

City of Bishkek & European Bank
for Reconstruction & Development
(EBRD)

**Bishkek Solid Waste Management
Project**

Non-technical Summary

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

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Abbreviations

BADS	Bishkek Authorised Disposal Site
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ESAP	Environmental and Social Action Plan
ESMMP	Environmental and Social Management and Monitoring Plan
ESIA	Environmental and Social Impact Assessment
FS	Feasibility Study (for the proposed Bishkek Solid Waste Management Project)
LRF	Livelihood Restoration Framework
LRP	Livelihood Restoration Plan
MBT	Mechanical-biological Treatment
NTS	Non-Technical Summary
PAPs	Project Affected Persons
PRs	Performance Requirements
RF	Resettlement Framework
SEP	Stakeholder Engagement Plan
SPV	Special Purpose Vehicle ‘Bishkek Sanitary Landfill’
SPZ	Sanitary Protection Zone

1 Introduction

The City of Bishkek (the ‘City’) seeks to improve its municipal solid waste (‘MSW’) management system and has been working with the European Bank for Reconstruction and Development (the ‘EBRD’ or the ‘Bank’), to invest in a viable development project. The proposed Bishkek Solid Waste Management Project (the ‘Project’) comprises a sovereign loan of EUR 11 million and a grant of EUR 11 million to the Kyrgyz Republic to be on-lent to the City for the benefit of the municipal solid waste management company Tazalyk (‘Tazalyk’) and a Special Purpose Vehicle ‘Bishkek Sanitary Landfill’ (the ‘Company’ or ‘SPV’). The loan agreement was signed in 2013.

The Bank commissioned a Feasibility Study (the ‘FS’) completed in 2013 and an Environmental and Social Impact Assessment (ESIA) that was completed in 2012. The FS determined a priority investment programme, evaluated its benefits, and assessed a proposed site for the new landfill, including assessing its environmental and social impacts. Since then, the City has taken a decision to use a different site for the new landfill to the north of the existing dumpsite, rather than the site assessed in the FS.

To support the Project, Ove Arup and Partners International Ltd. (the ‘Consultant’ or ‘Arup’) have been appointed by the City to undertake an Environmental and Social gap analysis for the newly proposed site and update the necessary technical, environmental, and social studies and plans where practicable, or recommend further action as required, to move the Project proposals in line with the EBRD’s Environmental and Social Policy (ESP, 2014) and its Performance Requirements (PRs), as well as applicable national and international requirements.

This Non-technical Summary (NTS) presents the main findings and conclusions of the Environmental and Social gap analysis, and other documentation developed to provide updated information on Project’s environmental and social impacts. The disclosure package will be available throughout the Project’s life.

2 Project Overview

Project History

The current waste management system in Bishkek suffers from underinvestment in both infrastructure and vehicles and lacks any formal recycling functions. Although the current system is functioning and the waste is collected and transported from the City to the municipal disposal site, part of the vehicle fleet is obsolete, suffers from frequent breakdowns, and the current disposal site needs rehabilitation.

The Bishkek Solid Waste Management Project targets the improvement of the solid waste management system in Bishkek and will result in an enhanced level of public service, introducing waste recycling and significant environmental improvements.

The Project was designed to include:

- The stepwise rehabilitation of the existing dumpsite – the Bishkek authorized disposal site, or BADS;
- Establishment of a new sanitary landfill site operating to international standards;
- A new waste management system, including a suitable waste collection and sorting system, waste treatment, and disposal.
- A combined material recovery and mechanical-biological treatment facility;
- Extended containerized collection of MSW to private housing areas and replacement of old tipping trucks with new waste collection vehicles;
- Improvements in the efficiency of waste collection through various measures and a pilot project on separate collection of recyclables at educational institutions; and
- Separation of waste collection and disposal services: collection will remain with Tazalyk and disposal (landfill operation and related activities) with the newly established Bishkek Sanitary Landfill company.

