

SURKHANDARYA AND NAMANGAN REGIONAL WATER PROJECTS – FEASIBILITY STUDY

SURKHANDARYA OBLAST
NON-TECHNICAL SUMMARY
European Bank for Reconstruction and Development

December 2019



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ABBREVIATIONS

Company, Client, Enterprise	State Unitary Enterprise “Surkhandarya Suvoqova” (Surkhandarya Oblast Water & Wastewater Company)
CWR	Clean water reservoir
EBRD, Bank	European Bank for Reconstruction and Development
E&S	Environmental and Social
EHS	Environment, Health and Safety
ESAP	Environmental and Social Action Plan
GIS	Geographic Information System
LTIP	Long-Term Investment Program
NTS	Non-Technical Summary
O&M	Operation and Maintenance
OHS	Occupational Health and Safety
PIP	Priority Investment Program
PR	EBRD Performance Requirements
SCADA	Supervisory Control and Data Acquisition
SEP	Stakeholder Engagement Plan
SPZ	Sanitary-Protection Zone
WDU	Water Distribution Units
WIU	Water Intake Unit
WS	Water Supply
WTP	Water Treatment Plant
WW	Wastewater
WWPS	Wastewater Pumping Station
WWTP	Wastewater Treatment Plant

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1 Introduction

Uzbekistan is divided into twelve oblasts (incl. Surkhandarya Oblast), one autonomous republic and one independent city (Tashkent). Each oblast has its own Suvoqava (Vodocanal), a state unitary enterprise responsible for water and wastewater services in the whole oblast. State Unitary Enterprise “Surkhandarya Suvoqava” (hereinafter referred as “Company” or “Enterprise”) provides water and wastewater services in Surkhandarya Oblast (figure 1-1).

