets, at the intersection points of cross streets and at the points where the route changes its direction. Manholes will be

constructed with precast reinforced concrete, having diameters (D) 1 to 1.5 m, height (H) ranging from 1.4 to 4.5 m, with flume elements having heights (H) from 0.2 to 0.4 m, with necks and hatches (Refer to Figure 4).

3.3 Implementation schedule

67. The project is proposed to be completed within 18 months from the date of signing the contract between the Contractor and the PMO.

4 DESCRIPTION OF THE ENVIRONMENT

4.1 Location

68. Balykchy is a strategically important town located at the western tip of Lake Issyk-Kul in the Issyk-Kul Province of northeastern Kyrgyzstan. It serves as a critical gateway to the entire Issyk-Kul region. Balykchy is a vital transportation hub, connecting major highways and railway routes leading to other parts of the country. According to the 2022 census, Balykchy had a population of 52,225. Its approximate geographical coordinates are 42°28′N latitude and 76°11′E longitude.

4.2 Physical Environment

4.2.1 Physiography

69. Balykchy's physiography is uniquely shaped by its position at the western extremity of the Issyk-Kul basin, a vast intermontane depression cradled within the formidable Tian Shan mountain system. The town itself occupies a relatively flat to gently sloping plain, with an elevation generally matching the average level of Lake Issyk-Kul at around 1,607 meters (5,272 feet) above sea level, gradually ascending to about 1,900 meters on its northern edge. This plain abuts directly onto the western shore of the massive, saline Lake Issyk-Kul, which serves as its most defining natural boundary. To the north, the landscape begins its ascent towards the imposing Kungey Ala-Too range, while the rugged peaks of the Terskey Ala-Too Mountains dominate the southern horizon across the lake.

4.2.2 Topography, Land Use, and Soils

70. The topography of Balykchy is mostly flat to gently rolling, with some elevated areas near the lake and surrounding hills. The city’s proximity to Issyk-Kul Lake provides a moderating effect on temperatures, making it slightly milder compared to other inland regions.

71. As a crucial transportation and industrial hub during the Soviet era, Balykchy's land use reflects its historical and ongoing role.

- **Industrial and Transport Infrastructure**: A significant portion of the city's land is dedicated to industrial facilities (though many have declined since the Soviet collapse), a major railway terminal connecting to Bishkek and the CIS network, and a seaport on Lake Issyk-Kul used for cargo transport. Roads radiate from Balykchy, serving as the gateway to the entire Issyk-Kul region.
- **Residential Areas**: Like any city, Balykchy has substantial residential zones, with an area of housing construction covering about 576.8 hectares within its total area of 3357 hectares.
- **Commercial and Services**: Due to its strategic location, Balykchy supports active trade markets year-round, drawing residents and businesses from the wider Issyk-Kul region. Land is also used for various services, including education and health, and has potential for further industrial and commercial development (brownfield and greenfield investments).

- **Waste Management**: Recent efforts highlight land use for waste management, with the development of a waste sorting plant to improve sanitary and environmental conditions around the lake.
- **Limited Agriculture**: While the broader Issyk-Kul Province has pastures for sheep and horses and some grain/potato cultivation, the immediate area around Balykchy is characterized by its arid nature, suggesting less intensive agricultural land use directly within the city limits compared to other parts of the region.

72. The soils in and around Balykchy are generally characterized as stony and humus-poor. They are often classified as mountain/valley grey-brown desert rocky soils or light grey soils, formed under arid or cold semi-arid climatic conditions. These soils typically exhibit low natural biological productivity. However, some areas contain fertile soils suitable for agriculture, while others have been affected by industrial activity and past pollution.

4.2.3 Climate

73. Balykchy experiences a mid-latitude steppe climate (BSk) under the Köppen classification, characterized by warm summers and cold winters, with relatively low precipitation year-round. During winter (December–February), temperatures drop significantly, ranging from -9.7°C (14.5°F) in January to -1.8°C (28.8°F) in February, with snowfall peaking at 59mm (2.32 inches) in January. As spring arrives (March–May), gradual warming occurs, with temperatures rising from -3.3°C (26.1°F) in March to 13°C (55.4°F) in May, accompanied by increased rainfall, marking the start of the wet season. The summer months (June–August) bring the warmest temperatures, with July reaching 19.6°C (67.3°F), while rainfall peaks in June and July at 51mm (2.01 inches). Autumn (September–November) sees a cooling trend, with temperatures dropping from 14.6°C (58.3°F) in September to 2°C (35.6°F) in November.

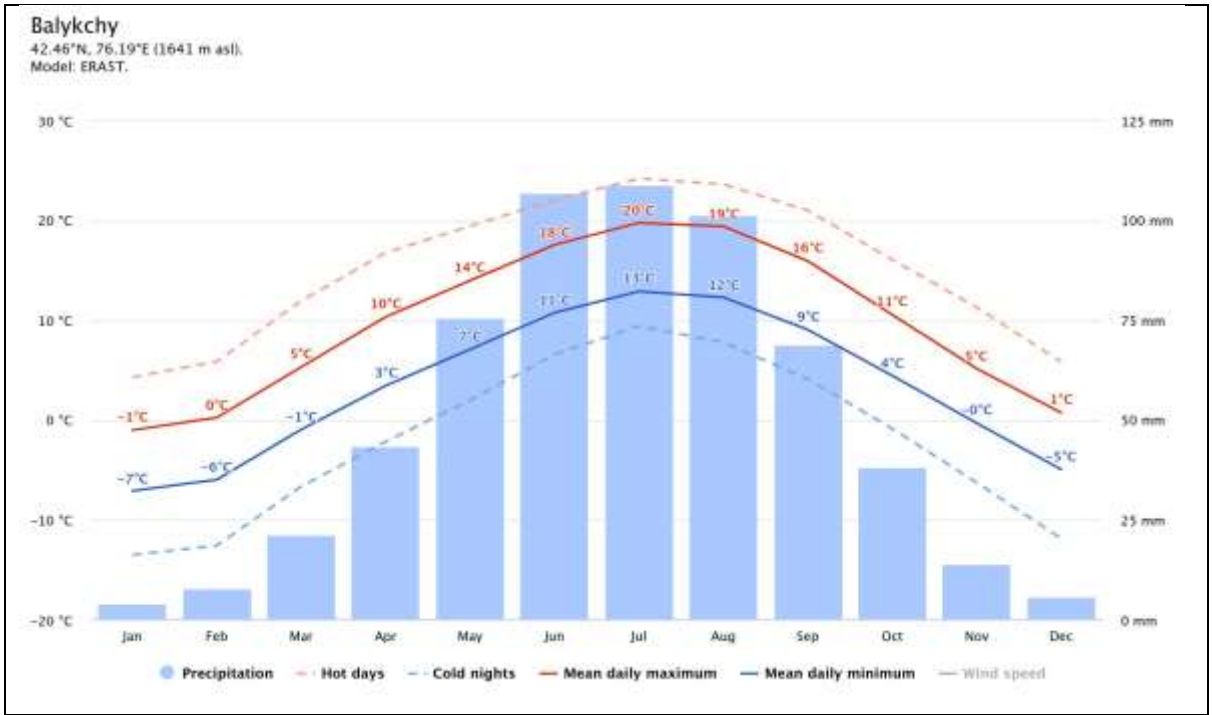


Figure 5: Average Temperature and Precipitation graphs for Balykchy

74. Balykchy is relatively dry, with an average annual precipitation of around 536 mm (21.1 inches). The wettest months are typically June, July, and August, with an average of 16-17 rainy days and higher precipitation amounts (Refer to Figure 5). The driest months are generally January, February, and December, with significantly less rainfall or snowfall. Snowfall is relatively rare in the city itself, with snow cover typically lasting only about 7-10 days and a thickness of 5-8 cm.

4.2.4 Water Resources

75. Balykchy's water resources primarily come from groundwater and surface water sources, supporting both domestic and industrial needs. The city relies on wells and pipelines for water distribution, with groundwater being the main source due to the region's arid climate.

- **Groundwater (Artesian Wells)**: The main source of drinking water for Balykchy's population comes from 16 artesian wells. This is crucial because, unlike some other regions, Balykchy does not have significant open freshwater sources (rivers or streams) directly available for municipal use.
- **Lake Issyk-Kul**: While Balykchy sits on the shore of Lake Issyk-Kul, the lake itself is saline (brackish). Its salinity is approximately 0.6%, much lower than seawater but still too high for direct human consumption without extensive and costly desalination, which is not currently practiced for the city's main water supply. Therefore, Lake Issyk-Kul is not a primary source of drinking water for Balykchy. It is, however, vital for other purposes like water transport (port activities) and as a major natural and tourist attraction.

4.2.5 Water Quality

76. Groundwater/tap water quality in Balykchy lack sufficient data for a definitive assessment. In general, water from artesian wells, which serve as a primary drinking water source, is considered superior to available surface water. Some reports suggest moderate levels of water pollution and accessibility issues[15]. Additionally, the quality of water delivered to consumers has historically been compromised by an aging and inefficient distribution network, raising concerns about potential contamination.

77. Surface water quality in Balykchy, particularly in Issyk-Kul Lake, has been monitored over the years to assess environmental conditions. According to water quality monitoring conducted by the IBRD[16], dissolved oxygen levels exceed the relevant benchmark for fisheries management (6.0 mg/l) and range from 7.17 to 10.12 mg/l, indicating good aeration of the lake. BOD_5 levels are typically below the relevant Maximum Allowable Concentration (MAC) for fisheries management (3.0 mg/l), ranging from 0.32 to 3.20 mg/l. Levels of ammonia, nitrite, and nitrate are all well below or in compliance with the relevant MACs, while heavy metals such as copper, zinc, chromium, cadmium, and lead remain within acceptable limits.

[15] https://www.tapsafe.org/is-balykchy-tap-water-safe-to-drink/
[16] Source: IEE- KGZ: Issyk-Kul Wastewater Management Project, September 2018
.

78. Water quality of the Chu River at upstream and downstream locations relative to the Balykchy Wastewater Treatment Plant (WWTP) was assessed to evaluate potential pollution load attributable to the discharge of treated effluent. Sampling and laboratory analysis were conducted on 13 June 2022 by the Issyk-Kul Interdistrict Center for Disease Prevention and the State Sanitary and Epidemiological Surveillance Public Health Laboratory under the Ministry of Health Care of the Kyrgyz Republic. The results of the analysis are presented in the table below

Table 9: Chu River water Quality Near Balykchy WWTP

No.	Parameters	Units	Upstream	Downstream	MPC* /standards/
1	Temperature	°C	19.0	19.0	≤ 5°C above ambient
2	pH factor	pH	8.3±0.1	8.3±0.1	6.5 – 8.5
3	Suspended solids	mg/dm^3	0.03	0.03	≤ 60 mg/L
4	Permanganate demand	mgO2/dm^3	1.7±0.17	1.5±0.15	≤ 15 mg/L
5	Ammonia (as Nitrogen)	mg/dm^3	<0.05	<0.05	≤ 1.5 mg/L
6	Nitrite- ion ($NO2_2$)	mg/dm^3	0.02	0.025	≤ 0.08 mg/L
7	Nitrate- ion (NO3)	mg/dm^3	1.73±0.25	1.55±0.23	≤ 9.0 mg/L
8	Chloride-ion	mg/dm^3	16.0±2.4	15.5±2.32	≤ 300 mg/L

Source: PMO, Balykchy WWTP

79. Based on the comparative analysis of upstream and downstream water quality data against the Maximum Permissible Concentration (MPC) values established under Kyrgyz national standards, all measured parameters are well within acceptable limits. Temperature remains constant at 19.0°C at both locations, not exceeding the allowable variation of 5°C above ambient. The pH factor is stable at 8.3±0.1, comfortably within the permissible range of 6.5–8.5. Suspended solids are minimal (0.03 mg/dm³) at both points, far below the MPC of 60 mg/L, indicating negligible turbidity. Permanganate demand shows a slight reduction downstream (1.7 to 1.5 mgO_2/dm³), suggesting a minor decrease in oxidizable organic content. Ammonia levels are below detection limits (<0.05 mg/dm³), significantly lower than the MPC of 1.5 mg/L. Nitrite concentrations are low (0.02 upstream, 0.025 downstream), well within the stringent limit of 0.08 mg/L, and nitrate levels (1.73 upstream, 1.55 downstream) are also comfortably below the 9.0 mg/L threshold. Chloride concentrations show minimal variation (16.0 to 15.5 mg/dm³), remaining far below the MPC of 300 mg/L. Overall, the data indicates no adverse impact on water quality downstream, with all parameters demonstrating compliance with regulatory standards and stable environmental conditions

4.2.6 Ambient Air Quality

80. Balykchy's air quality index (AQI) typically ranges from 51 to 100, which falls within the moderate category (refer to Balykchy Air Quality Dashboard – AQI.in). However, $PM_{2.5}$ levels occasionally exceed World Health Organization (WHO) guidelines, indicating that while the air quality is generally acceptable, sensitive groups may experience minor health effects. The primary air pollutants in Balykchy include $PM_{2.5}$ (fine particulate matter), PM_{10} (coarse particles), and occasional emissions of nitrogen dioxide (NO_2)

4.2.7 Ambient Noise Level

81. Noise is not routinely monitored in Balykchy city or Issyk-Kul, and no preexisting baseline data were available during the preparation of this Initial Environmental Examination (IEE). However, similar to air quality, the predominantly rural nature of the basin ensures that noise levels remain low in non-urban areas. Even within the urban parts of Balykchy, it is unlikely that noise levels exceed KR standards.

4.3 Ecological Resources

4.3.1 Habitat types.

82. Balykchy's habitat types represent a fascinating interplay between a unique high-altitude saline lake (Issyk-Kul), a dry semi-arid steppe, and the influence of nearby mountain foothills, all significantly modified by human settlement and infrastructure. The lacustrine and semi-arid steppe are the most characteristic natural habitat types directly surrounding the town. The predominant habitat types found in and around Balykchy are as follows

Table 10: Predominant Habitat Types in Balykchy

Sl.no	Predominant habitat	Details
1.	Lacustrine (Lake) Habitat	• **Lake Issyk-Kul:** This is the most significant and unique habitat. As a deep, saline, and non-freezing high-altitude lake, it supports a specific aquatic ecosystem. • **Littoral Zone:** The shallow, near-shore areas of Balykchy Bay and the adjacent lake provide habitats for various aquatic invertebrates, fish (including both native and introduced species), and are crucial for the lake's unique flora and fauna. • **Pelagic Zone:** The open waters of the lake beyond the immediate shore.
2.	Riparian and Wetland (Limited)	• While the immediate vicinity of Balykchy is dry, there are small rivers and streams that flow into Lake Issyk-Kul. These create limited **Riparian habitats** (areas along river banks) with some associated vegetation. • **Balykchy Bay** itself, particularly the shallow areas and some associated marshy fringes, can function as wetland habitat, especially important for waterfowl. This is reinforced by its designation as part of the Ramsar Site.
3.	Semi-Arid Steppe / Desert-Steppe	• The dominant terrestrial habitat type immediately surrounding Balykchy, particularly to the north and west, is characterized by a cold semi-arid (steppe) environment. • This habitat features stony, humus-poor soils and is dominated by drought-resistant grasses, low shrubs, and cushion plants. Common vegetation types can

Sl.no	Predominant habitat	Details
		include desert thorn cushion plants and sod-grass steppes. • This type of landscape is typical of the drier parts of Central Asian intermontane basins
4.	Urban/Human-Modified Habitat	• As a town, a significant portion of Balykchy's area is an urban habitat. This includes: o **Built-up areas:** Residential, commercial, and industrial zones. o **Infrastructure:** Roads, railways, the port, and associated disturbed land. o **Green spaces:** Parks, gardens, and tree-lined streets, which are often composed of introduced species but provide micro-habitats for urban wildlife.
5.	Mountain Foothills	• To the north, beyond the immediate steppe, the terrain rises into the foothills of the Kungey Ala-Too range. These transition into more varied mountain habitats at higher elevations, including: o **Mountain Steppe:** Higher elevation grasslands. o **Shrublands:** Patches of deciduous shrubs. o **Forests (limited nearby):** While not extensive directly around Balykchy, the broader Issyk-Kul basin and higher mountain slopes support spruce, juniper, and some deciduous forests, especially on the wetter eastern and northern slopes of the ranges. These contribute to the regional habitat diversity accessible from Balykchy

4.3.2 Vegetation

83. Balykchy's vegetation pattern is predominantly characterized by desert-steppe communities adapted to arid conditions, with limited riparian zones. While the immediate area lacks natural forests, the broader influence of the surrounding Tian Shan mountains means that more diverse mountain steppe and coniferous forest ecosystems are present at higher elevations.

Table 11: Vegetation Pattern in Balykchy

Sl.no	Vegetation Pattern	Details
1.	Desert-Steppe / Semi-Arid Steppe (Dominant in Immediate Surroundings)	• The most prevalent vegetation type directly in and around Balykchy, particularly on the lower, flatter plains, is desert-steppe or semi-arid steppe. • This landscape is characterized by sparse, drought-resistant vegetation adapted to low precipitation, stony soils, and strong winds.

Sl.no	Vegetation Pattern	Details

		• Dominant plant groups typically include:
		  ○ *Chenopodiaceae* (Saltbushes/Goosefoots): Many species in this family are salt-tolerant (*halophytes*) and thrive in arid, often saline, conditions.
		  ○ *Artemisia* (Wormwood/Sagebrush): Various species of Artemisia are characteristic of steppe and desert environments, known for their aromatic foliage and resilience to dry conditions.
		  ○ *Poaceae* (Grasses): Drought-resistant grasses form a significant component of the steppe, often forming tussocks or sparse cover. Examples could include fescue (*Festuca*) and feather grasses (*Stipa*) at higher, less arid parts of the steppe.
		• There is a notable absence of natural trees in the immediate vicinity of Balykchy due to the arid conditions. Any trees present within the town are typically planted for landscaping.
		• In spring and early summer, there can be a temporary bloom of ephemerals (plants with very short life cycles) that take advantage of brief periods of moisture

2.	Riparian/Wetland Vegetation (Limited but Important)	• Along the very limited small streams or rivers that flow into Lake Issyk-Kul near Balykchy, and in the shallow fringes of Balykchy Bay, there are small patches of riparian or wetland vegetation. • These areas support moisture-loving grasses, reeds, sedges, and possibly some willows or poplars if water availability is consistent. These are crucial for local birdlife, especially waterfowl.
3.	Mountain Steppe and Forest (at higher elevations, further from Balykchy)	• **Mountain Steppe**: At higher elevations, the semi-arid steppe transitions into more typical mountain steppe, which can be richer in grass species and forbs. • **Forests**: Further up in the mountains, particularly on the northern, moister slopes, one begins to find coniferous forests, primarily dominated by Tien Shan Spruce (*Picea schrenkiana*) and Pine (*Pinus*). These forests are not directly adjacent to Balykchy but are part of the broader regional vegetation pattern influencing the basin. Palynological studies (pollen analysis) indicate that pollen from these mountain forests can be transported over long distances into the basin
4.	Urban Greenery	• Within the town of Balykchy itself, human intervention has created urban green spaces. These consist of

Sl.no	Vegetation Pattern	Details
		planted trees along streets, in parks, and in gardens (e.g., poplars, elms, fruit trees), as well as cultivated shrubs and flowers. This planted vegetation relies on irrigation and contrasts sharply with the natural desert-steppe.

84. The project entails the uprooting and felling of a total of 34 trees, primarily of the *Populus species* (Poplars). These will be replaced through the planting of agreed-upon species in coordination with the city administration. All activities will be carried out in full compliance with the approved Site-Specific Environmental Management Plan (SSEMP), ensuring minimization of tree clearance, implementation of compensatory afforestation measures, and reinstatement of road surfaces in accordance with original design specifications.

4.3.3 Fauna

85. The fauna of Balykchy offers a glimpse into the diverse wildlife of the Issyk-Kul basin (Refer Appendix 3 for IBAT study), with particular emphasis on its rich avian life and unique aquatic species. The typical fauna found in and around Balykchy are as follows

- **Avian fauna (Birds)** in Lake Issyk-Kul, particularly in Balykchy Bay, is of global significance and has been recognized as a Ramsar Site (Wetland of International Importance). This designation highlights the bay's critical role as a wintering and migratory stopover for numerous bird species. Some of the important bird species are Whooper Swan (*Cygnus cygnus*), Red-crested Pochard (*Netta rufina*), Common Pochard (*Aythya ferina*), Common Coot (*Fulica atra*), Mallard, Teal, Grey Duck, and White-headed Duck (*Oxyura leucocephala*), Greylag Goose (*Anser anser*), Black-necked Grebe (*Podiceps nigricollis*), Dalmatian Pelican (*Pelecanus crispus*), Flamingo (*Phoenicopteridae*), White-tailed Sea Eagle (*Haliaeetus albicilla*).
- **Steppe and foothill birds** are commonly observed in the drier areas surrounding Lake Issyk-Kul. Some of the most frequently seen species include: (i) Larks – Indian, Crested, and Steppe Pipit (ii) Wheatears – Common and Desert Wheatears (iii) Partridges – Bearded Partridge (iv) Little Owl – A characteristic nocturnal species (v) Birds of prey – Kestrels, Buzzards, and various harriers and eagles soaring over the landscape (vi) Pheasants – Found in coastal thickets, particularly among sea buckthorn and reeds. These birds contribute to the rich biodiversity of the region, making it an important habitat for avian species
- **Aquatic Fauna (Fish in Lake Issyk-Kul)**: Lake Issyk-Kul is home to a unique fish fauna, including endemic species:
    - **Endemic Species:** There are seven endemic fish species found only in Issyk-Kul, such as the Issyk-Kul Dace (*Leuciscus bergi*) and Issyk-Kul Minnow (*Phoxinus issykkulensis*). Some endemic subspecies also exist, like *Gymnodiptychus dybowskii lansdelli* (*lacustrine osmans*).