Since 2013 work has continued to develop the Project and circumstances in the local area have changed, namely that waste deposition at the existing dump has extended into the area which was previously considered for the new landfill. This required the location of the new facility to be reconsidered and a new engineering design developed for the new location.

Project Description

The existing BADS is located 12 km to the north of the City centre and 300-600 m east of the Ala-Archa reservoir. The site is situated within city limits nearing the Alamedin district of the Chui region. Officially the existing site covers 36 hectares of land, including surrounding roads, leachate collection basins etc. However it is estimated that over the years its dimensions have expanded up to 80 hectares. The site is not fenced. Currently informal waste picking and sorting take place at the BADS and a number of informal settlements are located within its sanitary protection zone (SPZ).

The proposed new facility is located approximately 500 m to the north of the existing BADS, on the northern edge of an area previously used for clay extraction which lies between the BADS and the new site. An indicative location and the site context are shown on Figures 1a-1d and 2.

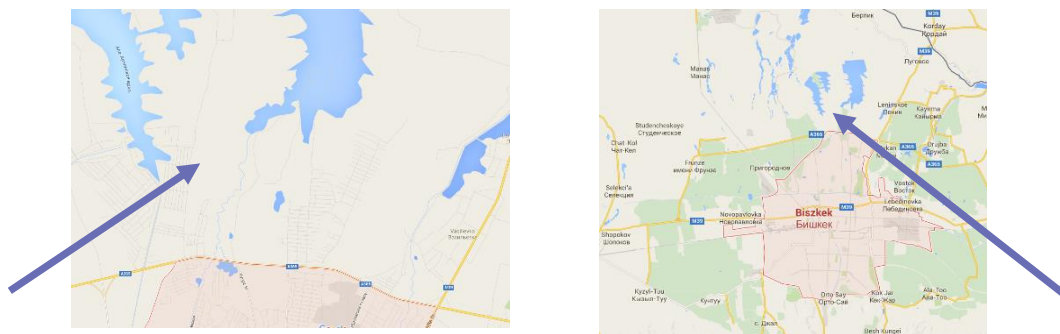


Figure 1a – 1d: Location of BADS – General View

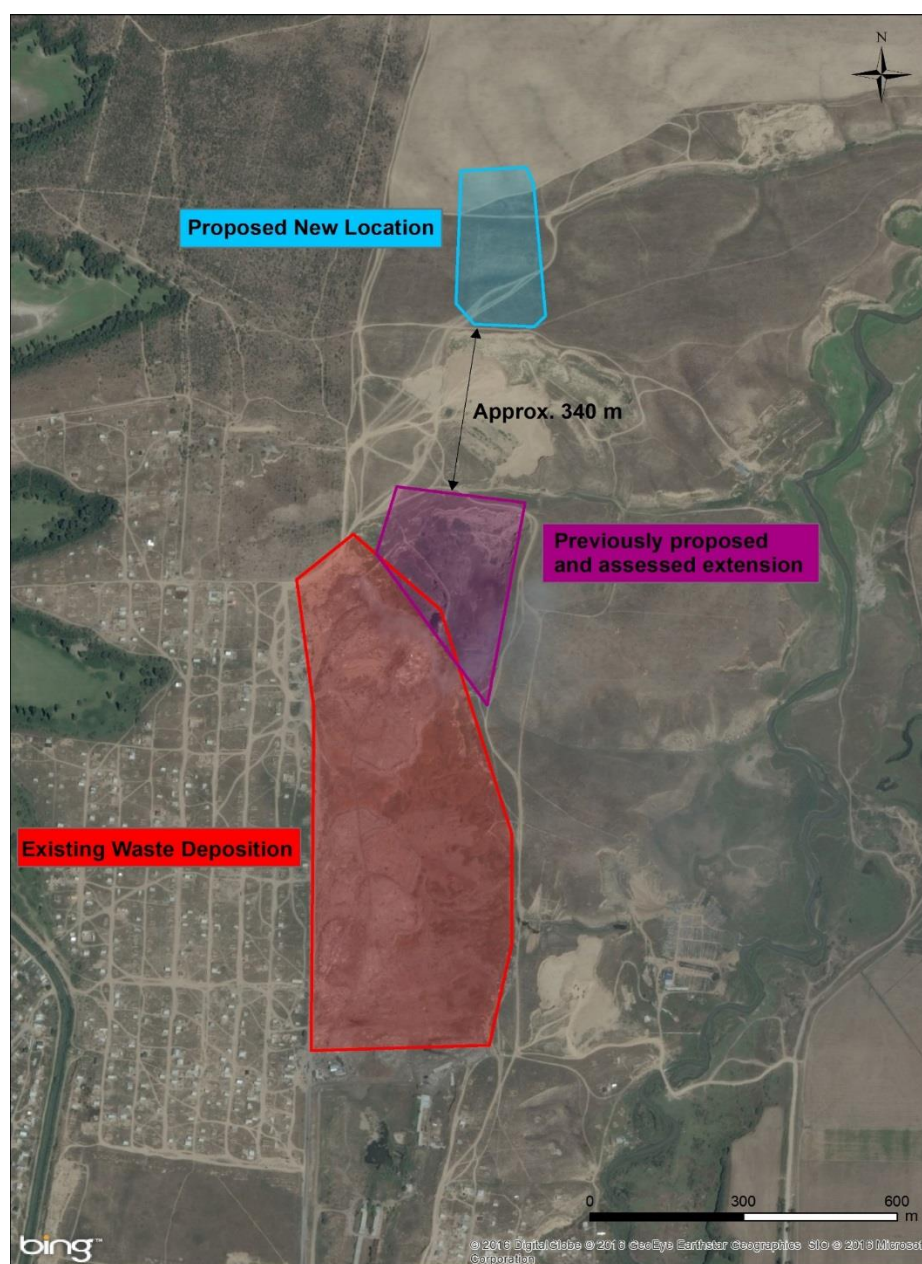


Figure 2: Approximate Relative Location of the Proposed Landfill

The total area of the land plot allocated for landfill waste disposal and infrastructure is 21.3 hectares. The maximum length of the site north to south is 715 meters and the maximum width east to west is 366 meters. The annual volume of waste generated is assumed equal to the volume currently disposed to the BADS, i.e. 1.5 million m³ (before compaction) or 220,000 tons of solid waste.

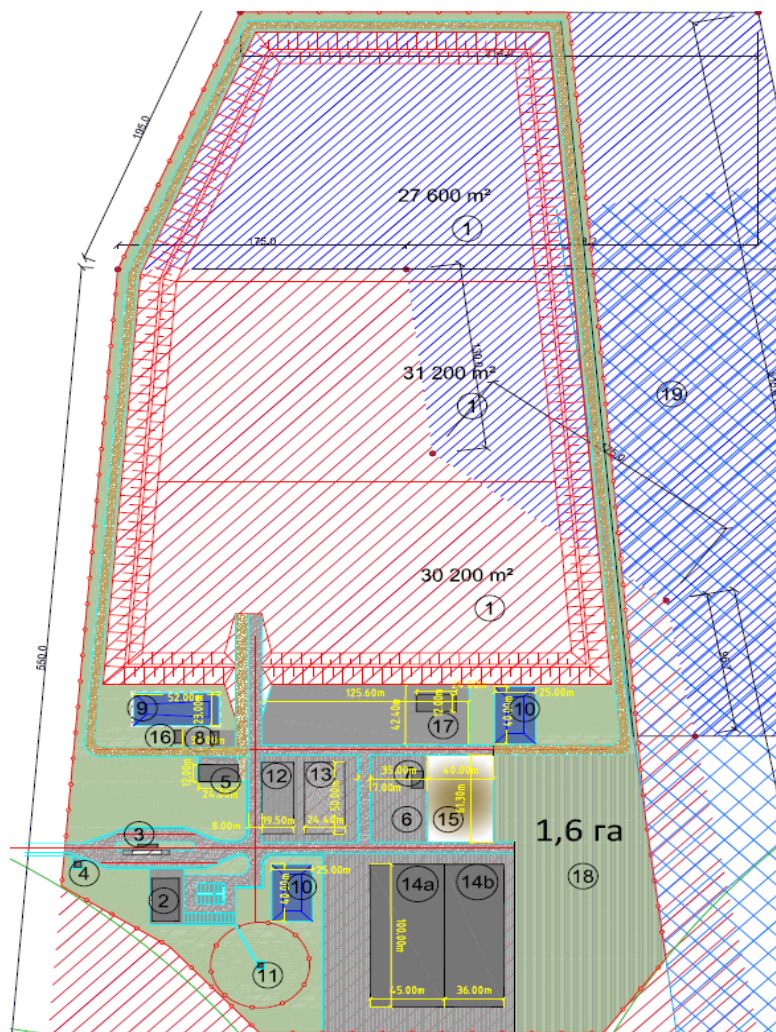
The landfill site has been designed following legal requirements of the Kyrgyz Republic, and in their absence, to the relevant standards of the European Union.

