UZBEKISTAN

TASHKENT WATER AND WASTEWATER MODERNIZATION PROJECT

FEASIBILITY STUDY

Non-technical Summary

September 2018
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Abbreviation</th>
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<tr>
<td>EBRD</td>
<td>European Bank for Reconstruction and Development</td>
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<tr>
<td>EHS</td>
<td>Environmental, Health and Safety</td>
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<td>ESAP</td>
<td>Environmental and Social Action Plan</td>
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<td>EU</td>
<td>European Union</td>
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<td>LTIS</td>
<td>Long Term Investment Strategy</td>
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<td>MHCS</td>
<td>Ministry of Housing and Communal Services</td>
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<td>NGO</td>
<td>Non-Government Organisation</td>
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<td>OHS</td>
<td>Occupational Health and Safety</td>
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<td>O&amp;M</td>
<td>Operation and Maintenance</td>
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<td>NTS</td>
<td>Non-technical Summary</td>
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<td>PIP</td>
<td>Priority Investment Programme</td>
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<td>PIU</td>
<td>Project Implementation Unit</td>
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<td>PRs</td>
<td>(EBRD) Performance Requirements</td>
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<td>SEP</td>
<td>Stakeholder Engagement Plan</td>
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<td>SuvSoz</td>
<td>State Unitary Enterprise for Water Supply and Wastewater Services</td>
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<td>WTP</td>
<td>Water Treatment Plant</td>
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<td>WWTP</td>
<td>Wastewater Treatment Plant</td>
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1 PROJECT OVERVIEW

The Tashkent Water and Wastewater Modernization Project is planned by the City’s State Unitary Enterprise (SuvSoz). Suvsoz is part of the General Administration of Housing and Communal Services of Tashkent City with the purpose to provide water supply and wastewater services to the public.

The objective of the Project, which the European Bank for Reconstruction and Development (EBRD) has been requested to finance, is to rehabilitate and extend the wastewater infrastructure in key priority areas identified by SuvSoz as well as increasing the efficiency of the water supply in certain areas. A Feasibility Study financed by EBRD’s Infrastructure Project Preparation Facility was carried out by the consulting company Sweco Danmark in cooperation with UBI (Tashkent) in 2018. The Feasibility Study has proposed a Prioritised Investment Programme (PIP) at USD 30 million for the period 2018-2021 and a Long-term Investment Strategy (LTIS) for the period 2022-2034. The PIP will be financed through a loan from EBRD and the LTIS by resources from the Government of Uzbekistan.

The Project organisation and structure is as follows. A Project Implementation Unit (PIU) will be established within the Ministry of Housing and Communal Services (MHCS) for the Project planning and construction phase. The PIU will oversee the procurement and implementation of construction contracts under the PIP. Following completion of construction, the assets will be handed over to SuvSoz for operations. Corporate Development Support will be provided to SuvSoz to enhance its institutional, operational and financial capacity.

Much of the Project investment is in northern part of Tashkent in the rayons (districts) of Yunusabad and Almazar, where the City Administration expects a steady growth and where there is a considerable need for investment in water supply and wastewater infrastructure. The water supply investments will also benefit the population in other parts of Tashkent City. The location of the mentioned residential areas and the related water treatment plants (WTPs) and the wastewater treatment plants (WWTPs) are shown in the map below.

Figure 1: The project investments will primarily take place in the districts of Yunusabad and Almazar

As mentioned above, a PIP and a LTIS have been proposed for improvement of the water supply and wastewater services. The priority investments will improve the reliability and efficiency of the water supply
network and provide a relief for the overloaded wastewater system in the northern part of the city. The proposed investments are presented below.