- **Native Species:** Other native fish include various loaches and gudgeons.
- **Introduced Species:** Several fish species were introduced, some of which have unfortunately outcompeted native species or altered the ecosystem (e.g., pike perch, common carp, rainbow trout).
- **Crustaceans and Invertebrates:** The lake also supports a diverse range of invertebrates that form the base of the aquatic food web.

- **Mammals (Steppe and Foothills):** While large, charismatic mammals are typically found in the higher, more remote mountain areas of Kyrgyzstan, the steppe and foothills around Balykchy support a variety of smaller mammals adapted to drier conditions. Among the rodents and lagomorphs, common species include the Tolai Hare (*Lepus tolai*), Ground Squirrels, Gerbils (such as the Tamarisk Gerbil and Red-tailed Gerbil), Jerboas (e.g., *Siberian Jerboa*), Hamsters, and Marmots (including the Grey Marmot and Long-tailed Marmot). The region also hosts small carnivores, such as the Red Fox (*Vulpes vulpes*), Corsac Fox (*Vulpes corsac*), Least Weasel (*Mustela nivalis*), and Asian Badger. Additionally, Muskrats and Wild Boars inhabit the area, while domesticated animals, including herds of horses, sheep, goats, and cattle, are a common sight in the surrounding pastures.

4.4 Socio-Economic Environment

4.4.1 Population

Balykchy's population data, primarily from the 2022 census, indicates a resident count of 51,487 people, the male population in is 25,533 and the female population is 26,692. This indicates that females slightly outnumber males in Balykchy. Though some figures including closely associated areas might slightly exceed this. This number reflects a notable resurgence in population after a period of stagnation or slight decline following the Soviet collapse, demonstrating growth from its 1989 peak of 42,438. Demographically, Balykchy exhibits a relatively young age structure, with approximately 34.1% of its population under 15 years old and about 59.2% within the working-age bracket (15-64 years), while females slightly outnumber males. Historically, the city has maintained a multi-ethnic composition, with Kyrgyz constituting the clear majority. The ethnicity Composition of Balykchy is (i) Kyrgyz (Majority – 84.5%), (ii) Russians (11%), (iii) Kazakh (0.9%), (iv) Uzbek (0.8%), (v) Ukrainian (0.6%) and (vi) tatar (0.5%) and Other groups (1.7%).

4.4.2 Economy and Employment

86. Historically, Balykchy was a major **industrial and transport center** during the Soviet era. Its economy centered on wool and crop processing, lake shipping, and serving as a crucial rail terminal and road junction. However, with the collapse of the Soviet Union, most of its industrial base, including its main employer, a steamboat factory, along with grain silos, meat packing factories, and cement works, ceased operations or became derelict. Today, Balykchy's economy is re-emerging, primarily driven by:

- **Transportation and Logistics:** Its strategic location at the confluence of major roads (connecting to Bishkek, the Issyk-Kul Ring Road, and towards China) and as the rail terminal for the line from Bishkek, alongside its port on Lake Issyk-Kul, makes it a critical

transportation and logistics hub. This fuels active trade markets year-round. There are also plans for the construction of the Balykchy-Kochkor-Kara-Keche railway, which would further boost its logistical importance.

- **Food Processing:** The city retains a focus on the food industry. There are various private enterprises involved in the production of flour, bran, macaroni, bakery items, wine, vodka, soft drinks, tinned fruits and vegetables, pastry, meat products (tinned and cooked), and dairy products (cheese, sour cream, curd).
- **Services and Tourism (Gateway):** While not a primary tourist resort itself like Cholpon-Ata, Balykchy serves as the gateway to Lake Issyk-Kul. This role supports a growing services sector, including hotels, restaurants, and various small businesses catering to travelers and local residents. There is potential for further development in this sector.
- **Construction Materials:** Some enterprises still operate in the production of construction materials, such as concrete items and potentially claydite gravel.
- **Renewable Energy (Emerging):** A significant new development is the laying of the foundation for Kyrgyzstan's first wind power plant near Balykchy. This 100-megawatt project is expected to generate substantial electricity and create jobs during construction and operation, positioning Balykchy as a future hub for renewable energy.

87. **Employment:** Balykchy's workforce, comprising 30,911 individuals aged 15-64 (59.2% of the population), is primarily engaged in the sectors mentioned above. While specific, granular employment data for Balykchy isn't always public, general estimations from regional and older city profiles suggest employment distribution:

- **Services:** A large portion of the workforce is involved in services, including trade, public administration, education (around 1,200 employees), and health (around 610 employees).
- **Industry:** While less dominant than in the Soviet past, the food processing, light manufacturing, and construction material industries still employ a significant number of people (estimated around 3,800 in older data).
- **Transportation:** Employment in railway operations, port activities, and road transport is substantial due to the city's logistical importance.
- **Informal Sector:** A notable portion of the adult population may be involved in the informal sector, including small-scale trade and casual labor.
- **Unemployment:** The unemployment rate in the broader Issyk-Kul Oblast was 5.5% in 2022, suggesting that while employment opportunities exist, there is a segment of the labor force seeking work.

4.4.3 Cultural Heritage and Historical Environment

88. Balykchy, while serving as a strategic transit point and a gateway to the more popular tourist resorts on Lake Issyk-Kul, has its own share of cultural heritage and historic elements that reflect its past. Its history is tied to its role as a fishing and transport hub, which evolved from a small settlement in the late 19th century. Some aspects of Balykchy's cultural heritage and historic monuments are:

- **Balykchy Museum of Local Lore (Gorodskoy Muzey)**: This is the primary institution within the city dedicated to preserving and showcasing its history and cultural heritage. It houses collections that narrate the story of the town and the surrounding regions, from

ancient times through the Soviet era to present-day Kyrgyzstan. Visitors can find artifacts, photographs, and exhibits on archeological finds, local traditions, and natural history.

- **Soviet-Era Architecture and Monuments:** Balykchy, once a key industrial and transport hub during the Soviet era, still retains much of its Soviet-era architecture. Walking through the city, one can observe buildings that reflect its historical significance, with remnants such as statues and images of Vladimir Lenin, as well as old inscriptions on structures, offering a nostalgic glimpse into the past especially for older residents.
- **Religious Sites:** Balykchy is home to an Orthodox church and a mosque, reflecting its multi-ethnic population and the religious diversity that has coexisted in the region for a long time. These structures hold cultural and historical significance for their respective communities.
- **Memorial to Pyotr Petrovich Semyonov-Tyan-Shansky:** There is a monument dedicated to Pyotr Petrovich Semyonov-Tyan-Shansky, a famous Russian geographer and explorer who significantly contributed to the study of the Tian Shan mountain range and the Issyk-Kul region in the 19th century. His monument signifies the historical importance of exploration and scientific study in the area.
- **Role on the Great Silk Road (Historical Context)**: While Balykchy itself didn't host major ancient cities, its location was strategic on a branch of the Great Silk Road. It served as a transit point and resting place for caravans, contributing to its early development as a settlement. The modern roads passing through Balykchy still follow these ancient trade routes.

89. While specific ancient ruins within Balykchy are limited, its cultural heritage is deeply intertwined with the broader Kyrgyz nomadic traditions and the history of the Issyk-Kul region:

- **Nomadic Heritage:** The region around Balykchy, being part of Kyrgyzstan, embodies rich nomadic traditions, which are evident in cultural practices, handicrafts (like felt-making), and the general lifestyle of some rural inhabitants.
- **Fish Culture:** The very name "Balykchy" translates to "fisherman," highlighting its historical and cultural connection to fishing in Lake Issyk-Kul. The local fish market and the tradition of smoked fish are part of its unique cultural fabric.
- **Local Hospitality:** Like much of Kyrgyzstan, Balykchy offers a glimpse into Kyrgyz hospitality and the warmth of its local communities.

5 ANALYSIS OF ALTERNATIVES

5.1 Evaluation of Without Project Option and With Project Options

90. Under the “Without Project Option”, the project will not be implemented, hence there will be no impact on the components of the environment and social environment during the construction period. But at the same time, the positive, lasting effect from the construction of sewer networks will not be realized.

91. Under the “With Project Option”, the expansion of the sewerage network in Balykchy / Construction of a new sewerage network along with three sewage pumping stations will be implemented. During the construction of a sewage network, the following impacts on environmental components may occur

- **Atmospheric air/ ambient air quality**. The impact on the air quality is predicted only at the time of construction, especially during the trenching works, earthmoving (excavation, grading), concrete cutting, grinding, demolition activities, unpaved roads and material handling
- **Noise and vibration**. The source of noise and vibration in the construction site are from the (i) heavy machineries (including excavators, bulldozers, jackhammers, cranes, etc), (ii) Power tools (Concrete cutters, drills etc), (iii) Vehicle traffic: Trucks delivering materials or hauling waste, and (iv) Demolition activities (Breaking concrete, tearing down structures)
- **Soil**. The impact on soil is expressed in damage of the soil top due to the destruction of the road and going out of vehicles beyond easement area.
- **Flora and fauna**. The impact on flora and fauna will be minor. However, during the site clearance, it involves cutting or uprooting 34 trees, shrubs, and grasses, which can lead to loss of native species and habitat fragmentation.

92. Potential negative impacts can be avoided either through design and construction planning or through proven and established mitigation measures. Very few potential negative impacts can be considered long-term in nature, and they have ready-made, easy solutions. It is important to note that in all cases, planned project activities should be carried out on existing sites that are currently problematic both ecologically and socially, or because of what they do not do (i.e. ensure safe, efficient and environmentally friendly wastewater disposal services) or because of what happens there (i.e. the discharge of virtually untreated wastewater directly into fields, pastures, streets and surface water bodies). Overall, the impact of the Project - provided that the identified potential negative impacts are effectively mitigated - are likely to be very positive relative to existing conditions. To prevent or minimize potential negative impacts, a number of specific mitigating measures are recommended to address the identified negative impacts. These mitigation proposals are being carried forward for inclusion in the project's Environmental Management Plan (EMP).

6 ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

93. Based on the site assessment and ADB SPS 2009 (Refer REA Checklist (Appendix 1)), the project has been classified as Category "B" for environment,[17] as impacts are anticipated to be less adverse, site-specific, mostly reversible, and in most cases can be mitigated. This section includes identifying potential impacts, analyzing their nature and severity, and determining appropriate mitigation measures.

94. The assessment findings are based on all mitigation measures presented in this document being fully implemented as part of the project implementation. All mitigation established in the report are considered to be committed mitigation once the report has been approved by ADB. The IEE and EMP will be a part of bidding documents and commitments on environment protection will be reflected in the contract.

95. The mitigation measures provided in this IEE shall be considered as high level in many cases and will need to be refined by the contractor during the development of Site-Specific Environmental Management Plan (SSEMP). The prepared SSEMP shall be reviewed and approved by the Design Supervision Consultants (DSC), without the approval of the SSEMP, the contractor shall not initiate the construction activities in the project site.

6.1 Assessment of Environmental Impact

96. The proposed assessment will use a matrix for determining the significance of impact. Significance is therefore a function of the value or sensitivity of the receptor being

Table 12: Matrix for Determining the Significance of Environmental Impacts

	International/ Extreme	National/ High	Regional/ Moderate	Local/Low
Major	HIGH	HIGH	MEDIUM	LOW
Moderate	HIGH	MEDIUM	MEDIUM	LOW
Minor	MEDIUM	MEDIUM	LOW	NS
Negligible	NS	NS	NS	NS

97. The impact assessment has utilised the following semantic definitions of the significance terms i.e. High, Medium and Low. They are based on the terminology used in international principles and guidance and on the geographical context of the effect:

- High – An environmental effect that has importance at international or national level and is irreversible or unprecedented.
- Medium – An environmental effect that has importance at a regional scale and/or one that can be readily reversed with intervention and is limited to the site boundary and immediate surrounding area.

[17] Category A: anticipated to have significant adverse environmental impacts that are irreversible, diverse or unprecedented, requiring a full-scale environmental impact assessment. Category B: anticipated to have environmental impacts that are less adverse, site-specific, mostly reversible, and in most cases, can be mitigated. An IEE including an EMP is required. Category C. is used for a project expected to have minimal to no adverse environmental impacts. Given the low levels of environmental impact from work associated with a rehabilitation project (much of the alignment will only require relaying of the surface layer) and the relatively low numbers of sensitive receivers adjacent to the alignment this project is considered to fall into Category B requiring an IEE and EMP to be prepared.

- Low - An environmental effect that is only important in a local context, which is readily mitigated, and it occurs only within the boundary of the project; and
- NS – An environmental effect that is considered non-significant

98. Significant adverse effects occur where valuable or sensitive receptors, or numerous receptors, are subject to impacts of considerable magnitude and duration. Some effects will be temporary, others are permanent in nature, and these will be stated in the assessment.

Table 13: Assessment of Impacts for Archaeology[18] – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	Mitigation measures	Sig. after Mitigation
AR01	Risk of encountering unknown archaeological resources or artefacts	Potential unknown below ground artefacts	National/High	Average	• Development and implementation of Chance Findings Procedure as a part of the EMP.	Low

Table 14: Assessment of Impacts for Air Quality – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	Mitigation measures	Sig. after Mitigation
AQ01	Localised changes in ambient air quality due to operation of mobile and stationary equipment burning fossil fuels.	Local population health	National/High	Average	• Contractor to maintain all fossil fuel burning equipment in accordance with manufacturers recommendations • Contractor to use good quality equipment with minimum emissions and avoid using old equipment and vehicles • No idling of equipment when not in use	Low
AQ02	Emissions from mobile and stationary equipment on sewer lines, affecting local air quality standards	National Air Quality Standards	National/High	Low	• Contractor to use good quality equipment with minimum emissions and avoid using old equipment and vehicles • No idling of equipment when not in use	Low
AQ03	Fugitive dust emissions from works, construction traffic causing dust soiling and increase in $PM_{2.5}$ and PM_{10}	Local population health	National/High	Average	• Construction traffic speed limit when passing through populated areas • Water of dusty-unpaved roads and populated areas	Low

[18] Refer Archaeological survey – Appendix 1

Table 15: Assessment of Impacts for Community Safety – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
CS01	Increased risk of road traffic accident due to construction traffic movements	Local population health	National/High	Average	• Actively enforce speed limits for Project vehicles. • Awareness program for local population prior to works commencing, including visits to local schools • Development of Traffic management Plan as part of the EMP • Drivers to be fully competent and authorized to drive heavy loads vehicles and to receive specific training. • Ensure all drivers have completed training and are licensed to drive the vehicles they are operating. • Limits to be adopted and enforced for maximum number of work hours to avoid overtiredness. • Minimise the number of road movements as much as practicable, maximising capacity of vehicles. • Schedule road movements to minimise impact on existing road users. • Zero tolerance policy for drug and alcohol use amongst all workforce. • Use road signs at site areas where required	Low
CS02	Impacts on health of dust and noise emissions	Local population health	National/High	Average	• Avoid using older vehicles and machinery, with significant noise and air emissions. • Build trenches in short lengths; refill quickly; remove excess spoil quickly. • Water unpaved site roads and large areas of exposed soil thrice daily in dry weather.	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• Ensure that no noise above 70 dB(A) is audible for significant periods within 50 m of any construction site and • Cease activity producing significant noise at night (19pm-07am), Sundays & Public Holidays	
CS03	Damages to utilities by excavation and temporary access cut-off to properties	Local population health	National/High	Average	• Require contractors to carry out a utility survey before construction and take action during construction to minimize impact on utilities and attend to any damage. • Provide temporary access/pedestrian bridge during construction, if required. • The Contractor and PIU shall held a coordination meetings, and agreement has been obtained with Municipality; prior to any construction beginning on the maintenance site.	Low

Table 16: Assessment of Impacts for Worker Safety – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
WH03	All construction works carry risk to the health/safety of workers Injury or fatality of workers due to insufficient controls on work activities and processes	Occupational Health and Safety	National/High	Average	• Contractor shall develop Method Statements for all major activities and include health and safety risk assessment for each of these activities • Contractor shall provide health and safety induction training for all staff, and specific training for staff working on work sites. • Contractor shall supply to site workers, free of charge all necessary Personal Protective Equipment (PPE) to include as protective footwear, high visibility vests, safety helmet and hearing protection. For specific tasks other PPE may be required, for example welding masks, hot work gauntlets.	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• Contractor will prepare and implement a Health & Safety (H&S) Plan for all work sites and activities (including offsite) including fatal case. • Contractor will train and assign a specialist as Health and Safety officer as responsible person for the duration of the project. • Provision of health care and first aid - Contractor shall ensure that adequate first aid supplies and trained first aiders are available. • Keep records of accidents; review periodically; amend procedures if needed	
WH04	Potential presence of asbestos piping - risk of worker exposure to asbestos fibres	Occupational Health and Safety	National/High	Average	• If asbestos is encountered, Contractor needs to inform the PIU, PMO • Contractor shall develop an Asbestos Management Plan • Contractor to conduct the worker awareness of asbestos and risks associated with handling such material	Low
WH05	Handling complaints	Safety related grievances	National/High	Average	• Maintaining of register of complaints from local population and employees during project work. The details of the complaint, the contact information of the person filling the complaint and actions to be taken will be registered.	Low

Table 17: Assessment of Impacts for Waste Management – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
WM01	Inappropriate management and disposal of waste during construction	Environmental Protection	Regional/ Moderate	Low	• Prior to start of construction, develop an inventory of waste fractions expected to be generated during construction	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• Get approval for disposal routes and sites by Municipality of Balykchy	
WM02	Inappropriate management and disposal of waste during construction affecting water courses	Water courses - water quality	Regional/ Moderate	Low	• EMP to include appropriate waste management protocols • Location of appropriate waste storage facilities at all work sites • Worker induction and regular tool box talks to make all staff aware of zero waste discharge to environment • Zero tolerance of waste entering water course or flood plain areas, this will include all materials (e.g welding rod stubs, wood, plastics and metals) • Ensuring cleanliness of work sites	Low
WM03	Poor waste management practices resulting in direct and indirect effects on project area environment	Environmental Protection	Regional/ Moderate	Low	• All hazardous waste containers to be labelled clearly with a waste hazard identification label. • Contractor will establish a demarcated temporary waste storage area where waste is stored pending transport to final treatment/disposal location. • Contractor will put in place measures to minimise waste, i.e. procure materials with less packaging, refrain from ordering excess materials, make arrangement with suppliers to return surplus, unused materials. • Contractor will take measures to prevent the disposal, burying and burning of waste on-site, roadside dumping and illegal land filling. • Burning of waste is prohibited by the law and not allowed; • Contractor workforce will be trained in the requirements of the Waste Management Plan, particularly with regards to waste segregation, storage and handling.	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• Indroduction of recycling/recovery initiatives to reduce waste sent for disposal. • Contractor will practice good housekeeping on site. • Waste storage containers will be secure, undamaged and appropriately labelled. • Waste to be segregated and containers clearly labelled specifying which type of waste is contained to assist with identifying appropriate disposal routes and in case of accidental spills or loss to the environment. • Waste to be stored in appropriate containers or skips and removed for treatment/disposal at a frequency so as to avoid the build-up of waste on site. • Waste will be collected and transported under cover of a Waste Collection Log and Waste Manifest.	