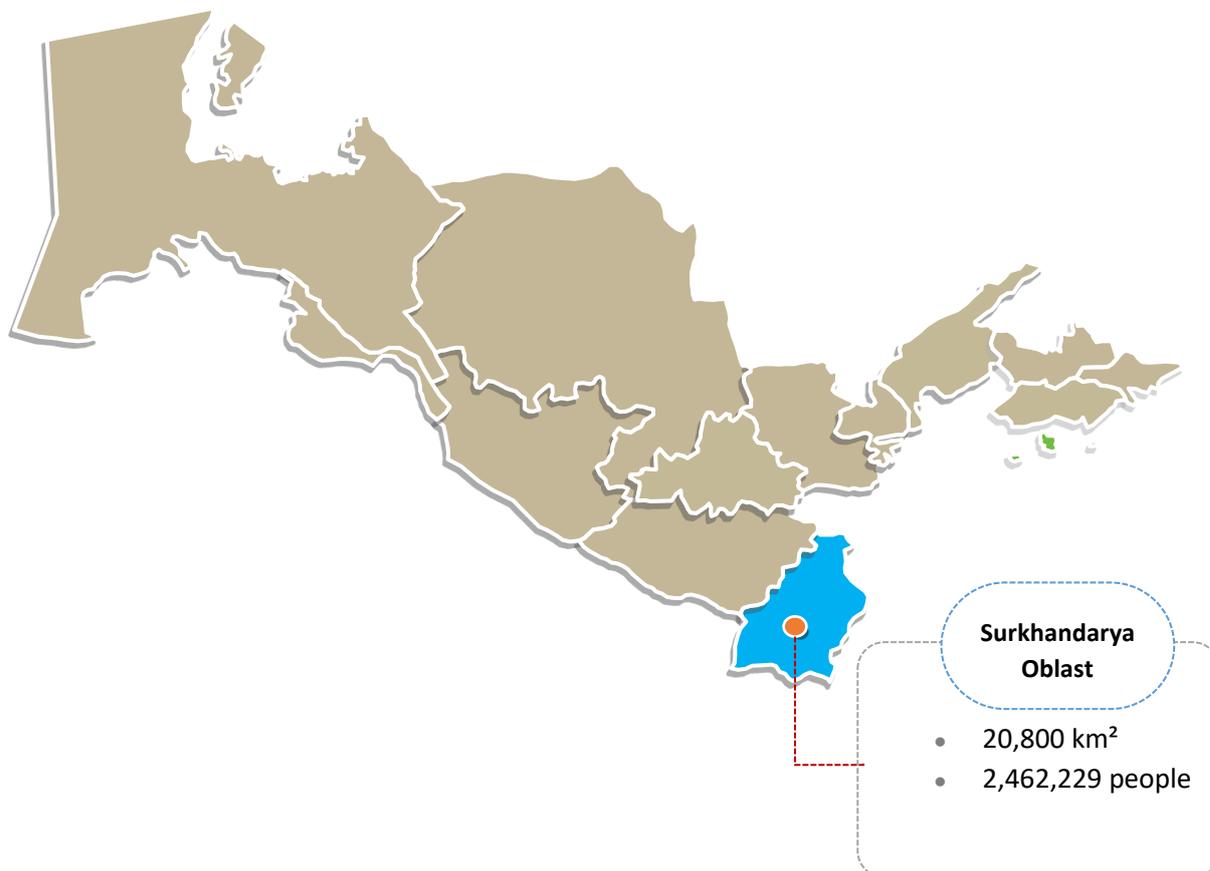


Figure 1-1 Location of Surkhandarya Oblast

Since 18 April 2017 the State Unitary Enterprise “Surkhandarya Suvoqava” has been included into the system of the Ministry of Housing and Utility Services of the Republic Uzbekistan. The Company provides municipal services including water and wastewater services to residential customers, industries and organisations. The Company’s responsibilities cover provision of services to consumers in Termez and the territory of almost the entire oblast, including 9 cities, 116 urban settlements and about 540 rural settlements.

The Company also has three subsidiary companies which carry out construction, reconstruction and repair of water and wastewater facilities for the Company on a contractual basis:

- › Suvokova Bunyodkori in the city of Termez as well as in the Termez, Angora, Muzrabad, Sherabad and Kumkurgan districts;
- › Surkhon Suvoqova Kurilish in the Dzharkurgan, Kumkurgan, Denau and Sariassia districts; and
- › Ichimlik suv kuvurlari va nasoslarini tamirlash in the Angora, Dzharkurgan, Kizirik, Altinsai and Uzun districts.

The Company’s subsidiary companies are legal entities enjoying the full legal capacity and carry out their activities on the basis of their Charters approved by the Company’s Director in agreement with the regional Housing and Utility Services Department. The Company’s Director appoints heads/directors, chief engineers and chief accountants of subsidiary companies’ subject to the prior approval of

candidates by the Company's founder. The Company disposes of the property of its subsidiary companies as agreed upon with the regional Housing and Utility Services Department.

The population having access to water supply services according to the Company's accounting data is 1.4 million (mln.) according to official records for 2018, which is only 54% of the total population of the region. The area of the Surkhandarya region is 20,800 km², the service area is about 16,000 km². Part of the mountainous territory in the west and north of the Oblast does not have centralized water supply systems. The population of these areas use decentralized water sources like wells, rivers, springs, etc. The highest level of access to water is in the city of Termez, and the lowest is in the Muzrobad and Sherobad regions.

About 97% of the total volume of water supplied to the network is taken from underground sources. Only in the Shargun city, water intake from a river is currently in use and, after settling and chlorination, water is supplied to the city network. An underground water intake is under construction, consisting of 4 new wells, a reservoir and a pumping station. Once this groundwater intake is operational (expected at the end of 2019), the use of river water will cease in Shargun city.

Water intakes are usually constructed according to a standard design. The structure of a typical installation includes a number of wells, a prefabricated pipeline, clean water tanks and a pumping station, auxiliary facilities, the area has a fence and permanent staff.

The total length of the water supply networks operated by the Company is 6,787 km, of which about 2,100 km are water mains.

In most settlements, water is supplied no more than 6 hours a day, in some systems no more than 4 hours a day. Only in the central districts of Termez and Denau, water is supplied 24 hours a day.

The given data on networks and equipment may be inaccurate, since an inventory has not been carried out in the last 10 years and many sections of networks in rural areas are lost. The Company were transferred street networks of a number of settlements that were previously operated by other organizations, including agricultural enterprises however, in most cases when transferring no cartographic or technical documentation was available, and a new inventory of assets was not completed.