Table 1: Proposed Project – Water supply

<table>
<thead>
<tr>
<th>Items</th>
<th>Description</th>
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<tr>
<td><strong>Selected as PIP (2018-2021)</strong></td>
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| Water network | • Automatic Control valves.  
   • Automated Pressure regulators for variable conditions. |
| Water sources | • Automated valving at Bozsu water treatment plant.  
   • Automated valving at Kadyrya water treatment plant. |
| Support equipment | • Laboratory equipment  
   • Machinery & plant |
| **Longer term investments (2022-2034)** | |
| Intake works | • Kadyrya Water Intake – improvement of settling tanks  
   • Kibray Groundwater intake – replacement of wells |
| Replacement / Upgrade/Extension of Current network | • 420 km of replacement pipelines to complete replacement of critical old sections of original network in the city.  
   • 17 km of critical improvements to network including pressure regulation valves  
   • Renovation of booster stations |
| Network survey and modelling | • Topographic and elevational survey of water supply and wastewater system  
   • Epanet or equivalent mathematical modelling of both water supply and wastewater systems |
| O&M equipment | No further O&M equipment required after PIP investments and other support |

Table 2: Proposed PIP and LTIS – Wastewater services

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<tr>
<td><strong>Selected as PIP (2018-2021)</strong></td>
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| Sewerage network | • Construction of Karakamish relief collector  
   • Provision of new pump station  
   • Rehabilitation of manholes  
   • Supply & installation of equipment for three sewage pump stations |
| Laboratory Equipment at WWTP Plant | • Purchasing of equipment for measuring levels of industrial toxic discharges |
| Preparation for expansion of Bozsu WWTP | • Increased pressure on industry for pre-treatment  
   • Increase industrial tariffs to recover funds for WWTP improvements  
   • Identify International financing institutions for expansion of the WWTP  
   • Increase domestic tariffs  
   • Train staff for financial, operation and maintenance, trade waste, etc  
   • Conduct a hydraulic study to identify the amount of infiltration into wastewater networks leading to Bozsu WWTP  
   • Renovate pipes in wastewater networks to reduce infiltration |
| Pressure for pre-treatment of industrial discharge to Bektimir WWTP | • Increase pressure on industry for pre-treatment of industrial wastewaters prior to discharge to the sewerage system and hence increase the available capacity and effectiveness of the existing WWTP.  
   • Increase industrial tariff to recover funds for Bektimir WWTP improvement |
| **Longer term investments (2022-2034)** | |
| Bozsu Aeration station | • New biological plant increasing capacity including recycling by 30,000 m3/day (1st phase)  
   • Rehab of primary tanks, replace scrapers, new sludge pumps |
| Salar Aeration Station | • Reconstruction of mechanical plant including rakes  
   • Reconstruction of detritus system  
   • Rehab of primary tanks, replace scrapers, new sludge pumps |
| Bektimir WWTP | • Reconstruct treatment plant (package plant)  
   • Reconstruct pumping station  
   • Primary settlement tanks  
   • Sludge drying beds (2 No.)  
   • Sludge concentration tank |
| Sewerage Network | Priority new works, rehabilitation works & repair of collectors |
It is estimated that, after the implementation of the priority investments, an additional nearly 400,000 persons will have access to safe piped water supply and an additional 280,000 persons to piped wastewater services, compared with the situation in April 2018.

2 SCOPE OF ENVIRONMENTAL AND SOCIAL AUDIT AND ASSESSMENT

The Feasibility Study includes an assessment of the potential environmental and social risks and impacts of the proposed investments and an E&S audit of the current performance of SuvSoz’s operations and facilities. In terms of compliance with national environmental and social laws and regulations, EBRD’s Environmental and Social Policy (2014) as well as EU standards.