Table 18: Assessment of Impacts for Water Resources – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
WR01	Potential for contamination of water course due to release of hydrocarbons or oils and grease etc	Water courses - water quality	Regional/ Moderate	Low	• Contructor to conduct construction works strictly within the allowed bounderies • Contractor to conduct risk assessment on all activities near to water courses and apply appropriate controls. • No refuelling of vehicles or equipment to take place within river beds or within 25 metres of the edge of the water course.	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• It is not allowed to wash vehicles or other machinery in surface waters or on their banks, or to carry out any work that could be a source of water pollution. • In case of accidental spills of oil products, immediate works to prevent pollution are necessary. The contaminated soil layer must be removed/ collected and placed at an authorized landfill	
WR02	Site rainwater runoff can wash away residues, garbage, leaves, grease, etc., thereby potentially polluting nearby surface water	Water courses - water quality	Regional/ Moderate	Low	• Store all liquid/solid waste properly above ground to avoidspills/leaks; Store Haz-Mat, e.g. fuels, chemicals, and hazardous waste, in bunded areas to avoid leaks escaping to the ground or nearby surface waters. Provide ample natural ventilation; Develop spill response procedures and provide spill response kits at all Haz-Mat storage areas and work sites;	Low
WR03	Impacts due to mining of construction materials	Water courses - water quality	Regional/ Moderate	Low	• Procure construction material (sand, gravel, aggregate, etc) only from government approved existing quarry sites; Minimize extraction of construction materials from rivers and stream beds; Maintain a material entry log book at the site indicating material, source and quantity	Low
WR04	Unsafe transportation of wastewater by vacuum trucks	Water courses - water quality	Regional/ Moderate	Average	Use only machinery that has passed technical inspection and is in good condition.	Low

Table 19: Assessment of Physical Factor impacts/Noise and vibration – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
NO01	Noise disturbance due to equipment and construction activities.	Local population health	National/High	Average	• Awareness program for local residents prior to commencement of works	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• Limitation of working hours for normal construction activities near to settlements times to be set out in the SSEMP • Avoid using older vehicles and machinery, with significant noise and air emissions. • No idling of equipment when not in use • Haul materials to and from the site in off peak traffic hours; halting work during excessive winds; no truck movements in inhabited areas between 22:00 and 6:00. Minimize noise whenever possible. • Prohibiting works in the night hours (from 22:00 PM to 6:00 AM) and on weekends or holidays • Equipping the personnel with personal protecting equipment (earmuffs) when required	

Table 20: Assessment of Impacts for Socio-economics – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
SE03	Positive effect - short term employment of local people, this can offset some of the disturbance experienced by people living near construction sites.	Local incomes	Regional/ Moderate	Low	• Develop plan for local recruitment of workers for project - train as required • Employ at least 30% of workforce from the vicinity of construction works if possible	Positive - Low

Table 21: Assessment of Impacts for Soil and Ground Water – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
SG01	Accidental spillage of hydrocarbon affecting local ground water	Ground Water	Regional/ Moderate	Low	• Fuels should be stored in good quality above ground tanks placed on an impervious surface with a spill containment bund capable of containing 110% of the tank capacity • No onsite refuelling within or adjacent to water courses	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• On site refuelling of equipment and vehicles shall utilise a drip tray to prevent hydrocarbons entering the ground. • Maintain, repair & refuel all vehicles/machines at chosen premises, not on site.	
SG02	Potential damage or loss of soil resource due to erosion or improper handling.	Soils	Regional/ Moderate	Low	• Soils shall be protected from water and wind erosion. Removal of vegetation shall be minimised • Top soil resources should be stripped from site and stored for later restoration Stock piles should be no more than 1.5 m in height and shall be protected from erosion either by seeding with quick growing non invasive grass mix or covered • Valued topsoil shall not be compressed by tracking of equipment and machinery.	Low

Table 22: Assessment of Impacts for Biodiversity – Construction Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
TE01	Potential impacts on trees/vegetation adjacent to work sites	A total of 34 trees, predominantly belonging to *Populus spp*. (Poplars), are slated for removal within the designated RoW of the proposed sewer network	Local/Moderate	Low	• Contractor to develop a tree protection plan as part of the EMP. This will as a minimum set out restrictions on tree removals, stock piling soils over tree root systems, excessive compression of soils around tree root systems. • Prior to any clearing of vegetation, make a species inventory of the area to be cleared. Use vegetation inventory to identify appropriate local plant species to be used for revegetation. • Avoid tree removal unless justified on engineering, and it is agreed by the competent state organization. Obtaining of preliminary permits from self-governance and planting of new plants in coordination with local self-governance, vodokanals and environmental authorities	Low

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
					• Worker awareness training to include protection of trees. • No tree cutting for fuel to be allowed • Prohibition of the movement of vehicles and construction equipment outside roads	
TE02	Loss of habitat, and indirect impacts such as noise, lighting, visual disturbance during construction	Breeding birds	Local	Low	• Do not conduct vegetation clearance during breeding season of species present Monitor nesting activity during noisy construction procedures near to nesting habitats • Organization of storage facilities for construction materials in a territory with less vegetation, prevention of cluttering of the construction zone with garbage, pollution with fuels and lubricants • Moving of construction equipment on designed roads	Low
TE03	Introduction of invasive species and predators	Functioning of ecosystem	National	Average	• All equipment to be used on site shall be cleaned thoroughly prior to delivery to project site. Soils and possible seeds from past projects shall be removed from all equipment.	Low
TE04	Increase in hunting pressure, predators etc.	Functioning of ecosystem	National	Average	• No workers will be allowed to hunt animals within the project site or surrounding areas. Work camps if any on site shall not allow domesticated cats or dogs to be kept. • Appropriate control of vermin such as rats and house mice shall be carried out by the contractor at worker camps and site office facilities.	Low

Table 23: Assessment of Impacts for Socio-economics – Operation Phase

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
SE01	Large portion of population in Balykchy will receive an	Local incomes	Regional/ Moderate	Average	Consider development of sustainable community tourism plan.	Positive - Medium

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
	adequate access to centralized sewerage system.					

Table 24: Assessment of Impacts for Air Quality/Odour – Operation

Impact ID	Description	Type of impact	Significance/sensitivity level	Sig. before mitigation	mitigation measures	Sig. after Mitigation
AQ01	Localised changes in ambient air quality (odour) due to operation of sewer networks and SPS.	Local population health	National/High	Average	Adhere to operation rules.	Low

6.2 Additional Impact Assessment Requirements

99. The Contractor and ME Balykchy Vodokanal shall be responsible for obtaining all required National and Local Permits for the implementation of the "Construction of Additional Sewer Networks in Balykchy City". The results of any assessment for the facilities shall be considered and any required updates to the IEE and/or the EMP's shall be carried out and supplied to ADB for approval.

6.3 Environmental Reporting Requirements

100. The contractors must develop a Site-Specific Environmental Management Plan (SSEMP) prior to the commencement of the construction works. The SSEMP will incorporate the environmental concerns identified in this IEE, the detailed in the EMP included in this document, and the contract. No civil works can commence without approved SSEMP. The SSEMPs provide contractors an opportunity to address environmental concerns identified in the IEE, and utilizing their own experience and site practices, to state clearly how environmental issues will be addressed. The contractor will submit SSEMP to DSC for review prior to submitting to PMO for approval. From an SSEMP, a series of checklists will be derived by a Contractor with DSC input for use in auditing the contractor's environmental performance and offering early identification of any deteriorating environmental standards.

101. Contractors will submit monthly and quarterly engineering reports, and these must include information on environmental performance. Reporting will include but not be limited to:

- Status of the SSEMP (each measure implementation).
- Status of any other contractor prepared environmental documents.
- Status of environmental permits.
- Recording any physical environmental monitoring results (e.g. air, noise, water quality, vibration).
- Results of contractor and joint contractor / DSC site audits.
- Grievance Redress Mechanism.
- Interaction with the public – public consultations and complaints.
- Training of site staff in environmental matters.

102. DSC and PMO will prepare semi-annual environmental monitoring reports, drawing on the DSC's Environmental Specialist's monthly and quarterly environmental monitoring information and reporting the environmental performance of the project. This document will be submitted to ADB for review and will be disclosed on the ADB's and EA's project websites.

6.4 Conclusion

103. This chapter of the IEE has described the potential impacts of the project activities in the pre-construction, construction and operation phases, and has identified appropriate mitigation measures for addressing each one. To aid in the translation of this material into

practice, the impacts and mitigation measures described here will be extracted and presented in concise form in the EMP.

7 İNFORMATION DISCLOSURE, CONSULTATION, AND PARTICIPATION

7.1 Stakeholder Consultation Approach

104. The public consultation process for the Balykchy Sewerage Expansion Project involves stakeholder participation to assist DDWSSD in achieving public approval for the initiative. The primary objective is to engage a diverse range of participants, including affected persons (APs), local community leaders, civil society members, NGOs, and government officials. A public consultation with stakeholders was conducted in Balykchy on April 4, 2025 (Refer Appendix 2).

105. Dissemination of information and consultation with affected persons and institutions involved will reduce the potential for conflicts and reduce the risk of delays in project implementation. In addition, this approach will enable the Project to develop a resettlement and rehabilitation program that meets the needs and priorities of the affected people and thus potentially increases the economic and social benefits of the investment. The objectives of the public awareness campaign and public consultations are as follows:

- Fully share information with Household HH on the proposed components and project activities.
- Receive information on the needs and priorities of HH, as well as information on their reactions to the proposed principles and activities.
- Ensure that HHs can make fully informed decisions that will directly affect their income and quality of life, and that they could participate in activities and make decisions on issues that will have a direct impact on them;
- Ensure the maximum level of cooperation and participation of HHs and local communities in the activities necessary for planning and implementing resettlement.
- Ensure transparency in all activities related to land acquisition, compensation, resettlement and rehabilitation.

8 GRIEVANCE REDRESS MECHANISM

106. The principal purpose of the Grievance Redress Mechanism (GRM) is to provide an effective and systematic mechanism for responding to appeals and complaints from persons whose interests are affected by the project activities, as well as for providing feedback.

107. ADB SPS 2009 requires the Executing Agency (EA) to establish a GRM to receive and facilitate the resolution of affected persons concerns and complaints about the projects environmental performance during both the construction and operation phases of the project. The GRM should be scaled to the risks and adverse impacts of the project; should address affected persons concerns and complaints promptly using an understandable and transparent process; should be readily accessible to all sections of the community at no cost and with retribution; and should not impede access to the KRs judicial or administrative remedies

108. Grievance Redress Group (GRG). During the project implementation period, dy order dated December 31, 2021, No. 140 of the State Agency for Architecture, Construction of Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic, a commission was established to consider complaints and applications from citizens arising from the implementation of IWMP on social and environmental security measures and gender issues at the central and local levels. This order (Refer Appendix 4) approved the Regulations and Commissions for Considering Complaints and Applications of Citizens Affected by IWMP, and a Grievance Redress Group (GRG) has been established under the project, which will consider issues related to the project. The task of the GRG includes all activities necessary to discuss complaints, assess their validity, assess the scale of their possible impact, address social, environmental, and other issues.

109. The scope of the GRM encompasses issues of environmental performance, involuntary resettlement, and information disclosure. Any complaints regarding matters of fraud and corruption are registered under the GRM but dealt with under separate procedures as established under the law of the KR and the Anti-Corruption Policy of ADB. The GRM will remain in force throughout the construction phase of the project and continue into the operation phase for as long as the primary project institutions (PMO and PIU) are in existence.

110. The GRM has the following four primary elements:

- GRM: The procedure through which complaints are received, screened, reviewed, and resolved promptly and satisfactorily.
- Grievance Redress Group (GRG): Meets to review complaints and decide on necessary actions. The GRG includes representatives of relevant parties (including affected persons) and an independent observer.
- Local Focal Point (LFP): Receives and screens complaints, convenes and facilitates GRG meetings, provides necessary documents, and keeps all records, including a complaints log.
- Public Information: The borrower must ensure that the public in the project area is fully informed about the existence and operation of the GRM and the channels for registering any complaints.

- Affected Person (or Group) (AP): The people who are directly affected by the project and have a grievance to raise.

111. GRG covers issues related to social, environmental and other safety issues in accordance with ADB safety conditions and the legislation of the Kyrgyz Republic

Table 25: Grievance Procedure

Step	Impact level	Process	Time
1	LFP decision	At the initial stage, LFP listens to the affected person and tries to propose acceptable solutions. If the affected person is not satisfied with the decisions, he/she submits complaints in writing to the local GRG within 3 days.	3 days
2	Decision at local level	Upon receipt of the written complaint, the LFP will conduct a review and prepare a case file for local hearing and decision by the GRG. A formal hearing will be held with the GRG on a date determined by the LFP in agreement with the affected person. On the day of the hearing, the affected person must appear before the GRG and present evidence in support of his claim. LFP will record the affected person's statements and document all evidence. The decision of the majority of group members will be considered final by the GRG and will be prepared by the LFP and signed by the other GRG members. The case will be updated and the MK will communicate the decision to the affected person within 14 days. If the aggrieved person is not satisfied with the decision, the LFP will submit a complaint in writing to the central GRG in Gosstroy with a conclusion and supporting documents prepared at the local level.	14 days
3	Decision at central level	Upon receipt of a written complaint, the Chairman of the central GRG will review and prepare a case file for hearing and resolution by the GRG. The formal hearing will be held on a date agreed upon by the GRG Chair and the affected person. GRG members will contact the applicant and visit his/her village. The PIU specialist will record the affected person's statements and document all evidence. The decisions of the majority of members will be considered final by the central GRG and will be prepared by the chairman and signed by the other members. The case will be updated and the PIU specialist will communicate the decision to the affected person within 14 days of filing.	14 days

112. Complaints and appeals from affected persons and other stakeholders will be received in the PIU office in Balykchy, or in the General Department of the Mayor's Offices in Balykchy. They will then be forwarded to the PMO. All complaints will be recorded in a Logbook held in the PMO. Complaints and appeals that can be resolved by simple action on site are dealt with by the LFP in discussion with the affected person or persons, and contractors if necessary. A response letter will be prepared and signed by the LFP, with the approval of the PMO Director, and sent to the applicant within 14 days from the date of registration.

113. .

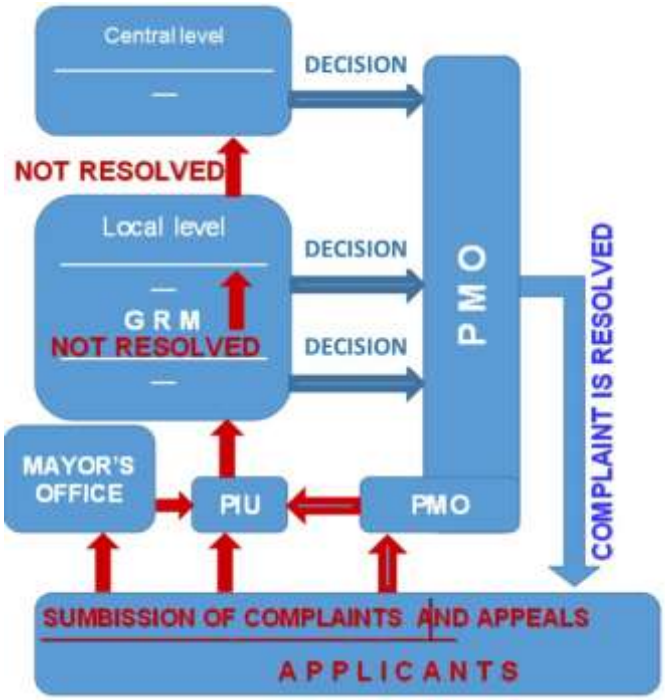


Figure 6: Grievance Redress Steps

114. To solve the assigned tasks, the committee (GRM) performs the following functions:

(i) Reviews appeals/complaints on gender, environmental and social protection measures, and resettlement received from people affected by IWMP.
(ii) Monitoring the implementation of previously made decisions.

115. The committee chairman will perform the following functions:

(i) Presides over the meetings of the committee and organizes its work.
(ii) Has a casting vote at meetings of the committee.
(iii) Approves the agenda for the committee meetings.
(iv) Appoints a date, time and place of committee meetings.

116. The committee has the right to:

(i) Hold meetings when appeals and complaints are received.
(ii) Check the materials (documents) related to the received appeals/complaints submitted for consideration by the committee.
(iii) Request and obtain information from state bodies, local self-government bodies and organizations, regardless of their organizational and legal forms and forms of ownership, in accordance with the established procedure.
(iv) If necessary, invite to the meetings of the committee representatives of state bodies, local self-government bodies, civil society, as well as persons who have submitted appeal/complaint.

117. Members of the committee have the right to:

(i) To recuse themselves or inform the committee's chairman of circumstances for the recusal of one or more members of the committee if such circumstances have become known and they lead to a conflict of interest.
(ii) Notify the committee's chairman about attempts to impact on the results of the committee work by persons involved in the consideration of the appeals/complaints or other interested parties.

118. The committees carry out their activities in the form of meetings.

(i) Meetings of the committee shall be deemed as valid if at least half of its members are present, and members of the committee shall participate in its meetings without the right to be replaced.
(ii) The chairmen of committees preside at the meetings of the committees, and, in their absence, the deputy chairmen of the committees shall preside.
(iii) In there is no quorum at committee meetings, or if the resolution of a disputed issue requires to request additional materials, or take other measures, the time for consideration of the appeal / complaint by the committee may be exceptionally extended, but not more than by 25 calendar days.
(iv) Decisions of the committees shall be taken by open ballot and shall be deemed adopted if a majority of the committee members vote in favor.
(v) Minutes of the committee's meetings should be recorded.

119. At the construction phase of the project, this procedure will be slightly modified to reduce adverse impacts at the lowest level and address short-term adverse impacts, incidents, and complaints directly with the contractor, such as temporary blocked access, isolated dusty conditions, inconveniences. The contractor should keep a complaint log in the site office, and any logged incident will be forwarded to the PIU.

120. The public will be informed about the GRM during the public consultation, as well as through regional newspapers and on websites and by PMO.

121. The tentative composition of the GRG for review and redress of complaints and grievances in Balykchy is:

(i) First Vice Mayor of Balykchy - Chairman of the Committee;
(ii) Head of the Municipal Property Department of Balykchy - Deputy Chairman of the Committee;
(iii) Representative of Ton Branch of the State Enterprise "Cadastre";
(iv) Representative of Balykchy Branch of the State Enterprise "Cadastre";
(v) Representative of the Issyk-Kul Territorial Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic;
(vi) Representative of Balykchy Department of Urban Planning and Architecture of the State Construction Committee;
(vii) Director of Balykchy Vodokanal;
(viii) Representative of IWMP's Consulting Company;
(ix) Manager of IWMP Implementation Unit (PIU);

122. Composition of Grievance Redress Committee at central level:

(i) Deputy Director of State Agency for Architecture, Construction and Housing and Communal Services under the Cabinet of Ministers of the Kyrgyz Republic - Chairman of the Committee
(ii) First Deputy Plenipotentiary Representative of the President of the Kyrgyz Republic in Issyk-Kul region - Deputy Chairman of the Committee;
(iii) Deputy Director of the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction, Housing and Communal Services under the Cabinet of the Kyrgyz Republic.
(iv) Head of Drinking Water and Sewerage Development Unit of Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction, Housing and Communal Services under the Cabinet of the Kyrgyz Republic.
(v) Representative of IWMP's Consulting Company;
(vi) PMO Environmental Specialist, IWMP
(vii) PMO Social Safeguards and Resettlement Specialist

9 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

123. The EMP provides the basis for action and responsibility in relation to the specific environmental, social and cultural heritage concerns raised in this IEE. It ensures that appropriate preparatory, preventive and mitigation measures, as well as effective monitoring and follow-up actions, are properly implemented in a timely manner by designated entities. The actions and responsibilities specified in the EMP has been applied during the detailed design work and incorporated into the contract bidding documents, establishing an agreed framework of shared responsibility for ensuring that the proposed activities are fully compliant – throughout the pre-construction, construction and operational phases, as set out in the ADB's SPS 2009 and in the relevant laws, standards and regulations of the KR.

9.1 Environmental Mitigation and Monitoring Actions

124. This section provides an overview of and guide to the mitigation and monitoring actions that have been specified based on impact analysis in Chapter VI of this report.

9.1.1 EMP Tables

125. The impacts identified during the analysis presented in this report are listed as line items in EMP, which appears in Table 26 to Table 28 for design, construction and operation phases for different direct impact areas. Alongside each impact, the recommended mitigation action or actions; location and timing of their implementation; responsibility for their implementation; and responsibility for supervising their implementation is detailed. The EMP provides the basis for defining contractual obligations for contractors, as well as responsibilities and expectations for the Balykchy Vodokanal, Municipal and National government entities, and Project staff.

126. Accompanying the EMP is a table which specifies the follow-up actions required to ensure that the prescribed mitigation measures are in fact implemented appropriately. This Environmental Monitoring table provides the basis for ensuring accountability and thoroughness in relation to certifying the environmental soundness of the Project and helps define responsibilities and expectations for the Project staff and governmental entities involved in the follow-up. In the case of mitigation measures specified for the operation phase, the monitoring responsibilities specified in the EMoP (Environmental Monitoring Program) provide a basis for the establishment of long-term compliance monitoring programs. EMoP is provided at the end. Indicators of EMoP implementation performance are of two general types: (i) those that can be measured or observed in the environment; and (ii) those that are reported and can be measured with reference to compliance monitoring, reporting, and communication with people in the Project area.

127. It is anticipated that the following SSEMPs, as a minimum, will form part of the overall Environmental Management System.