Most valves are inoperative and require replacement. The Company maintains in operation only shut-off valves, which regulate the supply of water to certain areas and control the operation of pumping stations. In this regard, when eliminating incidents, it is often necessary to disconnect a significantly larger number of consumers than is necessary with operating valves. Most plungers and hydrants also do not work.

There is no regular monitoring of the quality of source water or supplied drinking water in the Company. Water quality control is carried out only in Termez according to a simplified (incomplete) program and Company data is mainly available from analysis of water from groundwater sources performed during the design of water intakes and field exploration (and is therefore old and incomplete). The Company plans to begin monitoring after hiring and training personnel in 2019.

Under an agreement with the Sanitary department of Surkhandarya Oblast, the State Sanitary Control (SES) periodically (at most monthly) analyzes the water in the Termez water supply system only (i.e. not in the areas outside Termez). The samples are taken both from the wells and from the distribution networks. The analyses are performed for two main microbiological indicators (the coli index and the total microbial number); as well as for the following chemical parameters: total hardness, dry residue, and the main soluble forms of salts (calcium, magnesium, sulphates, chlorides).

About 109 thousand people or 4.3% of the total population of the region are connected to the centralized sewage system. The rest of the population uses individual sewer systems (street toilets, cesspools, septic tanks, storage tanks, etc.). The low percentage of connections is associated with the lack of development of a wastewater system, which is located only in the regional centres – Termez, Kumkurgan, Denau and Shargun. But even in these locations, the wastewater treatment plants (WWTP) operate in emergency mode or are completely worn out.

The total length of wastewater networks in the Surkhandarya region is 161.2 km, of which 103.2 km are in Termez; in the city of Denau - 27 km; in the city of Kumkurgan - 11 km, in the city of Shargun - 20 km.

These wastewater networks have been operating since the 1980s and therefore the total formal deterioration of pipelines, based on data on the age of the networks, is about 50-60% for the cities of Termez and Denau and 90% for the cities of Kumkurgan and Shargun. The loss rate is at least 55%.

The volume of wastewater services in 2018 amounted to 7,797 thousand m³, of which: the share of the population – 3,797 thousand m³, the share of commercial consumers – 4,000 thousand m³.

Wastewater quality monitoring for all WWTP of Surkhandarya Oblast is not carried out. The laboratory of the Company, which is located in the territory of the WWTP of Termez, only analyzes residual chlorine in discharged wastewater at the outlet of the Termez treatment plant.

The discharge of wastewater after the facilities of Termez is to the Amu Darya river. The river passes in the border zone between Uzbekistan and Afghanistan, in connection with which there is no access to a discharge point for the regulatory bodies and employees of the Company.

Networks have been operating since the 1980s and most of them require repair and reconstruction. The main problems are incidents and blockages on gravity networks - with about 2.6 incidents (including clogging) per 1 km of network per year. The incident rate on sewer networks is growing; compared with the data for 2016, the incident rate in 2018 increased by 20%.

1.1 Why is the project needed?

A feasibility study has been prepared to determine a priority investment programme (the "PIP" or the "Project") developed from a long-term investment strategy. The Project is based on technical, financial and institutional assessment of the water supply and wastewater treatment system of the area serviced by SUE "Surkhandarya Suvoqava". It incorporates the technically and financially sound investments aimed at achieving a safe and reliable water supply to households residing in the Project area in an environmentally, socially and economically sustainable fashion.

The objectives of the Project are:

- › improvement of Company's operational efficiency;
- › reduction of operational costs;
- › reduction of water losses;
- › improvement of services' reliability and quality including improvement of the quality of water supplied to consumers in line with EU standards;
- › minimisation of impact on water quality (public health); and, last but not least,
- › minimisation of negative environmental and social (E&S) impacts.

Implementation of PIP projects will allow a reaching significant positive effect on the social environment due to increasing the total operating reliability and sustainability of the water supply.