The landfill site will consist of three cells. Each landfill cell will be constructed with an artificial geological barrier comprising a clay layer on the bottom and sides. A clay layer will be laid after a base layer, then layers of the high density polyethylene, protective geotextile and a drainage layer will be appropriately placed on top.

The landfill will also include a number of ancillary facilities such as administration, control and staff facilities. The site will be provided with a perimeter fence and gate and will be accessed via a new 3.1 km access road. Waste vehicles will pass through a weighbridge on entering the site and a wheel wash facility prior to exit. The following pollution prevention and control systems will also be provided:

- Surface water collection and storage system;
- Leachate collection, transport, storage, treatment and discharge facilities;
- Landfill gas generation and collection system.

The layout of the waste management facility is shown in Figure 3.



Legend:

- | | |
|---|--|
| 1 Landfill cells | 2 Administration building and parking |
| 3 Inception and control zone | 4 Transformer station |
| 5 Garage for landfill equipment | 6 Technical maintenance area |
| 7 Equipment washing area | 8 Leachate recirculation system |
| 9 Leachate collection pond | 10 Water reservoir for firefighting |
| 11 Drilled well with 30m protection zone | 12 Recycling station for inhabitants |
| 13 Storage for containers | 14 Sorting plant with recyclates storage |
| 15 Soil collection area | 16 Biogas treatment system |
| 17 Animal remains neutralisation installation | 18 Mechanical-biological treatment area |
| 19 Area for future development | |

Figure 3: Plan of the Landfill Site with Auxiliary Facilities

Project Categorisation

The Project was initially classified by the EBRD as Category A because the construction of a new waste management facility could potentially have significant and adverse social impacts, including significant adverse physical and economic displacement. Although the socio-economic impacts of the new landfill

location are predicted to be none or minor, the impact on livelihood from the closure of the existing dumpsite is still considered to significant. Based on available information, the initial categorisation of the Project as ‘A’ is confirmed.

3 Project Alternatives Considered

Alternative solutions to the solid waste management system were considered in the FS and described in the 2012 ESIA. They include improvements to the municipal waste collection system, investment in recycling and recovery, and green composting. The selected investment in technologies and waste management proposals remain the same in the current proposal. The only proposed change is the selection of an alternative location for the proposed facility.

A landfill should be considered suitable if the characteristics of the site relating to the issues above, or the corrective measures to be taken, indicate that the landfill does not pose a serious environmental or social risk.