- Air quality and Dust Suppression Plan: Includes a schedule for spraying water on transport and access roads leading to the construction site, and details of the equipment to be used, and dust abatement measures

- Waste management Plan: that provides for regular collection and disposal of waste in a hygienic manner, as well as the proposed disposal sites for different types of waste (e.g. household waste, worn tires, etc.), collection and storage locations should comply with the relevant regulations
- Management plan for tree felling and soil contamination: Management plan for tree felling is necessary to minimize the cutting of trees along the sewerage route. This will include route selection in the design of sewerage networks that protect particularly valuable trees that provide protection and shade, as determined by local communities. Part of the soil management plan should detail the measures that need to be taken to minimize the impact of wind and water erosion on the topsoil and excess materials; measures to reduce degradation of the topsoil; terms; transport routes; places of unloading and disposal of surplus materials. The plan must be approved by the Local Self-Administration and SAEPF.
- An emergency response plan (in the event of spills, emergencies, fires, etc.) must be submitted prior to commencement of work for the main construction facilities.
- Health and safety management plan; To protect the health and safety of workers and residents of nearby homes, the following information is provided: (1) nearby medical facilities (including a first aid kit) at construction sites; (2) training and education of all construction workers in basic sanitation and health issues, general health and safety issues and the specific hazards of their work; (3) personal protective equipment for workers, such as safety boots, helmets, gloves, protective clothing, goggles and ear protection in accordance with the legislation of the Kyrgyz Republic; (4) clean drinking water for all workers; (5) safety measures for the public, including safety barriers and hazardous area markings; (6) safe access for people through construction sites, whose households and access are temporarily closed by road construction; (7) sanitary facilities and dumpsters at the construction site, which will be regularly cleaned when filled by contractors to prevent disease outbreaks
- Asbestos Management Plan: a structured approach to managing asbestos-containing materials (ACMs) in sewer pipelines, ensuring safety and compliance with regulations.
- Archaeological Chance Finds Protocol/Plan: approach to managing unexpected discoveries of archaeological materials during construction or development projects. It ensures compliance with heritage conservation laws and minimizes disruption while preserving historical artifacts
- Water Course Protection Management Plan: outlines strategies to safeguard watercourses from pollution, erosion, and ecological degradation
- Construction Camp Management Plan: ensures that temporary worker camps are safe, environmentally responsible, and compliant with regulations
- Construction management plan: outlines how a construction project will be executed, monitored, and controlled. It ensures efficiency, safety, and compliance with regulations

128. The contractor must submit an SSEMP for DSC approval, which will reflect all the above activities. If additional environmental risks are identified, the Contractor should develop additional management plans to mitigate adverse impacts beyond the plans listed above

9.1.2 Pre-Construction Phase

129. Impacts arising in the pre-construction phase typically involve land acquisition and resettlement of displaced people because of infrastructure sitting decisions. Although conventional land acquisition or resettlement will not be required for construction of "Additional Sewer Networks in Balykchy City". The sewer network pipelines will be installed on the land already owned by the Balykchy Vodokanal or in existing public Rights-of-Way (RoW). The pre-construction section of the EMP also includes several line items for impacts for which mitigation measures are prescribed. These are impacts likely to arise during the construction and operation phases, but for which preventive mitigation action is appropriate in the pre-construction phase, especially during detailed design work. Similarly, mitigation of most construction period impacts appropriately begin with incorporation of preventive measures into the Contractor's Site Specific Environmental Management Plan during construction planning. It will be ensured that all design related measures of the EMP are included in design and EMP is included in bidding documents and civil works contracts. The bid/contract documents will include specific provisions requiring contractors to comply with all applicable labour laws and core labour standards, and with the requirement of the hiring Environmental Health and Safety Officer. It will be ensured that EMP cost must be included in the contract of the Construction Works contractor. Prior to invitation of bids and prior to award of contract, it was ensured that all clearance/permissions as required for implementation of subproject are in place, to the extent possible.

9.1.3 Construction Phase

130. Construction phase impacts are related to the effects of specific construction practices on elements of the biophysical environment and on people. Construction sites are designed for Balykchy Vodokanal land, and in this project the impact on households is excluded. The Executing Agency/PMU will ensure that the contractor notifies nearby households in advance and restores any disturbed property. Some of these can be severe and long-term, e.g., soil erosion, surface water contamination, and worker exposure to asbestos dust, if preventive action is not taken. Most construction impacts, such as noise, vibrations, disruption of community life, and dust and emissions, are temporary, and can generally be addressed through relatively simple interventions like good maintenance and being a responsible contractor. In this regard, during the preparation period before the implementation of the project, public hearings were held in Balykchy City on April 4, 2025 (Refer Appendix 2), for the community to familiarize them with the preventive measures provided by the design, as well as environmental and social protection measures. The implementation of measures to reduce environmental and social impacts were discussed in detail. Brief brochures with information about the Grievance Redress Mechanism and any appeals to local focal point were developed and distributed. Environmental and social monitoring activities will be conducted regularly until the completion of construction works.

131. All construction period impacts identified in the EMP are generally minimized through implementation of mitigation measures prescribed in the EMP as (good site practices), and none are likely to be permanent or long-term, provided they are addressed as identified.

9.1.4 Operating Period

132. Impacts with potential to be experienced in the operating phase are odour related. The odour impacts are associated with community disturbances during sewer maintenance. Sewage infrastructure conveys sewage to a sewage treatment plant. The components of sewage infrastructure primarily consist of pipes, house connections, and manholes. An effective maintenance program is essential to the operation of a sewage system. Sewer infrastructure maintenance consists of cleaning, inspection, assessment, and repair. In case of failure of a sewerage system, the excavation will be required to remove the damaged pipe and replace the broken section(s) of pipe, to Install a connection thereto and pour a concrete base under the City sewer or provide adequate support, if the material removed from the hole is unacceptable for backfilling, a new backfill material will be found, hauling off any excess dirt or other material unacceptable for backfill, removal of any debris left on a safe disposal area, replacing the surfacing.

9.2 Environmental Management Plan (EMP)

Table 26: Environmental Management Plan – Pre-construction Phase

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
Submission of updated environmental management plan (EMP)/ SSEMP; EMP implementation and reporting	Unsatisfactory compliance to EMP	• Appointing Environmental, Health and Safety (EHS) Supervisor to ensure EMP implementation • Submission of updated EMP/ SSEMP • Timely submission of monthly monitoring reports, including documentary evidence of the implementation of the EMP, such as photographs	Contractor	Contractor Costs
Utilities	Telephone lines, electric poles and wires, water lines within proposed project area	• Identify and include the locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during the construction phase; and • Require construction contractors to prepare an emergency plan that includes actions to be taken in the event of an unintended interruption of services.	Project Management Office (PMO)	PMO costs for project approvals
Consents, permits, clearances, No Objection Certificates (NOCs), etc.	Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	• Obtain all necessary consents, permits, clearance, NOCs, etc. prior to awarding civil works. • Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction • Acknowledge in writing and providing report on compliance all obtained	Contractor, PMO	PMO costs for project approvals Contractor cost for construction approvals

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		consents, permits, clearance, NOCs, etc.		
Protection of historical/cultural areas	Identify potential historical / cultural sites that could be affected by onsite or offsite construction activity. Locate optional construction sites/activities away from them. Ensure construction personnel are aware of locations of historical / cultural areas and avoid them. If the proposed construction passes close to historical / cultural areas, include temporary fences to restrict machines and activities from encroaching in the area.	Chance Finds Procedure as part of the EMP for the construction phase includes provision for ceasing work and notifying the Engineer should artifacts of cultural or historical importance be unearthed. A provisional sum shall be identified in the Contract document to cover the costs of engaging a national archaeological specialist to determine the status of the find and remedial works needed.	PMO agreed that a detailed survey is carried out and mitigation requirements (in the form of protection of off alignment features and relocation of online features) are included in the contract documents. PMO agreed that a provisional sum is included in the Contract Document to cover the cost of engagement of a national archaeological specialist to visit the site, assess any chance finds and identify mitigation / remedial programs.	Project cost
Chance finds	Damage / disturbance to artifacts	Contractor to follow these measures in conducting any excavation work • Create awareness among the workers, supervisors, and engineers about the chance finds during excavation work • Stop working immediately to allow further investigation if any finds are suspected.	Contractor	Contractor cost

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		• Inform departments of archeology if a find is suspected and taking any action, they require to ensure its removal or protection in situ.		
Asbestos containing materials (ACM)	Asbestos fibers can increase the risk of fatal diseases like Asbestosis (a scarring of the lungs that causes increasingly labored breathing) Mesothelioma (a cancer of the lining of the lungs and abdominal cavity) Lung cancer	• Hire an Asbestos Expert to undertake training for all workers / contractors in identifying existing ACM and on Occupational Environment, Health and Safety related to potential hazardous material exposure • Conduct detailed walk over survey by ACM expert to ascertain the location of any ACM prior to construction / pipelaying works • Conduct the pipelaying works without disturbing any ACM • Support contractor assigned person (Contractor ACM) in conducting site assessment, developing inventory of existing ACM including tagging and marking locations of existing ACM in all site maps. • Develop ACM management plan/protocol for compliance with asbestos policies of major international agencies[19] and national requirements • Submission of site assessment, inventory, and ACM management plan to DSC/PMO for review and approval • Contractor-ACM to carry out general awareness campaigns on ACM exposure for field staff and community	Contractor	Contractor cost

[19] In the USA, standards and approaches for handling asbestos are prescribed by the Occupational Health and Safety Administration (OHSA) and the Environmental Protection Agency (EPA) and can be found at http://www.osha.gov/SLTC/asbestos

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		• Conduct training of workers on ACM during orientation / induction		

Table 27: Environmental impact mitigation plan – Construction Phase

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
EMP Implementation Training	Irreversible impact to the environment, workers, and community	Construction contractors - Project manager and all key workers will be required to undergo training on EMP implementation including spoils/waste management, Standard operating procedures (SOP) for construction works; occupational health and safety (OHS), core labor laws, applicable environmental laws, etc.	PMO, DSC and Contractor	Project cost
Cultural heritage Chance finds.	Damage/disturbance to artifacts	Construction contractors to follow these measures in conducting any excavation work • Create awareness among the workers, supervisors and engineers about the chance finds during excavation work • Stop working immediately to allow further investigation if any finds are suspected. Inform Ministry of Culture if a find is suspected and taking any action, they require to ensure its removal or protection in situ. • Chance Finds Procedure as part of the EMP for the construction phase includes provision for ceasing work and notifying the Engineer should artifacts of cultural or historical importance be unearthed.	DSC, Contractor, PMO	Contractor Costs
Earthworks	Instability due to Earthworks Trench Collapse Impact upon structures and houses Slip hazard due to long and unattended trench	• Shoring should be properly maintained along the excavated trenches. Water flows need to be managed • Erection of safety signage boards, project information boards, prohibiting unauthorized person. If trenches or excavations for the manholes will be left open longer than 24 hours, provide night lights, solid barricades, and reflectorized signages. • Excavated materials shall be handled properly, which shall be • loaded to dump truck and shall be taken to temporary disposal/storage site. The excavated material shall not be stored along the excavated trench.	Contractor/ DSC	Contractor Costs

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
	Slope failure Disturbance to existing customs, movements and way of life of local people in the different sections of subproject alignments.	• Avoid any accident • Implement all other applicable site-specific mitigation measures as indicated in the respective SSEMPs		
Collection, storage and backfilling of excavated materials	Air pollution as dust will be generated during loading and transportation of materials Excavated materials if piled along the trench likely to occur trench collapse. Disturb mobility of people;	• Excavated materials will be directly loaded to dump truck/disposal vehicle and will take to temporary disposal sites. • No excavated materials will be piled along the trench and along the roadside near the excavated trench. • Identify temporary disposal site	Contractor	Contractor Costs
Social or Community Concerns	To minimize social disturbance and maximize community benefits from the project:	The decision to close a particular street and divert the traffic should involve the following steps: • approval from the relevant authorities to use the local streets as detours. • consultation with businesses, community members, traffic police, etc., regarding the mitigation measures necessary on the detours where the road is diverted during the construction. • determining of the maximum number of days allowed for road closure, and incorporation of such provisions into the contract documents. • determining if additional traffic control or temporary improvements are needed along the detour route. • considering how access will be provided to the worksite.	Supervision by DSC Implementation by Contractor	Included in overall project cost; Assume: meetings with residents before construction, during construction and after construction.

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
	Increased risk of road traffic accidents due to construction traffic movements	• Actively enforce speed limits for Project vehicles. • Awareness program for local population prior to work commencing, including visits to local schools • Development of Traffic management Plan as part of the SSEMP • Drivers to be fully competent and authorized to drive heavy loads vehicles and to receive specific training. • Ensure that all drivers have completed training and are licensed to drive the vehicles they are operating. • Limits to be adopted and enforced for the maximum number of work hours to avoid overtiredness. • Minimise the number of road movements as much as practicable, maximising capacity of vehicles. • Schedule road movements to minimise impact on existing road users. • Zero tolerance policy for drug and alcohol use amongst all workforce • Providing signages, guardrails or barriers, metal planks as walkways or cover for vehicles, night lighting etc.	Supervision by DSC Implementation by Contractor	Included in overall project cost
	Impacts on health of dust and noise emissions	• Avoid using older vehicles and machinery, with significant noise and air emissions. • Build trenches in short lengths; refill quickly; remove excess spoil quickly. Water unpaved site roads and large areas of exposed soil thrice daily in dry weather. • Ensure that no noise above 70 dB(A) is audible for significant periods within 50 m of any construction site and • Cease activity producing significant noise at night (19:00 pm 07:00 am), Sundays & Public Holidays.	Supervision by DSC Implementation by Contractor	Included in overall project cost
Community Socio-economics	Positive effect short-term employment of local people, this can offset some of the disturbance experienced by people living near construction sites.	• Develop plan for local recruitment of workers for project - train as required • Employ at least 30% of the workforce from the vicinity of construction works if possible	Contractor	No additional cost associated.

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
Air Quality	Localised changes in ambient air quality due to operation of mobile and stationary equipment burning fossil fuels.	• Contractor to maintain all fossil fuel burning equipment in accordance with manufacturers' recommendations. • Contractor to use good quality equipment with minimum emissions and avoid using old equipment and vehicles • No equipment shall be left idling if not in use.	Supervision by DSC Implementation by Contractor	Included in overall project cost
	Emissions from mobile and stationary equipment on sewer lines, affecting local air quality standards	• No equipment shall be left idling if not in use. • Contractor to use good quality equipment with minimum emissions and avoid using old equipment and vehicles		
	Fugitive dust emissions from works, construction traffic causing dust soiling and increase in PM2.5 and PM10	• Construction traffic speed limit when passing through populated areas • Water of dusty unpaved roads and populated areas		
	Transportation of construction materials	Dust suppression by water tankers with sprinkling systems are to be deployed along regularly trafficked routes. The vehicles deployed for material transportation will be spill proof to avoid or minimize the spillage of the material during transportation. Transportation links are to be inspected daily to clear accidental spillage, if any. Precautions will be taken to avoid inconvenience to the local community due to movement of materials. Dry materials to be covered to avoid dust blow.	Contractor with approval of DSC/PMO/PIU	Contractor Costs
Noise and Vibration	Noise disturbance due to equipment and construction activities.	• Awareness program for residents prior to commencement of works • Limitation of working hours for normal construction activities near to settlements times to be set out in the EMP and SSEMP • Avoid using older vehicles and machinery, with significant noise and air emissions. • No idling of equipment when not in use • Plan activities in consultation with DSC/PMO so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance, especially near schools and other sensitive receptors.	Supervision by DSC Implementation by Contractor	Included in overall project cost

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		• Identify any buildings at risk from vibration damage and avoid any use of pneumatic drills or heavy vehicles in the vicinity; if any building at risk, structural survey be completed prior to work, to provide baseline in case any issues from vibration, and if building is structurally unsound that measures taken to avoid any further damage. • Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach. • Consult local communities in advance of the work to identify and address key issues, and avoid working at sensitive times, such as night times, religious and cultural festivals.		
Occupational Health and Safety	Poor quality housing and hygiene standards resulting in injury or sickness	• Contactor to ensure that workers' accommodation and rights are in line with the FIDIC Pink Book requirements • Contract documentation to include the requirement that worker accommodation be in line with good practice, such as that set out in World Bank Workers Accommodation Guidance. Contractor to appoint camp manager who will be responsible for ensuring standards of accommodation meet basic requirements and are safe and hygienic	Supervision by DSC Implementation by Contractor	Included in overall project cost
	Injury or fatality of workers due to insufficient controls on work activities and processes	• Contractor shall develop Method Statements for all major activities and include health and safety risk assessment for each of these activities • Contractors should provide health and safety induction training for all staff, and specific training for staff working on work sites, including COVID-19 measures. • Contractor shall supply to site workers, free of charge all necessary Personal Protective Equipment (PPE) to include as protective footwear, high visibility vests, safety helmet and hearing protection. For specific tasks other PPE may be required, for example welding masks, hot work gauntlets • The contractor will prepare and implement a Health & Safety (H&S) Plan for all work sites and activities (including COVID-19 measures and emergency response plans for it)	Supervision by DSC Implementation by Contractor	Included in overall project cost

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		• The contractor will train and assign a specialist as Health and Safety officer as the person responsible for the duration of the project. • Provision of health care and first aid - Contractor shall ensure that adequate first aid supplies, disinfectants, masks, gloves, etc. and trained first aiders are available. If required Contractor will organize polymerase chain reaction test (PCR) which detects genetic material from a specific organism, such as COVID-19.		
Hazardous and Non-hazardous waste management including Asbestos Containing Materials (ACM)	To manage all hazardous and non-hazardous waste as per international best practices.	• A waste management plan will be developed prior to the start of construction, including an Asbestos Management Plan in accordance with good international practices and protocols on handling and disposing ACM. This plan will cater to sorting hazardous and non-hazardous materials prior to disposal, placing waste bins at the project site for waste disposal and an onsite hazardous waste storage facility • Periodic on-site audits of waste management will be undertaken along with auditing of waste disposal Contractors and disposal facilities on a regular basis to check that procedures are being followed. • Records of all waste generated during the construction period will be maintained. Quantities of waste disposed, recycled or reused will be maintained • Licensed waste Contractors will be engaged to dispose of all non-hazardous waste material that cannot be recycled or reused. • Training will be provided to personnel for identification, segregation, and management of waste.	Supervision by DSC Implementation by Contractor	Included in overall project cost
Occupational Health and Safety	Establishment of construction camp sites (offices)	• The construction campsites will be located away from any local human settlement areas and preferably located on lands, which are barren/waste lands. • The campsites will be provided with adequate water supply, sanitation and all requisite infrastructure facilities. This will minimize dependence on outside resources, presently being used by local populace and minimize undesirable social friction.	Supervision by DSC Contractor with approval of DSC	Contractor Costs

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		• The camps will have septic tank/soak pit of adequate capacity so that it can function properly for the entire duration of its use. • After completion of construction works, the location of campsites will be restored to its previous state by undertaking clean-up operations.		
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	• Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and • All excavated roads shall be reinstated to their original condition. • All disrupted utilities restored • All affected structures rehabilitated/compensated • The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. • All hardened surfaces within the construction camp area shall be ripped, all imported materials removed, and the area shall be top soiled and re-grassed using the guidelines set out in the revegetation specification that forms part of this document. • The contractor must arrange the cancellation of all temporary services. • Request PIU/PMO to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.	Contractor	Contractor Costs
Waste Management	Inappropriate management and disposal of waste during construction	• Include appropriate waste management protocols • Location of appropriate waste storage facilities at all work sites • Worker induction and regular toolbox talks to make all staff aware of zero waste discharge to environment • Zero tolerance of waste entering water course or flood plain areas, this will include all materials (e.g. welding rod stubs, wood, plastics and metals).	Supervision by DSC Implementation by Contractor	Included in overall project cost
	Poor waste management practices resulting in direct and indirect effects	• All hazardous waste containers to be labelled clearly with a waste hazard identification label.	Supervision by DSC Implementation by Contractor	Included in overall project cost

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
	on project area environment	• The contractor will establish a demarcated temporary waste storage area where waste is stored pending transport to final treatment/disposal location. • Contractor will put in place measures to minimise waste, i.e. procure materials with less packaging, refrain from ordering excess materials, make arrangement with suppliers to return surplus, unused materials. • Contractors will take measures to prevent the disposal, burying and burning of waste on-site, roadside dumping and illegal land filling. • Contractor workforce will be trained in the requirements of the Waste Management Plan, particularly with regards to waste segregation, storage and handling. • Implementation of recycling/recovery initiatives to reduce waste sent for disposal. • Contractors will practice good housekeeping on site. • Waste storage containers will be secure, undamaged and appropriately labelled. • Waste to be segregated and containers clearly labelled specifying which type of waste is contained to assist with identifying appropriate disposal routes and in case of accidental spills or loss to the environment. • Waste to be stored in appropriate containers or skips and removed for treatment/disposal at a frequency so as to avoid the build-up of waste on site. • Waste will be collected and transported under cover of a Waste Collection Log and Waste Manifest.		
	Cleaning work sites and waste disposal	• All operational areas (office/storage area, work force camps) will be cleaned up and restored to their previous state soon after operations are complete. • All construction waste will be disposed of in approved Balykchy Vodokanal/municipal dump sites, after receiving permit for construction waste disposal from the Balykchy Vodokanal/Municipality. Local district authorities will be	Supervision by DSC Contractor with approval of DSC	Contractor Costs