The scope of the E&S Audit and Assessment include:

- An Environmental & Social (E&S) Audit of the corporate management practices, existing facilities and operations of the Company in order to identify and assess any environmental and social risks that are associated with the existing operations.
- An E&S Assessment of the extent of future potential environmental and social impacts of the PIP components and the ability of future operations to comply with national and EU environmental, health and safety, and social standards and regulations as well as EBRD’s Environmental and Social Policy (2014) and its performance requirements (PRs).
- Preparation of an EBRD PRs compliance table, identifying the EBRD PRs and specific requirements within them that are relevant to the project and current activities, operations and assets as well as summarising for each PR the Project’s and the existing operation’s compliance with them, and the actions required to meet them.
- Development of an Environmental and Social Action Plan (ESAP) to address issues identified during the E&S Assessment and E&S Audit and summarised in the PR compliance table.
- Preparation of a Stakeholder Engagement Plan (SEP).
- Development of a Livelihood Restoration Framework for households and private entities that will be temporarily negatively affected by construction activities.
- Preparation of this Non-technical Summary.

The Project has been categorised as Category B in accordance with the EBRD’s Environmental and Social Policy, as the potential adverse future environmental and social impacts are site-specific, readily identified, and addressed through mitigation measures. All PIP components will be subject to local permitting procedures and EIA law (OVOS) in the future.

Key findings from the E&S Audit and Assessment are included in chapters 3 and 4 below.

3 ENVIRONMENTAL AND SOCIAL AUDIT OF SUVSOSZ

Legal aspects and compliance

SuvSoz is responsible for drinking water supply, and wastewater collection and treatment and is operating in accordance with national environmental laws and regulations. SuvSoz operates with the permits and licences, which should be in place in a water company in Uzbekistan, including water use permit, groundwater abstraction permit and wastewater discharge permits. Furthermore, waste generation and air emission permits are in place. SuvSoz is regularly audited by relevant environmental authorities. The current discharge, waste, and air emission permits were developed by an external licensed consultant and approved by the Environmental Protection Committee in 2016.

At present, wastewater is collected and treated at three WWTPs: Salar, Bozsu and Bektimir. Monitoring data indicate that the WWTPs are not compliant with the national requirements in terms of treated wastewater quality, primarily due to discharge of untreated industrial wastewater to the WWTPs.
An ongoing programme led by the Environmental Protection Committee and SuvSoz relates to the enforcement of pre-treatment of industrial discharge, which is the main issue in relation to compliance with national standards.

**Environmental, health and safety (EHS) aspects**

SuvSoz’ environmental management focus on compliance with national requirements. The Sanitary, Monitoring, and Ecological Department is responsibility for monitoring of drinking water treatment and quality and the Production and Technical Department with responsibility for monitoring of wastewater treatment and quality. SuvSoz has established procedures to monitor the performance and quality of influent and effluents of the wastewater treatment plants (WWTP) and the performance of the drinking water treatment and quality of supplied water. Laboratory facilities at the WWTPs and at the drinking water treatment plants carry out the monitoring and analyses. Generally, environmental management activities are integrated in the instructions and work procedures of individual departments rather than existing as separate environmental instructions or in environmental management manuals.

SuvSoz has an Operation and Safety Department and employs Safety Engineers responsible for Health and Safety. There are Occupational Health and Safety (OHS) instructions for different jobs and workplaces and the Safety Engineers are responsible for ensuring training of staff in these, enforcing their application, and conduct of internal audits. SuvSoz establishes OHS requirements to contractors engaged by the company, but systematic audits during implementation are not conducted.

**Social aspects**

Currently, SuvSoz provides water supply services to around 2.4 million inhabitants, equivalent to 99% of the population in Tashkent City, and wastewater service to around 2.2 million inhabitants, equivalent to 89% of the population. Main water supply problems in the Almazar and Yunusabad rayons, as reported by local leaders and residents, are corroded, leaking pipes, scarcity of water, low pressure and contamination of the drinking water. Further, residents raised the issue of wastage of water through watering of gardens, car washing etc. Problems related to wastewater disposal were reported as mainly unpleasant odour, blockages of pipes and drains, unsafe disposal, overflow and pollution of recipients.

As part of the feasibility study an assessment of the ability and willingness to pay for improved services was conducted. The respondents expressed a keen interest in improved services but some reservations about the ability to pay amongst the low-income groups, who will need support from authorities and local communities.