The 2012 ESIA considers the site adjacent to the existing dump the most favourable compared to more distant locations identified in its analysis of alternatives, a conclusion that remains valid for the new proposed location

The new location offers several benefits over the previously assessed adjacent location when considering meeting these requirements in that:

- The new site has been specifically selected and designed to provide the appropriate SPZs for the facilities proposed and the receptors identified in vicinity including informal settlements, the gas pipeline and water bodies;
- The site is above the area excavated for clay extraction, and therefore presumably underlain by clay and geologically and hydrogeologically suitable;
- The area is above the area subject to water logging and leachate collection;
- The area is relatively flat, sloping to the north, not subject to flooding and is free draining;
- The area is currently scrubland, previously used for grazing;
- The area is in City controlled land, currently designated as a Park, however, this is not an area designated for nature or heritage conservation and appropriate re-designation is a formal procedure which is under implementation.

Given that the new location was specifically selected to meet all the requirements for distance from sensitive receptors relevant for a waste management facility of this type; to the extent that the site boundary shape accounts for them the new location is considered to be the most appropriate of those identified as feasible alternatives.

4 Technical Feasibility

The relocation of the proposed new landfill site to a location 350 m north of the originally proposed location does not materially change any of the technical

considerations addressed in the original FS; as the existing and proposed waste management system remain fundamentally unchanged.

There are also no gaps *per se* in the technical considerations addressed in the original FS albeit that they refer to the original proposed location of the new landfill site. However, technical design improvements have been recommended to ensure the proposed landfill (regardless of its location) is developed in accordance with good international practice.

5 Project Impacts

A comprehensive set of environmental and social subjects were assessed with regard to Project construction and operation. Subjects considered in the ESIA Addendum are presented in Table 1.

Table 1: Subjects considered in the ESIA Addendum

Physical environmental subjects	Socio-economic subjects
Climate	Demography and socio-economic conditions
Land use	Vulnerable groups
Education	Land ownership and use
Economic activities and employment	Local community
Income and expenditure	Local economic activities
Surface and groundwater	Public health
Biodiversity	Community health and safety
Air quality and Greenhouse gas emissions	Labour, employment and working conditions
Noise	Waste tariffs
Landscape and visual	Infrastructure and utilities
Archaeology	Suppliers of goods and services

The relocation of the new landfill introduces the following key changes to impacts previously assessed in the 2012 ESIA:

- **Physical relocation of people is expected to be avoided or minimal for the newly selected site.** This is mainly because the site has been selected to allow an appropriate SPZ (or buffer) of at least 500 m to the formal settlements and informal settlements of Kalys-Ordo-2 and Altyn Kazyk. Nevertheless, this will be confirmed during Detailed Project Design and is largely dependent on the alignment selected for the site access road. Should avoidance not be possible, a Resettlement Action Plan will be prepared for project affected persons in accordance with the Resettlement Framework.
- **The number of people whose livelihoods (i.e. through informal waste picking) may be affected by the closure of the existing BADS is expected to be less than previously reported.** The 2012 ESIA estimated that approximately 700 to 1000 people could be involved in informal waste picking at the BADS. However, more recent data from a socio-economic

survey undertaken between 2013 and 2014 revealed that the number of project affected persons (PAPs) engaged in waste picking whose livelihood could be affected could be over 250 people. Nevertheless, despite this potential reduction in PAPs, the impact of the BADS closure and rehabilitation on livelihoods is still considered to be significant. A new socio-economic survey is currently ongoing and aims to confirm the number of PAPs and provide an up-to-date understanding of livelihood impacts from the Project. In line with the Livelihood Restoration Plan (LRP) developed for the Project in 2014, identified PAPs will be entitled to access livelihood restoration measures. These measures include:

- Training and Access to Employment / Livelihood Generation Programmes;
- Assistance with Obtaining Personal Documents;
- Assistance with Access to Social Welfare, Health Care and Education;
- Other Forms of Assistance.
- **Waste collection and disposal tariffs have increased considerably since the original Feasibility Study was completed.** The original Feasibility Study concluded that tariffs were affordable but they have since increased by around 35% (January 2016 figures). However, providing subsidies to disadvantaged groups are maintained, these increases are still considered affordable for the majority of residents and for business when compared to the waste tariffs in other cities of Kyrgyz Republic and to average incomes in the City and surrounding Chui region. The difference in capital and operating costs between the previous and the newly proposed locations of the landfill site are not expected to significantly alter the tariffs and affordability. A targeted public campaign is recommended to inform and explain any changes and further plans with regard to the tariffs, as well as to ensure clear channels for public feedback. (The action is included in the updated Stakeholder Engagement Plan).

For all other topics, no material change in baseline conditions have occurred since the 2012 ESIA. Furthermore, given that the newly proposed location for the landfill lies only 350 m north of the proposed site and in a position more favourable to potentially sensitive receptors (e.g. water resources, residences etc.), the baseline conditions of the newly proposed site are determined to be largely consistent with, or better than those previously assessed in the 2012 ESIA. As such, no new or different significant impacts have been identified for the newly proposed location. In all cases, potential environmental and social impacts associated with the new site are determined to be commensurate, or improved, compared to the landfill site assessed in the 2012 ESIA.

6 Public Consultation and Project's Stakeholder Engagement

The Project Stakeholder Engagement Plan (SEP) has been updated, including a revised the list of persons interested or affected by the Project and its developments. The updated SEP also provides an overview of the stakeholder engagement undertaken since the development of the 2012 ESIA, and proposes an

updated Stakeholder Engagement Programme (Section 6 of the SEP) for Project implementation.

A grievance management procedure for the Project is described in the Stakeholder Engagement Plan. The procedure for addressing grievances related to livelihood restoration is provided in the Livelihood Restoration Plan.

7 Cumulative Impacts

The baseline for the 2012 ESIA takes into account existing land use in the Project Area. No new land uses have been established in the interim with the exception of the expansion of the existing BADS. The 2012 ESIA does not consider potential cumulative environmental and social effects that could arise from the proposed Project and current activities or anticipated development plans in the Project vicinity. This is not considered a gap in the assessment as no other developments were identified or reported that required a cumulative impact assessment. A further review of potential developments in the vicinity of the proposed works has confirmed that no developments are proposed and no cumulative assessment is required.

8 Mitigation and Monitoring Measures

Measures to mitigate Project impacts are described in two main documents: the Environmental and Social Action Plan (ESAP), and the Environmental and Social Management and Monitoring Plan (ESMMP).

The ESAP is publicly available and is disclosed as part of the updated Project ESIA documentation. It provides the obligations of the operating companies (Tazalyk and SPV), main Contractor and its sub-contractors, and the City of Bishkek to mitigate Project impacts during construction and operation.

The ESMMP provides a more specific updated set of mitigation measures to be implemented with regard to management and monitoring activities. It is available as part of the original 2012 ESIA and is not altered by the relocation of the landfill site.

Key recommendation from these plans include:

- Establishment and/or improvements in the Environmental, Social, Health and Safety Management Systems of companies involved;
- Development and implementation of construction-related plans, such as Construction Management Plan, Traffic Management Plan, Emergency Response Plan etc;
- Actions to mitigate potential public health and safety impacts during construction and operation with regard to air emissions, noise, traffic movements, sanitary conditions/disease prevention, site security etc.;
- Requirements for sub-contractor compliance and management;

- Updated recommendations with regard to assessing and managing social impacts, particularly related to new land acquisition and livelihood restoration.

The mitigation measures in the ESAP and ESMMP will need to be implemented during construction, operation and aftercare phases to maintain compliance with lender requirements.

9 Contact Information

Enquiries and grievances can be submitted to through the following contact details:

Contact Person: PIU Bishkek Solid Waste Project

Phone: +996 312 325 223

Email: piu.bsw@gmail.com, maspecialist@gmail.com

Website: www.meria.kg, www.tbo.kg

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