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		consulted to determine any conditions imposed while issuing permits.		
	Disposal of demolition debris	• Conduct pre-demolition waste audit to estimate debris types and volumes. • Segregate materials at source: concrete, bricks, metals, wood, glass, plastics, hazardous waste. • Store debris safely in covered, impermeable containers away from sensitive zones. • Use licensed transporters with covered vehicles; maintain trip logs and manifests. • Prioritize recycling and reuse through authorized facilities; dispose of residuals at approved landfills. • Route hazardous waste to certified treatment centers per national and MDB standards. • Document disposal activities with daily logs, manifests, and site photos for SEMR inclusion. • Coordinate with Karakol municipal authorities for permits and compliance oversight. • Restore site post-demolition with dust suppression and erosion control measures.	Supervision by DSC Contractor with approval of DSC	Contractor Costs
Water resources	Potential for contamination of water course due to release of hydrocarbons or oils and grease etc.	• Contractor to conduct risk assessments on all activities near to water courses and apply appropriate controls. • No refuelling of vehicles or equipment to take place within riverbeds or within 25 metres of the edge of the water course. • Works in the water protection zone of the river are to be carried out with the special requirements that will be reflected in the SSEMP.	Supervision by DSC Implementation by Contractor	Included in overall project cost
Biodiversity	Potential impacts on trees/vegetation adjacent to work sites	• Contractor to develop a tree protection plan as part of the SSEMP. This will as a minimum set out restrictions on tree removals, stock piling soils over tree root systems, excessive compression of soils around tree root systems. • Prior to any clearing of vegetation, a Contractor will make a species inventory of the area cleared; use vegetation inventory to identify appropriate local plant species to be used for	Supervision by DSC Implementation by Contractor	Included in total project costs-(a number will be confirmed during SEMP preparation)

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		revegetation. Trees will not be cut off unless justified on engineering, safety, and environmental grounds. • Worker awareness training to include protection of trees. • No tree cutting for fuel to be allowed • Plant three trees of the same species for each tree that is cut for construction.		
Soil and Ground Water	Accidental spillage of hydrocarbon affecting local ground water	• Fuels should be stored in good quality above ground tanks placed on an impervious surface with a spill containment bund capable of containing 110% of the tank capacity • No onsite refueling within or adjacent to water courses • On site refueling of equipment and vehicles shall utilise a drip tray to prevent hydrocarbons entering the ground.	Supervision by DSC Implementation by Contractor	Included in overall project cost
	Potential damage or loss of soil resources due to erosion or improper handling.	• Soils shall be protected from water and wind erosion. • Removal of vegetation shall be minimised • Topsoil resources should be stripped from site and stored for later restoration. Stockpiles should be no more than 1.5 m in height and shall be protected from erosion either by seeding with quick growing non-invasive grass mix or covered. Valued topsoil shall not be compressed by tracking of equipment and machinery.	Supervision by DSC Implementation by Contractor	Included in overall project cost
Reporting	Environmental monitoring and reporting to confirm compliance	**Safeguards Monitoring**: Contractor's monthly reports and DSC's quarterly progress reports should have a section on safeguard compliance. PMO will submit for disclosure on ADB and EA websites semi-annual environmental monitoring reports (SAEMR) on or before end of January and July each year. Final EMR will include post-construction environmental audit and will be submitted one month after the project's physical completion.	Implementation by Contractor, DSC, PIU and PMO	Included within management costs

Table 28: Operating Phase Environmental Mitigation Plan for Sewerage Networks

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
Community disturbances during maintenance of manholes and sewer pipelines	Contamination caused by accidental spills	• Emergency areas will be contained and cleaned up immediately • Contaminated soil will be removed, placed in a sealed container, and taken to a safe area for disposal • Contaminated soil will be replaced with clean aggregate material	Balykchy Vodokanal	Included in maintenance budget of Vodokanal
	Air pollution	Machinery and equipment must be operated properly during operation of sewerage	Balykchy Vodokanal	Included in maintenance budget of Vodokanal
	Noise	All parts used in mechanical equipment in the sewerage systems must be tightly secured	Balykchy Vodokanal	Included in maintenance budget of Vodokanal
	Water pollution Emergency pipeline breaks	Efficient operation of pipelines will ensure quality work of sewerage networks in Balykchy	Balykchy Vodokanal	Included in maintenance budget of Vodokanal
Response measures in emergency situations	Emergency response teams are created as soon as possible	Thorough and continuous monitoring of the sewage network and systems providing early warning of malfunctions	Balykchy Vodokanal and stakeholders	Included in maintenance budget of Vodokanal
Operation and maintenance of sewerage system	Blocks, overflows, system malfunction, occupational health and safety	• Establish regular maintenance program, including: • Regular cleaning of grit chambers and sewer lines to remove grease, grit, and other debris that may lead to sewer backups. Inspection of the condition of sewer structures and identifying areas that need repair or maintenance. Items to note may include cracked/deteriorating pipes; leaking joints or seals at manhole;	Balykchy Vodokanal and stakeholders	Operating Expenditure (OPEX)

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		frequent line blockages; lines that generally flow at or near capacity; and suspected infiltration or exfiltration; and • Monitoring of sewer flow to identify potential inflows and outflows • Conduct repairs on priority based on the nature and severity of the problem. Immediate clearing of blockage or repair is warranted where an overflow is currently occurring or for urgent problems that may cause an imminent overflow (e.g. sewer line ruptures, or sewer line blockages). • Maintain records; review previous sewer maintenance records to help identify "hot spots" or areas with frequent maintenance problems and locations of potential system failure, and conduct preventative maintenance, rehabilitation, or replacement of lines as needed. • When a spill, leak, and/or overflow occurs, keep sewage from entering the storm drain system by covering or blocking storm drain • inlets or by containing and diverting the sewage away from open channels and other storm drain facilities (using sandbags, inflatable dams, etc.). Remove the sewage using vacuum equipment or use other measures to divert it back to the sanitary sewer system. • Prohibit/prevent disposal of wastewater/effluent from industrial units in the sewers; ensure regular checking to		

Draft Activity/Issue	Potential Environmental Impacts	Proposed mitigation measures	Responsibility	Cost/activity
		ensure no illegal entry of industrial wastewater into sewers • Develop an Emergency Response System for the sewerage system leaks, burst and overflows, etc. • Provide necessary health and safety training to the staff in sewer cleaning and maintenance • Provide all necessary personnel protection equipment • Do not conduct manual cleaning of sewers; for personnel engaged sewer maintenance work, there is a risk due to oxygen deficiency and harmful gaseous emissions (hydrogen sulfide, methane, etc.); provide for adequate equipment (including oxygen masks) for emergency use.		

9.3 Environmental Monitoring Plan (EMoP)

133. Environmental monitoring is an important aspect of environmental management during the design phases of construction and work, which guarantees environmental protection. During construction, environmental monitoring will ensure that the embankment is protected from potential soil erosion, and will monitor the location of working areas, community relations and compliance with safety precautions. Monitoring of noise, air quality and surface water levels will be an important parameter in the monitoring program during the production of the work. The parameters to be monitored are outlined in the following plan

Table 29: Environmental monitoring plan for Construction of Additional Sewer Networks in Balykchy City

Project Activity and Potential Impact	Objective of Monitoring	Monitoring parameters	Measurements:	Location	Frequency	Responsibility
Preconstruction Phase Monitoring Requirements						
Air Quality	To establish baseline air quality levels	CO, NOx & PM10 (particulate matter smaller than 10 microns) concentration at receptor level	1-hr and 24-hr concentration levels	Receptor locations TBD to be provided by PMO and DSC prior to contract award	Twice in total (Once on a weekday and once on a weekend)	Contractor
Ambient Noise	To establish baseline noise levels	Ambient noise level near key noise sensitive receptors	A-weighted noise levels	receptor locations TBD by DSC	Twice in total (Once on a weekday and once on a weekend)	Contractor
Construction Phase Monitoring Requirements						
Noise Disturbance due to noise from construction activity	To determine the effectiveness of noise abatement measures on sound pressure levels	Ambient noise level near key noise sensitive receptors	A-weighted noise levels	At key receptor locations	On monthly basis	Contractor
Air Quality Dust emissions from construction vehicles and equipment	To determine the effectiveness of dust control program on dust at receptor level	CO, NOx & PM10 (particulate matter smaller than 10 microns) concentration at receptor level	1-hr concentration levels	At key receptor locations	On monthly basis	Contractor
		Visible dust	Visual observation of size of dust clouds, their dispersion, and the direction of dispersion	Sites	On daily basis	Contractor

Project Activity and Potential Impact	Objective of Monitoring	Monitoring parameters	Measurements:	Location	Frequency	Responsibility
Workers camp/ on-site water quality monitoring (drinking water)	To determine water quality to ensure workers' safety and health[20]	To meet national drinking water quality standards and/or WHO Guidelines for Drinking Water Quality	Instrumental water quality test	At workers camp	On weekly basis	Contractor
Increase in traffic accidents	To minimize risk of traffic accidents	Number of accidents taking place	Visual monitoring	Construction vehicles traveling to/from construction sites	On weekly basis	Contractor
Safety precautions by Safety workers	To prevent accidents for workers and public	Number of near miss events and accidents taking place	Visual inspections	Sites	On weekly basis	Contractor
Soil Pollution	To prevent contamination of soil from oil and toxic chemical spills and leakages	Incidents of oil and toxic chemical spills	Visual inspections	Sites	Once a month	Contractor
Solid Waste & Effluent disposal Insufficient procedures for waste collection, storage, transportation and disposal	To check the availability of waste management system and implementation	Inspection of solid and liquid effluent generation, collection, segregation, storage, recycling and disposal at construction sites	Visual inspections	Sites	On weekly basis	Contractor

[20] If bottled or canned water is intended for potable use, the manufacturer's details and compliance with relevant Kyrgyz regulations will be verified to ensure potability. In such cases, water quality monitoring may not be required; the necessity for such monitoring will be determined by the Design and Supervision Consultant (DSC).

9.4 Implementation Arrangements

9.4.1 Environmental Requirements to be Implemented

134. Implementation of the EMP will require several different classes of actions. Training needs must also be met at this stage, to make the PMO and contractors fully aware of their responsibilities and improve their understanding of environmental impact and mitigation. During construction planning, proactive effort will be required to lay the groundwork for effective implementation of mitigation measures during construction, primarily through the preparation and approval of the SSEMP. On-the ground mitigation actions will dominate during the construction period, as contractors apply the measures specified in the SSEMP to the physical works. Similar day-to-day actions will continue in the hands of system operators once the facilities open. EMP implementation will transition to include ongoing testing, analytical and adaptive work in the operation period. Throughout the entire Project life cycle, monitoring for compliance and environmental performance, as well as enforcement, will be a constant.

9.4.2 Implementation arrangement

135. The following organizations and/or staff responsible for EMP implementation, environmental monitoring and/or supervision during the design and construction:

a. **PMO Environmental Specialist**. To carry out overall coordination in implementing the SSEMP, monitoring and control to ensure Contractors' compliance with the norms and requirements of the national environmental legislation, the ADB's Safeguards Policy Statement and prepare analytical documents and reports

b. **International and National Environmental Safeguard Specialists of DSC**. To assist the PMO Environmental Specialist in coordinating and overseeing design, construction supervision and monitoring activities under the project based on the contract. To undertake the technical oversight for the delivery of all safeguard measures, ensures that SSEMP mitigation and monitoring measures implemented, and compliance reporting completed.

c. **Contractor's environmental managers and/or Health, Safety and Environmental officers**. Responsible for preparation and implementation of Site-Specific Environmental Management Plan (SSEMP) for approval by the Employer (EA) prior to the Contractors taking possession of the construction site; Ensure that the SSEMP is implemented effectively throughout the construction period; Carry out the monitoring and mitigation measures set forth in the IEE/EMP/SSEMP; Establish an operational system for managing environmental impacts; Allocate the budget required to ensure that such measures are carried out. Construction contractor was responsible to prepare monthly progress reports on SSEMP implementation, which should contain information on the main types of activities carried out during the reporting period, status of any clearances/permits/licenses which were required for carrying out such activities, mitigation measures applied, and any environmental issues that have emerged in relation with suppliers, local authorities, affected communities, etc. HSE officers of Contractors carry out the activities stipulated in

SSEMP, monitoring and control to ensure Contractors' compliance with the norms and requirements of national environmental legislation and ADB Safeguards Policy

d. **Authorized state bodies and their territorial divisions**:

i. Ministry of Architecture, Construction and Housing and Communal Services of the Kyrgyz Republic (MACHCS),

ii. State Institution Drinking Water Supply and Sewerage Development under the Water Resources Service under the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic (SIWSSD),

iii. Project Implementation Unit in Balykchy (PIU),

iv. Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic (MNRETS),

v. Department for Disease Prevention and State Sanitary and Epidemiological Control and the Balykchy Inter district Center for Disease Prevention and State Sanitary and Epidemiological Control under the Ministry of Health KR (MoH),

vi. Ministry of Culture, Information, Sports and Youth Policy (MCISYP),

vii. Ministry of Emergency Situations (MES), Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic (MWRAPI) and others.

9.5 Environmental Management Budget

136. Most of the mitigation measures require the contractors to adopt good site practice, which should be part of their normal construction contract; so, there are additional costs, such as instrumental monitoring, cost of mitigation measures, etc.to be included in the EMP. Following Table 30 shows the environmental management costs of this project. The duration for implementing the works is short and so EM costs are relatively low.

Table 30: Contractor's Cost for Environmental Management

	Item	Unit	Quantity	Rate (in figures) US $	Total
A.	**Personnel**				
1	Appointment of a dedicated full-time Environment, Health and Safety (EHS) Specialist throughout contract period for maintaining safety and protection against accidents including traffic control, preparation of site-specific EMP, coordination work, addressing field-level grievances, and compliances with EHS requirements with one standby emergency vehicle. (Payment shall be made upon deployment of all resources/manpower)	person-month	12	1000	12000

	Item	Unit	Quantity	Rate (in figures) US $	Total
B.	**Environmental Management Plan (EMP) Implementation and Safeguards**				
2	Training by EHS Staff to workers on SSEMP implementation, chance finds, health and safety	Number of trainings	3	600	1800
3	Provision of cutting, temporary closing, dismantling, cleaning and reinstating all utilities such as the electricity line, water supply lines and telecom network; reinstatement or relocation of public utilities within land services, i.e. electric pole, transformer, telephone poles, street lightning, etc; reinstatement of affected; reinstatement of damaged structures during construction activities etc. including supply of necessary materials, labours, equipment, tools and installation of all complete work as per specification and instructed by the Employer/Engineer.	Lump sum	1	1200	1200
4	Safety signage boards, caution tapes during construction works in sites. Street lighting and safety fences Pavement Markings, Channelizing Devices(cones), Arrow Panels and Warning Lights. Night lights, solid barricades, and reflectorized signages.	Lump sum	1	600	600
5	Guardrails or barriers, metal planks as walkways or cover for vehicles over open excavation/trenches	Lump sum	1	600	600
6	Flyers/brochures/notification to surrounding communities 7 days and again 1 days before start of excavation	Lump sum	1	300	300
7	Air quality monitoring - Instrumental air quality monitoring (parameters CO, NO2, SO2, O3 and PM10)	Per monitoring	26	120	3120
8	Noise levels monitoring - Instrumental noise levels monitoring (dB)	Per monitoring	26	50	1300
9	Water quality monitoring	Per monitoring	12	120	1440

	Item	Unit	Quantity	Rate (in figures) US $	Total
10	Personal protective equipment (work-related and COVID-19 related), first aid kits, fire extinguishers, chemical/fuel spill controls	Lump sum	1	1,200	1,200
11	Asbestos management (preparation of asbestos management plan, testing, third-party contractor for dismantling, transport, storage and disposal, and training of workers)	Lump sum	1	1,000	1,000
	Total				**24,560**

10 CONCLUSIONS AND RECOMMENDATIONS

10.1 Conclusions

137. In view of the above, it can be concluded that the project has a well-proven rationale, strong public support, an insignificant negative impact and the possibility of a positive impact on the environmental quality of the Issyk-Kul basin and on the health and prospects of socio-economic development of the people who live there. It is therefore recommended that a project based on the preferred alternative identified in this report and including an Environmental Protection Management Plan be put forward for implementation.

138. The Initial Environmental Examination, Environmental Management Plan, and Environmental Monitoring Plan requirements and activities must be complied with by the Contractor as part of the contract documents. Accordingly, the Contractor will require all its subcontractors to also comply with the Environmental Protection Action Plan and similar conditions must also be specified in the contracts with the subcontractor, which will be reviewed by the Engineer (or Design Supervision Consultant).

139. The proposed Environmental Management and Monitoring Plans will ensure that good quality of surface water, air and noise is maintained in the common area, especially during the construction phase. The assessment should avoid (especially during the design phase), reduce (during construction), and mitigate or compensate (including during construction) environmental and / or social impacts. A public consultation was held to familiarize with the project, and information on environmental and social impacts was provided. The results of additional public meetings are included in Appendix 2 of this IEE Report.

10.2 Summary and Recommendations

140. The environmental impacts of the sewerage network construction have been assessed and described in Chapter 6 of this document. Potential negative impacts have been identified for the design, placement, construction and operation of the sewerage network (including three SPS). Mitigation measures have been developed to be finalized in the detailed design stage, to be implemented during the construction phase and then during the operation phase, to reduce all negative impacts to an acceptable level.

141. According to the assessment in this IEE Report, the proposed sewerage project is unlikely to cause any adverse environmental impacts, due to the fact that:

- The proposed project activity focuses on expanding the existing sewerage network and improving the sanitary conditions in Balykchy city, aims to improve the quality of life and quality the environment of the surrounding areas including lake Issyk-Kul.
- Potential negative impacts associated with the design, construction and operation of the proposed activities will be temporary in nature and will be localized in volume and mitigated to an acceptable level.
- There is no project work that would result in permanent or temporary loss of income and / or livelihood. Rather, it contributes to a possible increase in

household incomes in connection with the possible employment of the local population in construction.

- An institutional framework has been developed to define procedural requirements and responsibilities to ensure environmentally sustainable implementation, that is, with the participation of PMO (DDWSSD), DSC and Contractor.
- All construction and operational activities will be monitored and reported to the DDWSSD (through the recruitment of DSC) in accordance with the environmental monitoring plan.

142. In order to ensure environmental and social guarantees, the following recommendations are considered in the IEE Report:

- Designers should pay due attention to the IEE section (Environmental Management Plan, Environmental Monitoring Plan) and the monthly monitoring reports should be prepared in a timely manner.
- The functions of tree caring should be transferred to local communities until the trees reach the age of 8 years old and no longer require careful maintenance.
- Shortly after the start of the operation period, the DSC and the contractor conduct a warranty compliance review to ensure that the contractor has followed all the necessary measures.

143. This IEE Report will be updated as necessary, taking into account all environmental requirements, and all significant changes will be discussed and agreed with the ADB.

144. It is important that the Contractor and his Subcontractor (if any) understand that successful implementation entails not only the provision of infrastructure, but also the preservation of the environment within the framework of sustainable development.

Appendix 1: Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title: KGZ: Issyk-Kul Wastewater Management Project, Construction of Additional Sewer Networks in Balykchy City - IMP/ICB/CW-21/008

Sector Division: Water and other urban infrastructure and services

Screening Questions	Yes	No	Remarks
B. PROJECT SITING IS THE PROJECT AREA…			
▪ DENSELY POPULATED?		☒	Subproject area spans residential zones and arterial roads of Balykchy; moderate population density.
▪ HEAVY WITH DEVELOPMENT ACTIVITIES?		☒	Urbanized area with pre-existing infrastructure Additional sewer works will not introduce industrial activity
▪ ADJACENT TO OR WITHIN ANY ENVIRONMENTALLY SENSITIVE AREAS?	☑		The IWMP comes under the Issyk-Kul Lake surrounding region, which is a nationally valuable environmental, economic and cultural asset.[21] Being 180-km long, 60-km wide, and with a surface area of 6,200-km^2, the lenticular-shaped lake is the world's second largest high-altitude lake. As per the Issyk-Kul Biosphere Reserve (IKBR) classification, the lake area has been divided into 4 zones, in that the IWMP comes under the Transition Zone[22], where sustainable economic development is allowed. Hence with exemption to construction related impacts (which is temporary in nature and will exists till the completion of the construction activities), no other major impacts which are irreversible has been envisaged
▪ CULTURAL HERITAGE SITE		☒	As per Resolution No. 240 (10 May 2024), the Ministry of Construction confirmed the Balykchy subproject site is not considered a historic or cultural resource.
▪ PROTECTED AREA	☑		The whole project area, under the IWMP (including this subproject) comes under the

[21] The lake's rich environmental, archaeological and cultural resources are renowned internationally

[22] The transition zone focuses on sustainable economic development. Economic activities are permitted but are regulated so as to ensure sustainable use of ecosystems.