4 ENVIRONMENTAL AND SOCIAL ASSESSMENT OF PRIORITY INVESTMENT PROGRAMME

**Benefits of PIP**

There are significant positive impacts of the proposed investments. Households, budget organisations, commercial and industrial enterprises currently connected to the water supply and wastewater services will benefit through improved services. For wastewater services, this is particularly the case in the Yunusabad and Almazar rayons, where it will be possible to extend the sewerage network substantially after the construction of the Karakamish relief collector. SuvSoz is thus expected to establish wastewater connections for a substantial number of households.

The foreseen benefits include:

- Reduction in water and sanitation related diseases, resulting in reduced mortality and morbidity; this will lead to reduced health costs for the individual family and the society as a whole.
- Improved living conditions as additional households in Yunusabad and Almazar rayons in the future will have connections to the piped wastewater system.
- One group of customers expected to benefit from PIP implementation is women given their roles and responsibilities in managing household needs such as cooking, laundry, family hygiene. Improved access to clean water and sanitation is expected to reduce the time burden women bear on basic household chores and promote healthier living standards.
- Proposed new collector will relieve the overloaded existing collector and thus reduce the risk of wastewater overflow. The new collector main and the parallel existing line will in the future receive wastewater from the unsewered parts of Yunusabad and Almazar rayons and thus increase the collection rate of wastewater.
- Improvement in energy efficiency when replacing SovSuz equipment.
- Employment opportunities, and thereby increased incomes, for local residents in connection with the proposed improvements to the water supply and wastewater infrastructure; increased incomes may in turn lead to increased demand for goods and services and thereby increased economic growth.
- Human resources development, in the form of training mainly by the suppliers of equipment, is part of the project; increased knowledge and skill levels will be of economic benefit to the individual person and to the society as a whole.

**Adverse impacts and mitigation measures**

The main negative social and environmental impacts of the project are temporary and short-term impacts during the construction phase associated with new constructions, rehabilitation of pipelines and renovation of buildings and civil structures. The construction related impacts are of limited duration and will be mitigated through standard methods and procedures of good housekeeping and good engineering practice.

**Impacts during construction**

Groundwater and surface water may be impacted through unintentional spills or discharges of oil and fuel from construction equipment, during the construction period. Other potential impacts are primarily related to the handling and disposal of hazardous materials such as asbestos pipes and waste oil as well as waste generated by construction personnel. Measures are in place for proper handling of all the wastes generated during construction. Additional measures will be taken for works in residential areas, to mitigate air and noise impacts. Construction should normally be limited to daytime during weekdays. Works contractors will be required to establish Environmental Management Plans as well as Health and Safety Plans for each site. All works will be supervised for compliance on-site by experts to report regularly on implementation of the site-specific plans, and regular audits will be performed.

There will not be any involuntary resettlement nor private land acquisition caused by any of the PIP sub-projects. However, some households and a few private entities will be temporarily affected by the construction of the Karakamish relief wastewater collector pipe. A Livelihood Restoration Framework (LRF) has therefore been developed as part of the feasibility study, while a more detailed Livelihood Restoration Plan is to be developed during the Project’s design phase.

**Impacts during operation**

The key impacts on the environment are related to unintentional spills, unintentional or emergency release of wastewater to the environment, discharge of hazardous chemicals, and general maintenance activities during operation. Emergency response plans, including responsibilities, procedures, communication, training, and resources in case of emergency releases to the environment, will be in place at the operation facilities, as well as groundwater monitoring. During operation and normal maintenance, a direct impact to the air quality in the area of influence will be air emissions at the wastewater treatment plants and from transportation; however, measures for reduction are in place, and air monitoring at the operation sites will be performed. It is assessed that during operation of the plants there will be no significant noise impact to the external environment. Regular maintenance of equipment will be carried out to minimise the noise levels which might result from possible failures or breakdowns.