The activities included in the PIP were defined as a priority because they:

- › improve the reliability of the service;
- › ensure due quality of the supplied water;
- › create new connections;
- › improve the compliance with the national regulations and European Bank for Reconstruction and Development (EBRD) Performance Requirements (PRs);
- › improve the operational efficiency, the safety of employees and the quality of the work;
- › are financially feasible.

The Project will have the following outcomes:

- › reduction of community health risks related to the secondary contamination;
- › improved natural resources management through operation of low-energy equipment;
- › improvement of reliability of water services as well as the quality of life in the communities as a result of better Company's asset management and improved occupational health and safety (OHS) and labour conditions;
- › improvement of the quality of water supplied to consumers compared to existing supplies and other sources used by the local communities;
- › operating in compliance with national legislative requirements.

It is however recognised that during implementation the increased provision of water supply will have an indirect effect on the generation of wastewater from the use of the improved water supplies. As wastewater treatment is severely lacking in the Oblast and therefore the generation of more wastewater could result in further contamination to soils and surface/groundwaters; there should be a longer term plan at the Company to address issues at the existing WWTP and to expand the WWTP network in the future.

1.2 Who will pay for the improvements?

EBRD is considering a senior loan to the Government of Uzbekistan to finance priority investments in rehabilitation and modernisation of the water intake facilities as well as water distribution networks for the Company. The Project is expected to allow connection of the new customers, improve quality and reliability of services, reduce losses, as well as enhance the operational and financial efficiency of the Company.

A loan from the Bank will be the source of the financing of the Project. The loan is expected to be repaid from cost savings and increased revenue generation.

The Project is Categorised as "B" in accordance with the EBRD's Environmental and Social Policy (ESP) 2014. The Environmental and Social Due Diligence (ESDD) for the proposed PIP for the Project was carried out as part of the Feasibility Study by independent consultants engaged by the EBRD. It included a review of current practices, an assessment of the Project's potential E&S impacts and a review of the Company's E&S provisions and management capacities. All PIP components in the future will be subject to local permitting procedures and passing the local EIA process (OVOS – local Environmental Impact Assessment). An Environmental and Social Action Plan (ESAP) has been developed for the Project and forms an integral part of the Loan Agreement.

The ESDD of the Project was carried out within the scope of the Feasibility Study so as to identify risks, impacts and benefits and to structure the Project to comply with the EBRD ESP (2014) and PRs. The works undertaken within the scope of ESDD included, among others:

- › Identifying existing and Project-related E&S impacts and risks (including implications in terms of gender and for vulnerable groups);
- › Describing and characterising relevant E&S baseline commensurate with the risks posed by the current site operations and the Project;
- › Addressing gender issues in the ESDD and through the PRs related to the Project, including employment opportunities for women and tailored stakeholder engagement provisions;
- › Reviewing the Project Company existing environmental and social management systems, policies and practices, including human resources and employment, OHS, and pollution prevention measures available at the facilities.

As part of the ESDD, an Environmental and Social Assessment was undertaken and a draft Environmental and Social Assessment Report in accordance with the Bank's requirements as defined in the ESP was prepared, including a Summary table on Compliance with the Bank's PRs.

The Company has assigned H&S and HR personnel with partial understanding of E&S national legal responsibilities related to its operations. The Company is operating in general compliance with national legislation and related permits (where issued). For non-compliances identified corrective measures have been identified in the ESAP.

2 Description of the PIP

The PIP proposes to implement activities related to integrated reconstruction and modernisation of the water supply and the distribution facilities of Surkhandarya Oblast. The long-term investment program for the modernization of the water supply and wastewater treatment systems involves much more extensive list of projects, including projects for wastewater treatment modernisation. However, the PIP focuses on water supply projects. All projects will be developed using modern technologies and standards, which will allow to meet national requirements and the requirements of the EU.