Screening Questions	Yes	No	Remarks
			Issyk-Kul Biosphere Reserve (IKBR) classification, however, this subproject on the additional works comes under IKBR Transition Zone[23], where sustainable economic development is allowed. No direct impact expected with mitigation measures
▪ WETLAND		☒	Not applicable. Sewer alignments are within urban bounds
▪ MANGROVE		☒	Not envisaged
▪ ESTUARINE		☒	Not envisaged
▪ BUFFER ZONE OF PROTECTED AREA	☑		Please refer to the remarks given under Protected area
▪ SPECIAL AREA FOR PROTECTING BIODIVERSITY	☑		Please refer to the remarks given under Protected area
▪ BAY		☒	Not envisaged
A. POTENTIAL ENVIRONMENTAL IMPACTS WILL THE PROJECT CAUSE…			
▪ impairment of historical/cultural monuments/areas and loss/damage to these sites?		☒	Please refer to the remarks given under Cultural heritage site
▪ interference with other utilities and blocking of access to buildings; nuisance to neighboring areas due to noise, smell, and influx of insects, rodents, etc.?		☒	Not envisaged. Temporary disruption may occur; traffic and dust management plan included in EMP..
▪ dislocation or involuntary resettlement of people?		☒	Not envisaged.Works are confined to public ROW and vacant lands. No resettlement envisaged
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		☒	Not envisaged, Community consultations conducted; social categorization “C” under ADB SPS 2009
▪ impairment of downstream water quality due to inadequate sewage treatment or release of untreated sewage?		☒	Upgraded system to improve water quality and prevent overflow.
▪ overflows and flooding of neighboring properties with raw sewage?		☒	Not envisaged. Underground insulated system minimizes risk. Design complies with national urban sewer standards
▪ environmental pollution due to inadequate sludge disposal or industrial waste discharges illegally disposed in sewers?		☒	Not envisaged. As this is an underground sewerage system (UGSS), unauthorized industrial wastewater discharge or illegal disposal into the system is not feasible
▪ noise and vibration due to blasting and other civil works?		☒	Not envisaged. Temporary impacts anticipated. Mitigation covered under EMP; no blasting involved.

[23] The transition zone focuses on sustainable economic development. Economic activities are permitted but are regulated to ensure sustainable use of ecosystems.

Screening Questions	Yes	No	Remarks
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?		☒	As indicated in the earlier response, the proposed construction activities under this subproject are very minimal and hence physical, chemical, and biological hazards are not envisaged. EMP includes PPE, training, and safety monitoring protocols
▪ discharge of hazardous materials into sewers, resulting in damage to sewer system and danger to workers?		☒	Not envisaged. no industrial discharge sources connected
▪ inadequate buffer zone around pumping and treatment plants to alleviate noise and other possible nuisances, and protect facilities?		☒	Not envisaged,
▪ road blocking and temporary flooding due to land excavation during the rainy season?		☒	Not envisaged, Works scheduled outside monsoon window; stormwater management in place.
▪ noise and dust from construction activities?	☑		Dust and noise pollution are anticipated during construction activities, however suitable mitigation/ management measures are provided in the EMP, which shall be included in the contract agreement as a requirement for the contractor to fulfill, which shall be monitored by the DSC.
▪ traffic disturbances due to construction material transport and wastes?		☒	Not envisaged, as per the assessment, the subproject area does not have high volume of traffic and hence transportation of the construction materials do not have any traffic disturbance to the locals.
▪ temporary silt runoff due to construction?		☒	Not envisaged, construction works will be halted during the rainy season. However, silt management measures are provided in the EMP which shall be adopted to control silt runoff
▪ hazards to public health due to overflow flooding, and groundwater pollution due to failure of sewerage system?			Not envisaged. Please refer to the remarks given under “overflows and flooding of neighboring properties with raw sewage?”
▪ deterioration of water quality due to inadequate sludge disposal or direct discharge of untreated sewage water?		☒	Not envisaged, Designed system prevents seepage; compliance with local water protection laws
▪ contamination of surface and ground waters due to sludge disposal on land?		☒	Not envisaged. This subproject focuses solely on the provision of an underground sewerage network and does not involve any sludge disposal activities
▪ health and safety hazards to workers from toxic gases and hazardous materials which maybe contained in confined areas, sewage flow and exposure to pathogens in untreated sewage and unstabilized sludge?		☒	Not envisaged, Safety protocols and gas detection measures embedded.

Screening Questions	Yes	No	Remarks
▪ large population increase during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?		☒	Not envisaged, as indicated earlier, the proposed subproject involves minimal construction works which shall be managed through engaging local labours and hence huge labour influx and burden on the social infrastructure are not anticipated
▪ social conflicts between construction workers from other areas and community workers?		☒	As indicated in the previous remarks, local labours shall be engaged in the construction works and hence social conflicts is not envisaged
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?		☒	Not envisaged
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?		☒	Not envisaged, the proposed construction activities do not envisage the mentioned impacts.

A Checklist for Preliminary Climate Risk Screening

Country/Project Title: KGZ: Issyk-Kul Wastewater Management Project, Construction of Additional Sewer Networks in Balykchy City - IMP/ICB/CW-21/008

Sector: Water and other urban infrastructure and services

Subsector:

Division/Department:

Screening Questions		Score	Remarks[24]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather-related events such as floods, droughts, storms, landslides?	0	Urban routing avoids flood plains and steep slopes.
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?	0	Local temperature and rainfall incorporated; no major hydrological interface
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Weather resilient materials selected for sewer components
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s) ?	0	Standard maintenance applicable; climate conditions considered
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	Infrastructure designed for region's seasonal variability

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high-risk project.

Result of Initial Screening (Low, Medium, High): LOW

[24] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Other Comments: The proposed subproject on the additional works (11.034 km extension to the existing sewer network in Balykchy City), shall not have any impact on the climate change, the design and the construction materials shall withstand any extreme weather condition, hence as per the given scoring this subproject shall be considered as LOW risk.

Prepared by: Prepared by the State Institution Drinking Water Supply and Sewerage Development (DWSSD) under the Water Resources Service under the Ministry of Water Resources, Agriculture and Processing Industry of the Kyrgyz Republic for the Asian Development Bank

Appendix 2: OVOS -Network (Minutes of Public Consultations)

Issyk-Kul Wastewater Management Project

Loan #3742-KGZ/Grant #0628 KGZ

PROTOCOL
of the public hearing on the issue of
"Environmental Impact Assessment (EIA) and Social Safeguards for the Expansion/Construction of the Sewerage Network (SN) in Balykchy within the ADB Issyk-Kul Wastewater Management Project

Date: 10:00 AM Bishkek time, 04/04/2025

Venue: Kyrgyz Republic, Issyk-Kul Region, Balykchy, Abrahmanov Street, 252, 1st Floor, Main Hall of the Balykchy City Mayor's Office.

Participants:
On behalf of the Executive Agency and Implementing Agency:

- A.B. Baigaziev – Chief of Staff of the Balykchy City Mayor's Office
- S.B. Baktybekov – Deputy Director of the Municipal Enterprise "Vodokanal"
- K.Sh. Zhundubaev – PMO Environmental Safeguards Officer
- K.Z. Karasartov – PIU Project Manager

Residents of Balykchy:
Residents of Balykchy who participated in the public hearing in the annex (list of participants)

Agenda:

- Presentation and speech on "EIA of the Sewerage Network in Balykchy" – Environmental Specialist of LLC "Encon": O.V. Zinina
- Presentation and speech on "Social Safeguards" – Environmental and Social Safeguards Specialist: O.V. Zinina
- Speeches by other participants
- Comments and Q&A on the EIA and social protection measures during the expansion/construction of the sewerage network in Balykchy
- Summary and conclusion of the public hearing

On behalf of the Employer, the Chief of Staff of the Mayor's Office (EA,IA), - IWMP PMO Environmental Safeguards Officer, Manager of the Balykchy PIU welcomed the participants of the public hearing on the discussion on "Environmental Impact Assessment (EIA) and Social Safeguards during the expansion/construction of the sewerage network (SN) in Balykchy under the ADB Issyk-Kul Wastewater Management Project".

Welcome Remarks:
Moderator: K.Z. Karasartov, Project Implementation Unit Manager in Balykchy:

Dear participants of today's public hearing!
We declare open our public hearing on the environmental impact assessment and social issues related to the expansion of the sewerage network, within the framework of the Asian Development Bank project *"Issyk-Kul Wastewater Management."*

The hearing is attended by:

- Almaz Belekovich Baigaziev, Chief of Staff of the Balykchy City Mayor's Office
- Samat Baktybekovich Baktybekov, Deputy Director of the Balykchy Municipal Enterprise "Vodokanal"
- Heads of relevant city departments and residents of Balykchy
- Kylychbek Sheralievich Zhundubaev, Specialist from the Project Management Office
- Olga Vasilievna Zinina, Environmental Specialist from LLC "Encon"
- Vitaliy Sergeyevich Pyatkin, Design Engineer

First, let us approve the agenda:

1. Each speaker is allotted 5–6 minutes.
2. Presenting specialists will have 20 minutes.
3. After the presentations, each question-and-answer session will be limited to 2–3 minutes.
   Let us do our best to adhere strictly to the schedule.

Brief overview of the project:

1. The total project budget is **USD 41.82 million**, covering the cities of Balykchy and Karakol.
2. Of this, **USD 12.84 million** is provided as a grant.
3. **USD 23.68 million** is provided as a loan.
4. Additional funding of **USD 5.30 million** is provided by the Government of the Kyrgyz Republic (including taxes and duties as co-financing).
5. **Executing Agency:** Department of Drinking Water Supply and Wastewater Disposal
6. **Implementing Agency:** Plenipotentiary Representative Office of the Government of the Kyrgyz Republic in the Issyk-Kul Region
7. Project start date: **August 16, 2019** – End date: **December 31, 2026**
8. Supervisory Authority: **Resident Mission of the Asian Development Bank in the Kyrgyz Republic**
9. The loan agreement was ratified on **July 16, 2019**
10. The loan and grant agreements were signed on **December 28, 2018**

In the city of Balykchy, sewer pipelines will be laid on five streets and three sewage pumping stations (SPS) will be constructed.

Balykchy sewerage network route by sections:

Section No. 1 – Bekturova Street ("Sportivnaya") – Length: 2,148 meters

- Pressure pipeline along Bekturova St. from Abdyrahmanova St. to the sewage pumping

station (SPS) on Ozernaya St.
- Gravity pipeline along Ananyevo St. from Abdyrahmanova St. to O. Bozova St., then along O. Bozova St. from Ananyevo St. to Bekturova St.
- Gravity pipeline along Orozova St. from Abdyrahmanova St. to O. Bozova St.

Section No. 2 – Western Area – Length: 3,590 meters

1. Gravity pipeline along Z. Kazakbaeva St. (Sary-Bulak) from Sadyra Ake St. (Solnechnaya) to Abdyrahmanova St.
2. Gravity pipeline along Abdyrahmanova St. from Z. Kazakbaeva St. (Sary-Bulak) to Togolok Moldo St.
3. Gravity pipeline along S. Lazo St. from Alieva St. to B. Abdyraeva St. (Chernyshevskaya)
4. Gravity pipeline along B. Abdyraeva St. (Chernyshevskaya) from S. Lazo St. to Z. Kazakbaeva St. (Sary-Bulak)
5. Gravity pipeline along an unnamed (curved) street from the beginning of S. Lazo St. to Sary-Jaz St.
6. Gravity pipeline along another unnamed street from Sary-Jaz St. to Z. Amanbaeva St. (40 Years of Kyrgyzstan St.)

Section No. 3 – Sultanova St. (Pervomayskaya) – Length: 2,235 meters

1. Gravity pipeline along Tumenova St. (Oktyabrskaya) from Abdyrahmanova St. to A. Karybaeva St. (Sovetskaya)
2. Pressure pipeline along Sultanova St. (Pervomayskaya) from Abdyrahmanova St. to Ozernaya St. (to SPS)
3. Gravity pipeline along A. Karybaeva St. (Sovetskaya) from Abdyrahmanova St. to A. Karybaeva St. (Sovetskaya)
4. Gravity pipeline along A. Karybaeva St. (Sovetskaya) from Tumenova St. (Oktyabrskaya) to A. Karybaeva St. (Sovetskaya)

Section No. 4 – Kydyr-Ake St. (Kalinin St.) – Length: 2,798 meters

1. Gravity pipeline along Mukasheva St. (Skryabina) from Mukasheva (Skryabina) to Ozernaya St.
2. Gravity pipeline along Ozernaya St. from Mukasheva (Skryabina) to Parkovaya St.
3. Gravity pipeline from Proletarskaya St. to Ozernaya St.
4. Pressure pipeline along Kydyr-Ake St. (Kalinin St.) from Abdyrahmanova St. to Ozernaya St.
5. Pressure pipeline along Ozernaya St. from Kalinin St. to (incomplete – please clarify the endpoint if needed)

Section No. 5 – Abdyrahmanova St. – Length: 260 meters

Total length: 11,031 linear meters

Balykchy Mayor's Office (EA, IA)

Baigaziev A.B.:
Hello, dear residents of Balykchy and participants of today's meeting. I believe that active citizens have gathered here for this public hearing. More details about the project were

mentioned earlier. Today, we will discuss how the 11.031 km of sewer networks and 3 pumping stations (SPS) will impact the environment. I urge everyone to engage in an open discussion. Please do not hesitate to ask questions. If there are any concerns, raise them. The project engineers will now give a presentation, and after that, you should ask your questions. We, as the Implementing Agency, are here to listen and respond. Please actively participate in this hearing. We will do our best to answer all your questions.

Moderator:
The Balykchy City Kenesh, City Hall, and Vodokanal have provided great support by issuing the necessary resolutions and orders in a timely manner. On behalf of the project, we thank the Balykchy City Kenesh, the City Hall of Balykchy, and the Municipal Enterprise "Vodokanal."

Deputy Director of "Vodokanal" MP, Baktybekov S.B.:
Hello, dear residents of our city. On behalf of our entire Vodokanal team, who worked as one unit, I would like to thank the Asian Development Bank. First and foremost, we are grateful to all the team members and specialists involved in implementing the project. Indeed, this is a major achievement for our enterprise as the project provides for the construction of 11 km of sewer lines and 3 SPS across five streets. Again, thank you to ADB. We also appreciate the support from the Project Implementation Unit, PUSVIK. I would like to thank the city's urban planning department, the city council, and the mayor's office.

Moderator:
Thank you to Almaz Belekovich Baigaziev, Chief of Staff of Balykchy City Hall (Implementing Agency), and Samat Baktybekovich Baktybekov, Deputy Director of the Municipal Enterprise "Vodokanal."
We will now proceed with our agenda. The purpose of this public hearing is to prevent or mitigate the environmental and related social-economic impacts of the proposed activity. Presentations will be in Russian. Please listen carefully, and you can ask questions afterwards.

According to Government Resolution No. 60 of 2015, the procedure for conducting Environmental Impact Assessments (EIA) was approved. Today's hearing is part of that process and also a component of the installation of 6 street sewer lines. If you do not receive an answer today, you can submit your questions in writing, and we will respond within 30 days.

Moderator:
The floor is now given to the design engineer from LLC "Encon," Vitaly Pyatkin.

Design Engineer, LLC Encon, Vitaly Pyatkin:
In accordance with the technical assignment, the design organization LLC "Encon" has developed project documentation for the sewerage systems of urban streets in Balykchy.
The total length of the pipeline along all five streets is 11,031 meters and includes 3 SPS. Given the natural terrain, with a natural slope toward Ozernaya Street, the sewer system was designed as both gravity and pressure-based.

Before starting the design, representatives from LLC "Encon" and the Balykchy Vodokanal surveyed all five city streets planned for the sewer routes. Taking into account the existing utilities, electric poles, and transformer substations, it was decided to lay the sewer lines along one side of the street, with organized crossings to connect the opposite side and perpendicular streets to collect wastewater from the whole block.

This work needs to be done at this stage because after construction and restoration activities—such as road resurfacing and irrigation systems—it will no longer be practical to disturb the area

for further connections. During the design, we followed the standards of SN KR 40-02:2023 ("Wastewater Disposal. External Networks and Structures") and the requirements set by the operating organization Vodokanal, as they will be maintaining the system. For the convenience of operation, all these elements were taken into account and route designs were prepared for each street.

After laying the sewer routes, all related work must be completed: repairing damaged asphalt, restoring irrigation systems, replanting greenery, sidewalks, etc.—all of which have been included in the project scope.

Moderator:
Now we move on to the presentations. The floor is given to Zinina O.V.

Agenda	Responsible
Activity 1: Presentation and speech "Environmental Impact Assessment (EIA) of the Balykchy Sewerage System" Hello, thank you very much for attending our public hearing. I will present to you the Environmental Impact Assessment (EIA) for the construction project. Any human activity, including construction, impacts the environment—this includes the natural environment, air, soil, flora, fauna, and the social sphere. Kyrgyz legislation includes a number of laws regulating this process: • Constitution of the Kyrgyz Republic (2010); • Law "On Environmental Protection" (1999); • Law "General Technical Regulations on Environmental Safety" (2009); • Law "On Environmental Expertise" (1999); • Water Code (2005); • Law "On Waste from Production and Consumption" (2001); • Law "On the Protection and Use of the Plant World" (2001); • Law "On Urban Planning and Architecture of the Kyrgyz Republic"; • Law "On Accession of the KR to the UNECE Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (Aarhus Convention)" (2001). Since the project is financed by the Asian Development Bank (ADB), we must also follow ADB's Safeguard Policies. According to these policies, our project falls under Category "B," which requires a Preliminary Environmental Assessment and the development of an Environmental Management Plan (EMP). This means that environmental impacts are expected only during construction or in	Environmental Safeguards specialist of Encon Ltd: O.V. Zinina.

emergency situations.

This project does not affect protected areas, cultural heritage sites, or forest land, as the entire network is located within city limits. In addition to the Environmental Impact Assessment (EIA), an Environmental Management Plan (EMP) will be developed, outlining recommended preventive actions to mitigate any negative impact.

Let's look at the planned sequence of environmental actions and stakeholder participation. Here is how the Environmental Impact Assessment is generally conducted:

1. **Screening of facilities.** Environmental survey in the construction area involving the PIU and designers.
2. **Environmental Assessment.** Evaluation of environmental risks. The EMP includes an "Environmental Protection" section in line with Kyrgyz legislation. Participants: PIU, relevant authorities. *This is our current stage.*
3. **Contract signing with the contractor.** Including the EMP and environmental protection requirements in the contract. Participants: PIU, contractor.
4. **Construction phase.** Implementation of the EMP and compliance with environmental legislation. Participants: Contractor, PIU, ADB, local government, relevant agencies. *Monitoring by local authorities is mandatory.*
5. **Commissioning.** Completion checklists after construction. Participants: PIU, Contractor.
6. **Operation phase.** EMP includes recommendations for this stage. Participants: Operating organization (Vodokanal), PIU, local authorities.

Basis for Assessment:
We cannot just declare pollution; all assessments are based on the current background environmental conditions, prior to the start of construction. For example:

- Air quality currently does not exceed maximum allowable daily concentrations, and it must remain so during construction.
- Water quality also currently complies and must remain within safe limits. Monitoring will be conducted accordingly.

Environmental Impacts of Construction:

1. **Atmospheric Air**
   - *Impact Factor:* Operation of construction equipment (exhaust emissions).
     Mitigation Measures: Use only well-maintained equipment, avoid idling engines, and use low-emission machinery.
   - *Impact Factor:* Earthworks (dust generation).
     Mitigation Measures: Watering construction areas before and during earthworks (e.g., trench digging).

○ *Impact Factor:* Equipment operation (noise pollution). *Mitigation Measures:* Limit work to 8:00 AM – 6:00 PM; no more than 2 units of heavy machinery operating simultaneously. In sensitive zones, ensure noise does not exceed 70 dBA. 2. **Surface and Groundwater** ○ *Impact Factor:* Equipment operation (spillage of fuels and lubricants). *Mitigation Measures:* Use only technically sound equipment; refueling only in designated areas. ○ *Impact Factor:* Dust control on site. *Mitigation Measures:* Use non-potable water supplied by Vodokanal. ○ *Impact Factor:* Workers' activity. *Mitigation Measures:* Install bio-toilets; prevent wastewater by housing and feeding workers in specially designated construction camps. 3. **Soils** ○ *Impact Factor:* Equipment operation (landscape alteration, fuel spills). *Mitigation Measures:* Operate only within designated corridors; conduct technical reclamation post-construction; refuel only in assigned areas. ○ *Impact Factor:* Workers' activity (waste generation). *Mitigation Measures:* Provide waste containers on site and in camps; ensure timely waste removal. 4. **Flora and Fauna** ○ *Impact Factor:* Construction activity (noise, land alteration, excavation). *Mitigation Measures:* Limit work to 8:00 AM – 6:00 PM; max 2 heavy machines at a time; restrict operations to defined work areas. ○ *Impact Factor:* Clearing of sites (tree and shrub removal). *Mitigation Measures:* Plant new trees and shrubs to replace those cut down; plan sewer routes considering existing greenery. 5. **Social Environment** ○ *Impact Factor:* Equipment operation (noise). *Mitigation Measures:* Same as above—time limits and equipment quantity restrictions; maintain 70 dBA noise threshold in vulnerable zones. ○ *Impact Factor:* Public safety. *Mitigation Measures:* Install barriers and signage around hazardous areas; ensure safe passage through construction zones. ○ *Impact Factor:* Worker safety. *Mitigation Measures:* Provide personal protective equipment (PPE) including safety boots, helmets, gloves, protective clothing, goggles, and hearing protection in compliance with legislation.	