**Affordability**

The assessment of the ability and willingness to pay for improved services found that there were some reservations about the ability to pay amongst the low-income groups, who will need support from authorities and local communities. It will therefore be essential that the PIU in MHCS and SuvSoz, in cooperation with the rayon administrations, monitor that low-income and other families in need are able to connect to the improved seweage system in both Almazar and Yunusabad rayons and to the water supply system. Similarly, it is important that SuvSoz monitors the continued affordability of its tariffs for low-income and other vulnerable groups, particularly so as the tariffs are expected to increase in connection with the proposed investments.
5 SUMMARY OF ENVIRONMENTAL AND SOCIAL ACTION PLAN

An Environmental and Social Action Plan (ESAP), which includes environmental and social management and monitoring measures, has been prepared for the implementation of the Project and for improvement of SuvSoz' operations. The ESAP addresses:

- Management of environmental and social issues, including monitoring and regular reporting, preparation of OVOS and incorporation of mitigation measures in the design and development of an environmental and social management plan, environmental permitting procedures, and employment of an Environmental, Health and Safety Manager and a Social, Labour and Stakeholder Engagement Manager in the PIU under MHCS.
- Affordability of all low-income and vulnerable groups in Yunusabad and Almazar rayons to connect to the wastewater and water supply systems after the priority investments.
- Labour and working conditions, including a Human Resource policy in SuvSoz.
- Resource efficiency and pollution prevention control, including monitoring of dry sludge, study of odour issues at WWTPs, and monitoring of wastewater effluents.
- Health and safety related to the Project, including health and safety risk assessment, incident reporting procedures, traffic management, health and safety plan, instruction for handling of asbestos concrete pipes.
- As part of the Livelihood Restoration Framework implementation, development of a detailed Livelihood Restoration Plan to assure that impacts on all affected land users are minimised and mitigated.
- Cultural heritage, including chance find procedures.
- Information to and information of the public, including stakeholder engagement plan and grievance mechanism.

6 PROJECT COMPLIANCE WITH NATIONAL, EU, AND EBRD REQUIREMENTS

The investments under the PIP will increase the sewage collection rate and connect a new area of Tashkent to the sewerage network. The three WWTPs Salar, Bozsu and Bektimir have recently been renovated, which significantly improved their removal rate, but are not equipped for nutrient removal. Monitoring data indicate the WWTPs are not compliant with the national requirements in terms of wastewater quality and the EU Urban Waste Water Treatment Directive, both in terms of treated wastewater quality and the requirement for tertiary treatment. The main reason for non-compliance with national and EU directive standards is the discharge of untreated industrial wastewater to the WWTPs.

Following a precautionary approach, it is proposed to consider the catchment area of the river Chirchiq as sensitive since the discharge is to irrigation channels and to a river with potential water reuse for domestic and agricultural purposes. Therefore, it is assumed that EU Directive standards for sensitive areas need to be achieved at all three WWTPs. An ongoing programme led by the National Environmental Committee and SuvSoz relates to the enforcement of pre-treatment of industrial discharge. This will significantly improve the performance of the municipal treatment plants in the nearest future. While there are no measures in the PIP for investment at the WWTPs, the Long-Term Investment Strategy includes investments and enforcement of pre-treatment of industrial wastewater, which are expected to bring the WWTPs' performance in compliance with the EU Urban Waste Water Treatment Directive.

7 STAKEHOLDER ENGAGEMENT AND CONTACT DETAILS

A Stakeholder Engagement Plan (SEP) has been developed and will be disclosed. The PIU in MHCS and their consultants will finalise and implement this during the design and construction phases of the Project, while SuvSoz is responsible for stakeholder engagement during operations. The SEP includes a grievance mechanism.
The relevant contact information is:

**Design and construction phase**
Project Implementation Unit (PIU)  
Ministry of Housing and Communal Services

**Operations phase**
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