The PIP includes the following components:

1. *Drinking water supply in the Muzrabad district, including:*
 - › *The new construction of an underground water intake in the Pashkhurt settlement;*
 - › *Modernization of Oktosh water intake;*
 - › *Construction of water ducts from Pashkurt water intake to Oktosh Water Distribution Units (WDU)¹;*
 - › *Construction of a water duct from Oktosh WDU to Central WDU in the Halkabod city;*
 - › *Connecting rural settlements;*
 - › *Reconstruction of street networks of Muzrabad district.*
2. *Reconstruction and modernization of damaged WDUs;*
3. *Reconstruction of street networks in the zone of new WDUs;*
4. *Installation of flow meters at all supply water ducts and inlets to local systems (in villages and urban-type settlements), including SCADA (Supervisory Control and Data Acquisition);*
5. *Procurement and installation of control valves on the main and street water networks;*
6. *Delivery of maintenance and repair equipment and special vehicles;*
7. *Development of hydraulic models and GIS (Geographic Information System).*

For the purposes of the E&S assessment of the PIP, some of the components with similar possible E&S impacts were analysed together:

1. *New construction and modernization of water intakes in the Muzrabad district:*
New construction of an underground water intake in the Pashkhurt settlement and modernization of Oktosh water intake of Muzrabad district
2. *Construction and reconstruction of Water ducts and networks in the Muzrabad district:*
 - › *Construction of water ducts from Pashkurt water intake to Oktosh WDU*
 - › *Construction of a water duct from Oktosh WDU to Central WDU in the Halkabod city*
 - › *Connecting rural settlements*
 - › *Reconstruction of street networks of Muzrabad district*
3. *Reconstruction and modernization of damaged Water Distribution Unit;*
4. *Installation of flow meters at all supply water ducts and inlets to local systems, including SCADA and development of hydraulic models and GIS and Procurement and installation of control valves on the main and street water networks;*

¹ The WDU (Water Distribution Unit) usually includes reservoirs, water towers, on-site networks, chlorination, pumping stations, other auxiliary facilities, or from own wells.

5. Procurement of maintenance and repair equipment and special vehicles.

A summary of the findings of the E&S assessment are provided below.

2.1 New construction of an underground water intake in the Pashkhurt settlement and modernization of Oktosh water intake of Muzrabad district

Currently the greatest problem with water supply in the Oblast are in Muzrabad district. This district is located in the south-western part of the Oblast and uses underground water sources. The water is very hard - up to 17–18 mg/eq.- and has a high level of salinity (up to 3 mg /l in dry residue), which is significantly higher than regulatory requirements. The lack of water sources with standard quality prevents the development of water supply in the district.

To improve water supply in the settlements of Muzrabad district, it is planned to build a new water intake in the Pashkhurt settlement and perform modernization of Oktosh water intake with a water duct to provide a quality water supply.

The water sources are planned to be Pashkurt and Oktosh groundwater deposits. These deposits are located in Sherabad district in the Pashkurt syncline. The approved reserves of the Pashkurt deposit are 20 thousand m³ per day and of the Oktosh deposit 18 thousand m³ per day. Water quality fully complies with regulatory requirements, the hardness is 4-5 mg/eq.

2.1.1 New construction of an underground water intake in the Pashkhurt settlement

Currently the Pashkurt deposit has two wells, the total water intake does not exceed 2000 m³ per day; water is used for the settlement water supply. The site of the water intake is located at an altitude of 830 m above sea level.

The construction of 10 wells, on-site networks, CWR (clean water reservoir), a pumping station, auxiliary facilities and fencing are assumed to be realized at Pashkurt water intake. The design capacity of water intake is 16 thousand m³/day.

2.1.2 Modernization of Oktosh water intake

The Oktosh deposit is used for water supply of the Oktosh kishlak (rural settlement). There are currently 5 wells in the water intake and 3 of them are in operation. The current daily intake is not more than 3 thousand m³ per day.

Modernization of Oktosh water intake includes reconstruction of the 5 wells, CWR, on-site networks, construction of fencing and auxiliary buildings is required. The design capacity of the water intake after reconstruction will be 6 thousand m³/day.

2.1.3 Expected environmental and social benefits

Expected environmental and social benefits for the people in Surkhandarya oblast include:

- › Water supply of standard quality for 130 thousand people (existing consumers);
- › Connection of about 110 thousand new consumers;
- › Improvement of the quality of water supplied to consumers compared to the current situation.