Activity 2: Presentation and Speech **"On Social Safeguard Measures"** Dear participants of today's hearing, once again, welcome! I would like to add another important aspect to today's presentation on the project. I want to inform you that all projects financed by international institutions, including this one supported by the Asian Development Bank (ADB), are governed by a policy developed through years of experience. This policy includes a range of requirements that must be fulfilled. ADB is committed to avoiding, minimizing, mitigating, and compensating for adverse impacts through well-designed and properly implemented plans and programs under its support. The ADB Safeguard Policy Statement sets out the objectives and principles of the policy, covering three key areas: 1. Environmental safeguards; 2. Involuntary resettlement safeguards; and 3. Indigenous peoples safeguards. This project does **not** affect any indigenous peoples groups, but it **does** involve environmental and social safeguard measures. **Objectives of the Involuntary Resettlement (IR) Safeguards:** • To avoid involuntary resettlement where feasible, and minimize it through project and design alternatives; • To enhance, or at least restore, the livelihoods of all displaced persons in real terms to pre-project levels; and • To improve the standards of living of displaced vulnerable groups. *Vulnerable groups include: affected poor households, households headed by women, elderly, or persons with disabilities, and landless households.* **ADB Safeguard Policy Requirements and Principles:** • Involuntary resettlement: objectives, principles, planning, and implementation; • Public consultation and information disclosure requirements; • Grievance Redress Mechanism (GRM); • Monitoring and reporting. Types of possible impacts may include: • Loss of land or access to land; • Physical displacement;	Social Safeguards specialist of Encon Ltd: O.V. Zinina.

• Assistance for vulnerable and severely affected households. All these impacts are covered under the legislation of the Kyrgyz Republic, but **not** to the extent required by international law and the ADB Safeguard Policy. **Key Legislative Acts of the Kyrgyz Republic Governing Land Acquisition and Resettlement:** • Constitution of the Kyrgyz Republic (2010); • Civil Code (May 8, 1996); • Land Code (June 2, 1999); • Law on the Management of Agricultural Land (January 11, 2001); • Law on State Registration of Rights and Related Transactions (December 22, 1998); • Law on the Procedure for Considering Citizens' Appeals (May 4, 2007); • Property Valuation Standards, mandatory for all appraisal activities in the Kyrgyz Republic (April 3, 2006). **Grievance Redress Process:** A **Grievance Redress Mechanism (GRM)** is in place. **Local-level resolution:** The Local Grievance Redress Committee (GRC) will review and prepare a case file for a local hearing and decision, and inform the complainant of the decision within **14 days** of receiving the complaint. **Central-level resolution:** If unsatisfied, the complaint will be submitted in writing to the Central GRC/Project Implementation Unit (PIU). The PIU's Safeguards Specialist will inform the complainant of the decision within **14 days** of receiving/transferring the complaint. **Monitoring and Reporting:** • The contractor reports to the PIU and the Design & Supervision Consultant (DSC); • The DSC reports to the PIU; • The PIU reports to ADB through the State Water Supply Department. **The presentation slides are attached.**	
	Moderator: PIU

Activity 3. Presentation by other interested participants (2 minutes each)	Manager

Clarifications and explanations of issues that arose during the public hearing and questions provided:

1.	Balykchy Resident	Tursalieva Nazgul: "Dear participants of the public hearing! Our city urgently needs a proper sewerage system! We live right on the shore of the lake, and the current situation with septic tanks is absolutely unacceptable. I have personally encountered problems due to the lack of proper sanitation. But even more importantly, we have a duty to preserve the ecology of Issyk-Kul — our main natural treasure! Sewerage is not just about convenience — it's a matter of safety: • Contaminated wastewater must not enter the soil or water; • We cannot risk the health of our children or the future of the lake. I urge all responsible authorities to accelerate the implementation of this project."
2.	Balykchy Resident	Chynar Sydykova: "I would like to note that the presentation on the Environmental Impact Assessment during the construction of the sewerage system was very well prepared — it was clear, accessible, and detailed. It is evident that the specialists have done serious work: • Potential risks to nature have been taken into account, • Mitigation measures have been proposed, • And everything is presented in a way that is understandable to residents. This gives confidence that the project will be implemented not only effectively, but also with care for the environment of our city. Thank you for your responsible approach!"
3.	Balykchy Resident	Baktygul Barakova: "Dear representatives of the Vodokanal, local authorities, and representatives of PIU, PMO, and IWMP! First of all, on behalf of the residents of our city, I would like to express sincere gratitude for your attention to the problems of Balykchy and for the opportunity to implement this important project. For many years, we have faced difficulties due to the lack of a modern sewage system, which has affected both the environment and our quality of life. That is why the start of work today is a real step forward for our city. What is especially valuable is that in the preparation of this project: • The opinions of local residents were taken into account,

		• Thorough environmental assessments were carried out, • And measures have been included to minimize the impact on Lake Issyk-Kul and other natural resources. We believe that through joint efforts, we can modernize our infrastructure while preserving the unique nature of our city."

After completing the public discussion, participants thanked the EA and the PMO, PIU and Encon Ltd. for providing clarification and holding the public hearing.

Moderator:	**K. Karasartov**
Minutes was prepared by:	Kachkynbek kyzy A.
Presentation is prepared by:	Zinina A.V.,

Appendix 3: IBAT Report

IBAT

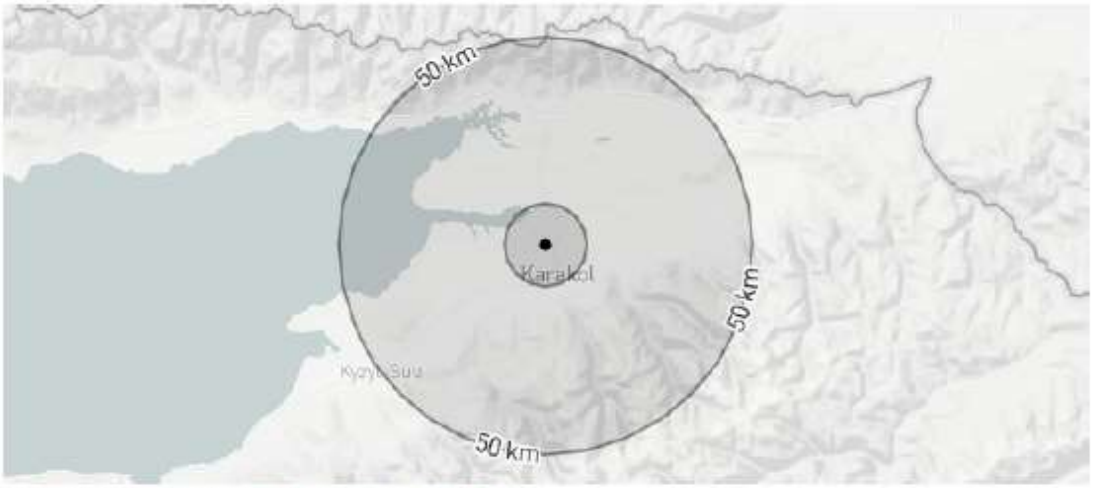
World Bank Group Biodiversity Risk Screen

KARAKOL

- **Country:** Kyrgyzstan
- **Location:** [42.5, 78.4]
- **Created by:** Sultan Bakirov

Overlaps with:

Protected Areas	50 km: 6	10 km: 2	1 km: 1	9
World Heritage (WH)	50 km: 0	10 km: 0	1 km: 0	0
Key Biodiversity Areas	50 km: 0	10 km: 1	1 km: 0	1
Alliance for Zero Extinction (AZE)	50 km: 0	10 km: 0	1 km: 0	0
IUCN Red List				5
Critical Habitat				Likely



Displaying project location and buffers: 1 km, 10 km, 50 km

WORLD BANK GROUP

This report is based on IFC Performance Standard 6 (PS6) but applies to World Bank Environmental and Social Standard 6 (ESS6)

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About this report

IBAT provides initial screening for critical habitat values. Performance Standard 6 (PS6) defines these values for critical habitat (PS6: para. 16) and legally protected and internationally recognized areas (PS6: para. 20). PS6 will be triggered when IFC client activities are located in modified habitats containing "significant biodiversity value," natural habitats, critical habitats, legally protected areas, or areas that are internationally recognized for biodiversity. References to PS6 and Guidance Note 6 (GN6) are provided to guide further assessment and detailed definitions where necessary. Please see https://www.ifc.org/ps6 for full details on PS6 and GN6.

The report screens for known risks within a standard 50km buffer of the coordinates used for analysis. This buffer is not intended to indicate the area of impact. The report can be used to:

- Scope risks to include within an assessment of risks and impacts
- Identify gaps within an existing assessment of risks and impacts
- Prioritize between sites in a portfolio for further assessment of risks and impacts
- Inform a preliminary determination of critical habitat
- Assess the need for engaging a biodiversity specialist
- Identify additional conservation experts or organizations to inform further assessment or planning

WARNING: IBAT aims to provide the most up-to-date and accurate information available at the time of analysis. There is however a possibility of incomplete, incorrect or out-of-date information. All findings in this report must be supported by further desktop review, consultation with experts and/or on-the-ground field assessment as described in PS6 and GN6. Please consult IBAT for any additional disclaimers or recommendations applicable to the information used to generate this report.

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Priority Species

Habitat of significant importance to priority species will trigger critical habitat status (See PS6: para 16). IBAT provides a preliminary list of priority species that could occur within the 50km buffer. This list is drawn from the IUCN Red List of Threatened Species (IUCN RL). This list should be used to guide any further assessment, with the aim of confirming knownor likely occurrence of these species within the project area. It is also possible that further assessment may confirm occurrence of additional priority species not listed here. It is strongly encouraged that any new species information collected by the project be shared with species experts and/or IUCN wherever possible in order to improve IUCN datasets.

IUCN Red List of Threatened Species - CR & EN

The following species are potentially found within 50km of the area of interest.
For the full IUCN Red List please refer to the associated csv in the report folder.

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Oxyura leucocephala	White-headed Duck	AVES	EN	decreasing	Terrestrial, Freshwater
Haliaeetus leucoryphus	Pallas's Fish-eagle	AVES	EN	decreasing	Terrestrial, Freshwater
Neophron percnopterus	Egyptian Vulture	AVES	EN	decreasing	Terrestrial, Freshwater
Aquila nipalensis	Steppe Eagle	AVES	EN	decreasing	Terrestrial
Falco cherrug	Saker Falcon	AVES	EN	decreasing	Terrestrial, Marine, Freshwater

Restricted Range Species

There are no restricted range species to show for this report.

IBAT

Biodiversity features which are likely to trigger Critical Habitat

Protected Areas

The following protected areas are found within 1 km and 10 km and 50 km of the area of interest.
For further details please refer to the associated csv file in the report folder.

Area name	Distance	IUCN Category	Status	Designation	Recommendation
Issyk Kul	1 km	Not Applicable	Designated	UNESCO-MAB Biosphere Reserve	Assess for biodiversity risk
Issyk-Kul	10 km	Ia	Designated	State Nature Reserve	Assess for critical habitat
Karakol	10 km	II	Designated	Nature Park	Assess for critical habitat
Alma-Atinskiy	50 km	IV	Designated	Zakaznik	Assess for biodiversity risk
Dzhety-Oguz	50 km	IV	Designated	Wildlife Refuge	Assess for biodiversity risk
Ele Alatau	50 km	II	Designated	National Nature Park	Assess for critical habitat
Isyk-Kul State Reserve with the Lake Isyk-Kul	50 km	Not Reported	Designated	Ramsar Site, Wetland of International Importance	Assess for biodiversity risk

Area name	Distance	IUCN Category	Status	Designation	Recommendation
Sarychat-Ertash NR	50 km	Ia	Designated	State Nature Reserve	Assess for critical habitat
Teploklyuchinski	50 km	IV	Designated	Wildlife Refuge	Assess for biodiversity risk

Key Biodiversity Areas

The following key biodiversity areas are found within 1 km and 10 km and 50 km of the area of interest.
For further details please refer to the associated csv file in the report folder.

Area name	Distance	IBA	AZE	Recommendation
Eastern Issyk Kul Lake	10 km	Yes	No	Assess for critical habitat

Species with potential to occur

Area Taxonomic group	Total assessed species	Total (CR, EN & VU)	CR	EN	VU	NT	LC	DD
AVES	261	11	0	5	6	11	239	0
MAMMALIA	62	1	0	0	1	4	56	1
ACTINOPTERYGII	2	0	0	0	0	0	2	0
AMPHIBIA	1	0	0	0	0	0	1	0
INSECTA	16	0	0	0	0	0	15	1

Area Taxonomic group	Total assessed species	Total (CR, EN & VU)	CR	EN	VU	NT	LC	DD
MALACOSTRACA	2	0	0	0	0	0	2	0
BIVALVIA	2	0	0	0	0	0	1	1
GASTROPODA	10	0	0	0	0	0	9	1
REPTILIA	9	0	0	0	0	0	9	0
POLYPODIOPSIDA	1	0	0	0	0	0	1	0
MAGNOLIOPSIDA	21	0	0	0	0	0	20	1
LILIOPSIDA	33	0	0	0	0	0	33	0
AGARICOMYCETES	1	0	0	0	0	0	1	0

Recommended citation

IBAT PS6 & ESS6 Report. Generated under licence 1399-11592 from the Integrated Biodiversity Assessment Tool on 05 October 2020 (GMT). www.ibat-alliance.org

Recommended Experts and Organizations

For projects located in critical habitat, clients must ensure that external experts with regional expertise are involved in further assessment (GN6: GN22). Clients are encouraged to develop partnerships with recognized and credible conservation organizations and/or academic institutes, especially with respect to potential developments in natural or critical habitat (GN6: GN23). Where critical habitats are triggered by priority species, species specialists must be involved. IBAT provides data originally collected by a large network of national partners, while species information is sourced via the IUCN Red List and affiliated Species Specialist Groups. These experts and organizations are listed below. **Please note that this is not intended as a comprehensive list of organizations and experts. These organizations and experts are under no obligation to support any further assessment and do so entirely at their discretion and under their terms. Any views expressed or recommendations made by these stakeholders should not be attributed to the IFC or IBAT for IFC partners.**

Birdlife Partners

URL: https://www.birdlife.org/worldwide/partnership/birdlife-partners

Directory for Species Survival Commission (SSC) Specialist Groups and Red List Authorities

URL: https://www.iucn.org/commissions/ssc-groups

Appendix 4. : Gosstroy order 140 for Grievance Redress Mechanism

КЫРГЫЗ РЕСПУБЛИКАСЫНЫН МИНИСТРЛЕР КАБИНЕТИНЕ КАРАШТУУ АРХИТЕКТУРА, КУРУЛУШ ЖАНА ТУРАК ЖАЙ-КОММУНАЛДЫК ЧАРБА МАМЛЕКЕТТИК АГЕНТТИГИ

ГОСУДАРСТВЕННОЕ АГЕНТСТВО АРХИТЕКТУРЫ, СТРОИТЕЛЬСТВА И ЖИЛИЩНО-КОММУНАЛЬНОГО ХОЗЯЙСТВА ПРИ КАБИНЕТЕ МИНИСТРОВ КЫРГЫЗСКОЙ РЕСПУБЛИКИ

STATE AGENCY FOR ARCHITECTURE, CONSTRUCTION AND PUBLIC UTILITIES UNDER THE CABINET OF MINISTERS OF THE KYRGYZ REPUBLIC

ORDER

31.12.2022 №140 Bishkek

On the establishment of commissions to consider complaints and applications of citizens affected by the "Issyk-Kul Wastewater Management Project", funded by Asian Development Bank

With a view to ensuring coordinated interaction between public authorities and local self-government, as well as timely consideration of complaints and applications of citizens affected by the Issyk-Kul Wastewater Management Project (hereinafter referred to as "IWMP"), funded by Asian Development Bank (hereinafter referred to as "ADB"), in accordance with the Law of the Kyrgyz Republic "On the Procedure for Considering Citizens' Appeals" dated May 4, 2007 #67, the ADB's Safeguard Policy Statement, guided by paragraph 3 of subitem 3 of item 13 of the Regulation on the State Agency for Architecture, Constructio and Public Utilities under the Cabinet of Ministers of the Kyrgy Republic (hereinafter referred to as " Gosstroy"), approved by Resolutio of the Cabinet of Ministers of the Kyrgyz Republic dated 25.06.202 #44, **I order:**

1. To establish commissions to consider complaints an applications of citizens arising from the implementation of the IWMP o social and environmental safety measures and gender issues:
- at the central level according to Annex #1;
- at the local level, in the city of Karakol, according to Annex №2
- at the local level, in the city of Balykchy, according to Annex №3

2. To approve the Regulation on the commissions for th consideration of complaints and applications of citizens subject t impacts within the framework of IWMP in accordance with Annex # 4

3. Commissions should ensure timely consideration and adoptio of appropriate decisions on complaints and applications of citizens o social and environmental safety measures and gender issues during th implementation of IWMP.

4. Control over the execution of this order should be entrusted t the Deputy Director of Gosstroy M.A. Akmataliev.

Director **T. Satyshev**

Annex №1 to the Order of the Gosstroy

31.12.2022 №140

Composition of the Commission for the consideration of complaints and applications at the central level:

1. Deputy Director of the State Agency for Architecture, Construction and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic - Chairman of the Commission;
2. First Deputy Plenipotentiary Representative of the President of the Kyrgyz Republic in Issyk-Kul Oblast - Deputy Chairman of the Commission;
3. Deputy Director of the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic;
4. Head of the Drinking Water Supply and Sewerage Development Unit of the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic;
5. Representative of the Consulting Company of IWMP;
6. Environmental Specialist of the PMO IWMP;
7. Social Safeguard and Resettlement Specialist of the PMO IWMP.

Annex №2 to the Order of the Gosstroy

31.12.2022 №140

Composition of the Commission for the consideration of complaints at the local level in the city Karakol

1. First Vice-Mayor of Karakol – Chairman of the Commission (by agreement)
2. Head of the Municipal Property Department of Karakol city - Deputy Chairman of the Commission (by agreement);
3. Representative of the Karakol-Aksu Branch of the State Institution «Cadastre»;
4. Representative of the Issyk-Kul Territorial Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic;
5. Representative of the Issyk-Kul Regional Department for Urban Planning and Architecture of Gosstroy;
6. Head of the Boru-Bash Ayil Okmotu (by agreement);
7. Director of the ME «Vodokanal» (by agreement);
8. Isanov Sabyrbek Dolonovich – resident of Karakol city (by agreement);
9. Kaliev Baktiar Nazarbaevich – resident of the Karakol city (by agreement);
10. Representative of the Consulting Company of IWMP;
11. Manager of the Project Implementation Unit of IWMP.

Annex №3 to the Order of the Gosstroy

31.12.2022 №140

Composition of the Commission for the consideration of complaints at the local level in the city Balykchy

1. First Vice-Mayor of Balykchy – Chairman of the Commission (by agreement);
2. Head of the Municipal Property Department of Balykchy – Deputy Chairman of the Commission (by agreement);
3. Representative of the Ton Branch of the State Institution «Cadastre» (by agreement);
4. Representative of the Balykchy Branch of the State Institution «Cadastre» (by agreement);
5. Representative of the Issyk-Kul Territorial Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic;
6. Representative of the Department for Urban Planning and Architecture of Balykchy city;
7. Director of the ME «Vodokanal» of Balykchy (by agreement);
8. Representative of the Consulting Company of IWMP;
9. Manager of the Project Implementation Unit of IWMP.

Annex №4 to the Order of the Gosstro

31.12.2022 №14

REGULATION
on Commissions to consider complaints and applications of citizens affected by the Issyk-Kul Wastewater Management Project funded by Asian Development Bank

Chapter 1. General Provisions

1. This Regulation on Commissions for the consideration c complaints and applications of citizens affected by the Project "Issyk Kul Wastewater Management" (hereinafter referred to as "IWMP funded by Asian Development Bank (hereinafter referred to as "ADB" (hereinafter referred to as the "Regulation") regulates the procedure an organization of work of commissions for the consideration of complain and applications of citizens affected by the IWMP (hereinafter referr to as the "Commission").

2. Commissions are established at the central and local levels (the cities of Karakol and Balykchy). Commissions are collegial bodi that carry out their activities on a periodic basis, on a voluntary basis.

3. In their activities, the Commissions are guided by th Constitution of the Kyrgyz Republic, laws and other regulatory legal ac of the Kyrgyz Republic, the ADB's Safeguard Policy Statement, th international treaties to which the Kyrgyz Republic is a part international treaties entered into force in accordance with the procedu established by law, to which the Kyrgyz Republic is a party, and th Regulation.