2.2 Construction and reconstruction of water ducts and networks in Muzrabad district

The poor condition of the networks and the high level of losses lead to an excessive consumption of electricity, which forces the Company to limit the operating time of the pumps and the time of water supply. The transition to round-the-clock supply leads to a significant increase in losses, since sales volumes remain virtually unchanged, and the supply volume grows several times.

The wear of the networks causes high water losses and accidents. Poor condition of networks and facilities does not allow providing of water supply to all consumers and limits the possibility of socio-economic development of the territory.

2.2.1 Construction of water ducts from Pashkurt water intake to Oktosh Water Distribution Unit (WDU)

Construction of water duct with D 300 mm and total length of 21 km.

2.2.2 Construction of a water duct from Oktosh WDU to Central WDU in Khalkabod city

It is assumed that this duct will be constructed of the gravity-type only. The total length of the duct will be about 52 km and the diameter 500 mm. After clarifying the duct route, the length can be adjusted both downwards and upwards.

Water from the Pashkurt and Oktosh water intakes will be mixed with the water of the Central WDU in Khalkabod city, so the final water hardness will not exceed the standard values. Thus, the total volume of water available for use will be doubled, which will ensure new connections in the future.

2.2.3 Connecting rural settlements

Connection of rural settlements (kishlaks) located along the duct route from Oktosh water intake to the city of Khalkabad includes construction of supply water ducts (D 200 mm, with total length about 30 km), construction of reservoirs (average volume is 200 m³) and distribution networks in the kishlaks.

2.2.4 Reconstruction of street networks of Muzrabad district

Construction and reconstruction of networks in the zone of influence of the new a WDUs, in total about 70 km of pipelines of D 50-150 mm will be constructed.

2.2.5 Expected environmental and social benefits

Expected environmental and social benefits for population of Muzrabad district include:

- › Construction of water ducts from Pashkurt water intake to Oktosh WDU resulting in improvement of water quality for 130 thousand people and connection of additional 110 thousand people;
- › Connection of rural settlements resulting in new connection of 30 thousand people;
- › Construction and reconstruction of networks in the zone of influence of new WDU resulting in provision of water supply services to about 50 thousand people;
- › Improvement of the quality of water supplied to consumers compared to current standards.

2.3 Reconstruction and modernization of damaged Water Distribution Unit (WDU)

Some WDUs which were transferred to the Company for operation are inoperative conditions. This is due to the failure of the pumps, electric power equipment, destruction of reservoirs etc. Water from the main water ducts is supplied to the reservoirs, but it does not enter the settlement network or comes with insufficient pressure.

There are also a large number of wells where the pumps are inoperative. This causes a reduction of the volume of the supplied water up to a complete stop of supply.

This works proposed include reconstruction, modernization of damaged pumping stations, replacing mechanical and electrical equipment, performing capital repair of building structures, including CWR, restoration of fencing and repair of the on-site networks. Around 18 WDUs will be modernized during project implementation.

2.3.1 Expected environmental and social benefits

Expected environmental and social benefits include:

- › Restoration of water supply in rural areas;
- › Possible development of the networks and new connections;
- › Improvement of sanitary and social living conditions, reduction of epidemiological risks.

2.4 Installation of flow meters at all supply water ducts and inlets to local systems, including SCADA and development of hydraulic models and GIS and Procurement and installation of control valves on the main and street water networks

Currently the Company does not have electronic map and map-boards for water supply and sewage networks, which can fully show the location of all linear and site objects. Some network drawings are based on data from the 1980s. There are no hydraulic calculations, which does not allow optimization of water supply mode and an increase in the duration of guaranteed services.

Reconstruction of the water supply system (including WDUs) and the construction and reconstruction of wells, the replacement of equipment on emergency mode and the construction of new water pipelines will make it possible to supply the region with the volumes of water necessary to meet demand. For a more effective planning of such work, it is necessary to have accounted (measured) consumption and extraction of water, and control of the water balance in all individual settlements. It is also required to reproduce all the cartographic data on the location of networks and structures, followed by the introduction of hydraulic models for the largest and most complex systems.

This component assumes the development of an electronic model of the water supply system in the city of Termez and Khojipak group water supply system. The model will be based on the electronic map of the systems according to the GIS.