Chapter 2. Aim and Tasks of the Commissions

4. The aim of the activity of the Commissions is to consider complaints and applications of citizens who fall under the impact of the IWMP.

5. The task of the Commissions is to consider applications and complaints of citizens on social and environmental safety measures and gender issues within the framework of the IWMP.

Chapter 3. Formation of the composition of the Commission at the central level

6. The Commission at the central level consists of:

1. Deputy Director of the State Agency for Architecture, Construction and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic - Chairman of the Commission;
2. First Deputy Plenipotentiary Representative of the President of the Kyrgyz Republic in Issyk-Kul Oblast - Deputy Chairman of the Commission;
3. Deputy Director of the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic;
4. Head of the Drinking Water Supply and Sewerage Development Unit of the Department of Drinking Water Supply and Sewerage Development under the State Agency for Architecture, Construction and Public Utilities under the Cabinet of Ministers of the Kyrgyz Republic;
5. Representative of the Consulting Company of IWMP;
6. Environmental Specialist of the PMO IWMP;
7. Social Safeguard and Resettlement Specialist of the PM IWMP.

Chapter 4. Formation of the composition of the Commission at the local level in the cities of Karakol and Balykchy

7. The Commission of Karakol city consists of:

1. First Vice-Mayor of Karakol – Chairman of the Commissio (by agreement)
2. Head of the Municipal Property Department of Karakol city Deputy Chairman of the Commission (by agreement);
3. Representative of the Karakol-Aksu Branch of the Stat Institution «Cadastre»;
4. Representative of the Issyk-Kul Territorial Department of th Ministry of Natural Resources, Ecology and Technic Supervision of the Kyrgyz Republic;
5. Representative of the Issyk-Kul Regional Department fo Urban Planning and Architecture of Gosstroy;
6. Head of the Boru-Bash Ayil Okmotu (by agreement);
7. Director of the ME «Vodokanal» (by agreement);
8. Isanov Sabyrbek Dolosovich – resident of Karakol city (b agreement);
9. Kaliev Baktiar Nazarbaevich – resident of the Karakol city (b agreement);
10. Representative of the Consulting Company of IWMP;
11. Manager of the Project Implementation Unit of IWMP.

8. The Commission of Balykchy city consists of:

1. First Vice-Mayor of Balykchy – Chairman of the Commission (by agreement);
2. Head of the Municipal Property Department of Balykchy – Deputy Chairman of the Commission (by agreement);
3. Representative of the Ton Branch of the State Institution «Cadastre» (by agreement);
4. Representative of the Balykchy Branch of the State Institution «Cadastre» (by agreement);
5. Representative of the Issyk-Kul Territorial Department of the Ministry of Natural Resources, Ecology and Technical Supervision of the Kyrgyz Republic;
6. Representative of the Department for Urban Planning and Architecture of Balykchy city;
7. Director of the ME «Vodokanal» of Balykchy (by agreement);
8. Representative of the Consulting Company of IWMP;
9. Manager of the Project Implementation Unit of IWMP.

Chapter 5. Functions of Commissions

9. To solve the assigned tasks, the Commissions perform the following functions:

1) consider applications/complaints of citizens affected by the IWMP on gender, environmental issues and social protection measures, and resettlement;

2) monitor the implementation of decisions made by the Commissions.

10. Chairmen of the Commissions perform the following functions:

1) preside over the meetings of the Commissions and organize its work;

2) have the right of a decisive vote when voting at the meetings of the Commissions;

3) approve the agenda of the meetings of the Commissions;

4) appoint the date, time and place of the meetings of the Commissions;

5) undertake control over the execution of the decisions of the Commissions.

Chapter 5. Rights of the Commissions

11. Commissions have the right to:

1) to hold meetings as soon as applications and complaints are received;

2) to check the materials (documents) on the received applications/complaints submitted for consideration to the Commissions;

3) in accordance with the established procedure, request and receive information from state bodies, local self-government bodies and organizations, regardless of their organizational and legal forms and forms of ownership;

4) if necessary, invite representatives of state bodies, local self-government bodies, civil society, as well as citizens who have filed an application/complaint to the meetings of the Commissions.

12. Members of the Commissions have the right to:

1) declare self-recusal or inform the Chairmen of the Commissions about the existence of circumstances for recusal in respect of one or more members of the Commissions, if there are circumstances leading to a conflict of interests, if any have become known;

2) notify the Chairmen of the Commissions about the existence of an attempt to influence the result of the work of the Commissions by persons participating in the consideration of the application/complaint or other interested persons.

Chapter 6. Organization of the activity of the Commissions and the procedure for the consideration of complaints and applications under the Grievance Redress Mechanism

13. Grievance Redress Mechanism

Step	Action level	Process	Term
1	Decision of the Local Contact Person (LCP)	- At the initial stage, the LCP listens to the affected person and tries to offer acceptable solutions. If the affected person is not satisfied with the decisions, he/she submits a complaint in writing to the local Commission for the Consideration of Complaints and Applications within 3 days.	3 days
2	Decision at the local level	- After receiving the written complaint, the LCP will review and prepare the case file for the local hearing and the Commission's decision. The official hearing will be held by the Commission on the day set by the LCP in agreement with the affected person. On the day of the hearing, the affected person must appear before the Commission and present evidence in support of his claim. The LCP will record the affected person's statements and document all the evidence. The decision of the majority of the Commission members will be considered final by the Commission and will be prepared by the LCP and signed by other members of the Commission. The case will be updated and the LCP will inform the affected person about the decision within 14 days. If the affected person is not satisfied with the decision, the LCP will file a complaint in writing to the Commission at the central level with an opinion and supporting documents prepared at the local level.	14 days
3	Decision at the central level	- After receiving a written complaint, the Chairman of the Commission at the central level will review and prepare the file of the case for hearing and resolution of the Commission. The official hearing will be held on the day agreed by the Chairman of the Commission and the affected person. The	14 дней

Step	Action level	Process	Term
		Commission members will contact the applicant and leave for his/her village. The Social Safeguard and Resettlement Specialist of the PMO will record the affected person's statements and document all the evidence. The decisions of the majority of the members will be considered final by the Commission at the central level and will be prepared by the Chairman and signed by other members. The case will be updated, and the Social Safeguard and Resettlement Specialist of the PMO will inform the affected person about the decision within 14 days after filing.	

14. The Commissions carry out their activities in the form of meetings.

15. The meetings of the Commissions are considered competent if at least half of its members are present at them, while the members of the Commissions participate in its meetings without the right of replacement.

16. The meetings of the Commissions are chaired by its Chairmen, and in their absence - by the Deputy Chairmen of the Commissions.

17. If there is no quorum at the meetings of the Commissions or if additional materials are required to resolve a disputed issue, or other measures are taken, the terms of consideration of the application/complaint by the Commission may be exceptionally extended, but not more than 25 calendar days.

18. The decisions of the Commission are adopted by open vote and are considered adopted if a majority of the members of the Commissions present voted for them.

19. Minutes are kept at the meetings of the Commissions.

Appendix 5: Conclusion received from State Ecological Expertise

"КЫРГЫЗ РЕСПУБЛИКАСЫНЫН ЖАРАТЫЛЫШ РЕСУРСТАРЫ, ЭКОЛОГИЯ ЖАНА ТЕХНИКАЛЫК КӨЗӨМӨЛ МИНИСТРЛИГИНИН ЫСЫК-КӨЛ РЕГИОНАЛДЫК БАШКАРМАЛЫГЫ" МЕКЕМЕСИ
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ИНН 02309202210190

УЧРЕЖДЕНИЕ "ИССЫК-КУЛЬСКОЕ РЕГИОНАЛЬНОЕ УПРАВЛЕНИЕ МИНИСТЕРСТВА ПРИРОДНЫХ РЕСУРСОВ, ЭКОЛОГИИ И ТЕХНИЧЕСКОГО НАДЗОРА КЫРГЫЗСКОЙ РЕСПУБЛИКИ"
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ИНН 02309202210190

21.05.2025 №01-10/912
№

Утверждаю:
Начальник учреждения
«Иссык- Кульское региональное управление МПРЭТН Кыргызской Республики»
М.Б.Кыштобаев
«__» 2025 г.

Заключение
государственной экологической экспертизы на проект строительства канализационных сетей в г.Балыкчы

1.Общие сведения

На рассмотрение государственной экологической экспертизы в учреждение «Иссык-Кульское региональное управление Министерства природных ресурсов, экологии и технического надзора» представлен проект на строительство канализационных сетей в г.Балыкчы, в следующем составе:

- Проекты – 4 книг, выполненный ОсОО «ЭНКОН», лицензия серии КРЦ-1-2 №010941 от 07.08.2023г;
- Рабочий проект «Охрана окружающей среды», выполненный ОсОО «ЭНКОН», лицензия серии КРЦ-1-2 №010941 от 07.08.2023г;
- Специалист по охране окружающей среды Зинина Ольга Валерьевна Сертификат ПР-10-1 №001542;

Инициатором проекта является Балыкчинское муниципальное предприятие «Водоканал»

К проектным материалам приложены:

- ГЗ №03-5/64 от 23.04.2025г, выполненный Балыкчинским городским управлением по градостроительству и архитектуре;

-Постановление мэрии г.Балыкчы за №17 от 21.02.2025г;
-Государственный акт о праве бессрочного пользования земельным участком серия «Б» №063404 от27.02.2025г;
-Государственный акт о праве бессрочного пользования земельным участком серия «Б» №063405 от28.02.2025г;
-Государственный акт о праве бессрочного пользования земельным участком серия «Б» №063403 от27.02.2025г;
-Отчет о выполнении инженерно-геодезических изысканий по объекту: Строительство канализационных сетей в г.Балыкчы.
-Свидетельство о государственной перерегистрации юридического лица серия ГПР №076892 ;
-Устав Балыкчинского муниципального предприятия «Водоканал»;
-Заключение СЭН г.Балыкчы за №04-1/112,111,110,109 от 14.04.2025г;
-ГУ МП «Благоустройство и санитарная очистка» при мэрии г.Балыкчы за №01-08-107,106,109,105,108 от 14.04.2025г;
-ГУ МП «Зеленого хозяйства» при мэрии г.Балыкчы за №01-8/108,110,109,107,106 от 18.04.2025г;
-ГЗ ИПЭС БРЭС за №97 от 15.04.2025г;
-ГУ ИПЭС за №218-127/175,176 от 05.03.2025г;
-ГЗ БМП «ВОДОКАНАЛ» за №01-4/227,96,228,230,222 от 15.04.2025г;
-ГЗ ОЧС по г.Балыкчы за №126,124,122,125,123 от 25.04.2025г;
-Заключение уч. «ИКРУ МПРЭ ТН КР» за №143-1/2025,141,140,142,144 от 14.04.2025г;
-ГУ НК «Кыргыз темир жолу» за №07-3/435 от 31.01.2025г
- Ситуационный план

Краткое описание проекта

Данным проектом предусмотрена прокладка канализационных сетей из трубы двухслойной гофрированной канализационной ТУ2248-001-73011750-2013 согласно техническому заданию. Минимальная глубина заложения в черте города принята из условий требования СН КР 30-01-2020, что минимальное расстояние в свету между водопроводом и канализаций должно быть 200мм, если канализация проходит ниже водопровода.

Укладка канализационных сетей предусматривается по следующим участкам:

Участок №1 ул.Бектурова (Спортивная) протяженностью:
- Самотечной линией Д200мм строительной длиной – 1466м;
- Самотечной линией Д250мм строительной длиной – 158,0м;
- Напорной линией Д200мм строительной длиной – 524,0м в 2 линии;
- Установка КНС

Участок №2 ул.Западная протяженностью:
- Самотечной линией Д200мм строительной длиной – 2607м;
- Самотечной линией Д250мм строительной длиной – 983,0м;

Участок №3 ул. Ж.Султанова (Первомайская) протяженностью:
- Самотечной линией Д200мм строительной длиной – 1776м;
- Напорной линией Д90мм строительной длиной – 459,0м в 2 линии;
- Установка КНС.

Участок №4 ул.Кыдыр-Ake (Калинина) протяженностью:
- Самотечной линией Д200мм строительной длиной – 2108,0м;
- Напорной линией Д110мм строительной длиной – 690,0м в 2 линии;
- Установка КНС.

Участок №5 ул.Абдрахманова протяженностью:

- Самотечной линией Д500мм строительной длиной – 260,0м.

В связи с особенностями рельефа на участках ул.Бектенова, ул.Султанова, ул.Кыдыр-Ake предусматривается сбор стоков в самотечном режиме с устройством канализационных насосных станций подземного типа на каждый участок отдельно. Канализационная насосная станция представляет собой герметичную емкость, выполненную из стеклопластика. Напорная линия от канализационной насосной станции выполняется из труб ПЭ по ГОСТ 18599-2001 Д90мм на участке улю Султанова, Д110мм на участке Кыдыр-Ake и диаметром 200мм на участке ул.Бектурова в 2 линии. На случай аварии на напорном участке канализационной насосной станции устанавливается распределительный т колодец, в котором располагается запорно-регулирующая арматура для переключения линий напорной сети.

Проектом предусматривается объемы работ по восстановлению при предполагаемом строительстве существующего дорожного покрытия, а также элементов уличного благоустройства. (проведение технической рекультивации, а также посадка деревьев взамен вырубленных)

Воздействие строительства на атмосферный воздух.

В процессе проведения работ по строительству предусматриваются выбросы загрязняющих веществ в атмосферный воздух от земляных, сварочных работ и работе строительной техники.

Земляные работы включают в себя выемочно-погрузочные, автотранспортные, планировочные работы.

Наименование ЗВ	Объем выбросов ЗВ (т)
Углеводороды	0,3433
Окиси серы	0,0262
Окиси углерода	0,21333
Оксид азота (2)	0,0413
Оксид азота (4)	0,25494
Пыль неорганическая	1,068
Пыль неорганическая в пересчете на SiO2	0,00004
Сажа	0,0358
Оксид марганца	0,000023
Оксид железа	0,00027
Фтористый водород	0,00002
Всего:	1,983223

Общие объемы выбросов загрязняющих веществ в атмосферный воздух определены в тоннах за период проведения строительных работ.

При проведении работ предполагается использование экскаваторов, бульдозеров, самосвалов, автокрана.

При определении объемов выбросов от транспортных работ учтено выделение пыли в результате взаимодействия колес автотранспортных средств с полотном дороги.

Сдув пыли с поверхности материала, погруженного в кузов машины, не учитывался в связи с тем, что груженный материал перед его перевозкой предусматривается плотно укрывать брезентом.

С целью уменьшения выбросов пыли в атмосферный воздух от производства земляных работ предусматривается регулярное орошение технической водой производственных площадок и полотна землевозной дороги в теплое время. Воду предполагается брать из местных водотоков.

В период проведения строительных работ будет организован контроль за соответствием параметров транспортных средств в части состава отработавших газов, шума, вибрации и других воздействий на окружающую среду установленным стандартам и техническим условиям предприятия-изготовителя.

Техническое обслуживание автотранспортного оборудования будет включать своевременную регулировку системы подачи и ввода топлива, контрольные и регулировочные работы по системе питания, зажигания и газораспределительному механизму двигателя. Эти меры обеспечивают полное сгорание топлива, снижают его расход. Значительно уменьшают выброс токсичных веществ с отработанными газами.

В целом при строительстве на атмосферный воздух прогнозируется как воздействие низкой значимости (КОП=3).

Воздействие на водные объекты.

Для охраны подземных и поверхностных вод необходимо выполнение следующих мероприятий:

- сбор использованных обтирочных материалов (ветоши) в специальной закрывающейся водонепроницаемой таре при технике и утилизация совместно с отходами ТБО;
- при строительстве сохранен естественный гидрологический режим стока поверхностных вод;
- спуск бытовых стоков должен отсутствовать, сбор в герметические емкости;
- перепланировка участка трассы строительства не должна производиться;
- максимальное использование существующих проездов для движения техники;
- максимальное использование электроинструментов и оборудования взамен механизмов, работающих на жидком топливе;
- применение только технически исправных машин и механизмов, применения исключающих подтеки нефтепродуктов;
- в прибрежно-защитных зонах водотоков работы проводятся без применения дорожной техники.
- поддержание в чистоте площадки строительства и прилегающей территории, подъездов и внутренних проездов при прокладке трубопроводов за счет санитарной уборки и использования передвижных мусоросборных контейнеров;
- исключение сброса в дождевые стоки отработанных нефтепродуктов за счет отказа от организации мест хранения ГСМ;
- исключение сброса с поверхностный сток нефтепродуктов за счет организации заправки автотранспорта ГСМ за пределами водоохранной зоны на стационарных АЗС и дорожной техники с использованием передвижных АЗС и поддонами для сбора переливов (проливов);
- локализация строительной площадки – ограждение на период СМР;
- упорядочение складирования строительных материалов – только за пределами водоохранной зоны, в специально отведенном месте с последующей рекультивацией участка;

- совмещение строительно-монтажных работ позволяет выполнить строительство переходов через водные объекты в оптимальные сроки с учетом природоохранных требований и с минимальным ущербом экосистеме в части работ;
- учет образующихся объемов сточных вод.

Выводы и предложения.

Проектом предусматривается выполнение ряда природоохранных мероприятий, а именно:
- строительные работы производить в пределах отведенного земельного участка с использованием существующих дорог;
- снятый растительный грунт складируется на отдельной площадке, используется для озеленения территории;
- комплектация парка техники машинами с уменьшенным значением удельных выбросов веществ в атмосферу;
- сбор отходов мусора производится после каждой рабочей смены с последующим складированием их в специальных емкостях (контейнерах) в специально отведенных местах, с последующей утилизацией специализированным организациям имеющим лицензию на этот вид деятельности;
- вывоз мусора и бытовых отходов осуществляется в герметичных металлических контейнерах мусоросборными машинами в централизованном порядке.

Проведение на проектной стадии оценки воздействия объекта намечаемой деятельности на окружающую природную среду позволяет сделать следующие выводы:
- строительные работы проводимые при строительстве согласно произведенным расчетам можно отнести к 3 категории опасности;
- размещение объекта не приведет в сверхнормативным воздействиям на природные водные объекты и почвенный покров прилегающих территорий;
- в результате строительства будут образовываться отходы 4-5 категории опасности;
- обустроенные в соответствии с представленными рекомендациями места временного накопления отходов не будут являться источниками сверхнормативного воздействия на компоненты окружающей среды.
- проектируемый объект на рассматриваемом участке не вызовет негативного воздействия на флору и фауну окружающих территорий.
- редкие виды растений и животных на указанном участке отсутствуют.

Мероприятия по охране окружающей среды:

- Предусмотреть эффективную защиту отходов от воздействия атмосферных осадков;
- Отходы должны храниться в специальных металлических контейнерах, установленных на площадке с твердым покрытием;
- Отходы следуют передавать для захоронения в полигоны, отвечающие требованиям экологической безопасности;
- Сбор использованных обтирочных материалов в специальной закрывающейся водонепроницаемой таре при технике и утилизация совместно с отходами ТБО;
- При строительстве сохранить естественный гидрологический режим стока поверхностных вод;
- Спуск бытовых стоков должен отсутствовать;
- Перепланировка участка трассы строительства не должна производиться;
- Поддержание в чистоте площадки строительства и прилегающей территории.

- Обслуживание, ремонт и заправка топливом автомобилей и тяжелой техники производить в гаражах/мастерских на внеплощадочных объектах;
- Не хранить технические масла, топливо и другие токсичные материалы на объектах строительства;
- Избегать применения устаревшей тяжелой техники и транспортных средств, превышающих уровень шума и выхлопных газов;
- Доставка песка и других сыпучих материалов на объект по мере необходимости, не складировать на объекте;
- В процессе земляных работ необходимо периодическое проведение гидропылеподавления;
- Запрещается слив любых загрязняющих веществ в воду и на почву;
- Строительные работы производить в пределах отведенного земельного участка с использованием существующих дорог;
- Снятый растительный грунт складировать на отдельной площадке для использования озеленения территории.

На участке разработать проект благоустройства прилегающей территории с максимальным озеленением и благоустройством свободных от застройки участка. Необходимо принять меры по защите существующей растительности от случайной и намеренной порчи.

Если имеется необходимость порубки зеленых насаждений, то данный вопрос требует получения разрешения в органах охраны окружающей среды.

Любые технологические изменения проекта должны быть согласованы и утверждены в письменном виде с учреждением ИКРУ МПРЭТН КР.

Рассмотрев представленный проект на строительство канализационных сетей в г.Балыкчы, учреждение Иссык-Кульское региональное управление МПРЭТН Кыргызской Республики выносит положительное заключение.

Председатель комиссии:
Заведующий отдела _____ **А.Асамбаев**

Главный специалист _____ М.Кулатаев

Специалист _____ А.Женишбекова

Независимый эксперт _____ Р.Кысанов

Представитель мэрии г. Балыкчы _____ У. Шукалов