Purchase of valves, plungers, replacement of broken fittings etc. will be also performed on existing street water networks.

2.4.1 Expected environmental and social benefits

By improving the hydraulic modes of networks, the implementation of this component will allow:

- › Optimization of the work on the reduction of water losses;
- › Optimization of modes of water supply to the consumers;
- › Reduction of power consumption for water transportation;
- › Optimization of metering system for water production and consumption;
- › Improvement of the efficiency of operation of water supply systems and the effectiveness of planning the development of water supply systems.

2.5 Procurement of maintenance and repair equipment and special vehicles

Today the Company is experiencing a shortage of equipment for the maintenance and repair of engineering networks and facilities. The most affiliated offices have no machinery for elimination the accidents. Due to the lack of equipment and vehicles many accidents are not eliminated for months, most valves are inoperative, numerous leaks lead to water deficit, the volume of planned repairs and the Company's production efficiency is reduced.

As a result: (i) many emergencies at water supply and wastewater networks are not recovered for months, (ii) majority of valves are out of operation, (iii) the sewerage system is clogged, (iv) wastewater pollutes the environment, and (v) the scope of scheduled repairs and maintenance is very low.

No additional negative environmental impacts will arise at the operation stage.

2.5.1 Expected environmental and social benefits

Benefits from the implementation of this PIP component are the following:

- › Improving the efficiency of the Company's daily operating activities;
- › Reducing the duration of emergency water shutdowns;
- › Reducing water leakage losses;
- › Reducing the environmental damage from waste water spillage at the blockages on sewer networks.
- › Increasing the volume of works on the reconstruction of networks and other facilities;

Increasing the volume of scheduled repairs.

3 Summary of E&S Report

3.1 What will be the Project impacts?

The E&S assessment process involves an assessment of potential major impacts which may occur during the Project construction and operation phases, and the identification of adequate measures for mitigation of negative impacts, as well as for enhancement of possible positive impacts.

3.2 Environmental and Social impacts and benefits

The main immediate positive effect from the Project implementation will be connection of new customers in Surkhandarya Oblast's settlements to a reliable water supply service. This will minimise the risk of morbidity by water-borne infectious diseases through improved water quality provision. Project implementation will also allow reaching 24-hour supply of better quality water for the existing customers in Surkhandarya Oblast's settlements.

The negative impacts have, mostly, a short-term nature and relate to the construction stage. They are mostly localised to construction sites, within existing boundaries of Company sites, except for the projects related to modernization of water mains and distribution networks, which imply the works implementation outside the Company's existing operational sites. These impacts include noise generated by equipment, local short-term increase of traffic intensity and corresponding air emissions, soil and landscape disturbances during excavation works; and waste management. There is also the potential for labour, working condition and OHS impacts, if not managed appropriately. These impacts can be mitigated by proper works organization, in particular, by implementation of measures recommended by the Consultant in the Environmental and Social Action Plan.

Given the nature of the proposed works outside of existing sites, it will likely be possible to avoid any physical displacement and no resettlement of residential properties will be required. However temporary economic displacement may occur at these sites for construction / reconstruction of networks. It should be noted, that the exact locations and routes of new pipelines or pipes to be replaced is not yet determined. This will be determined in detailed design. The works will be designed to avoid and, where this is not possible, minimise displacement wherever possible which, for the most part for pipes should be possible. Any land requirements for the laying of pipes will assume only temporary requirements. Where economic displacement occurs, a Livelihoods Restoration Plan will be required.

In order to reduce the key impacts associated with reconstruction/construction types of PIP projects, a selected main contractor (or main contractors if different for various projects) will have to develop a Construction Environmental and Social Management and Monitoring Plan (the "CESMMP"). The CESMMP shall be prepared with due consideration of the identified risks and impacts as well as mitigation measures proposed for the construction phase in this Report and described in the ESAP. Therefore, it is expected that the PIP implementation can potentially cause moderate impacts which can be reduced to minor through appropriate management of the construction works.

The Company will be required to provide a regular performance monitoring of the contractors and/or subcontractors in respect to CESMMP compliance.

The long-term effects of the overall PIP implementation have mostly a positive social character and relate to the provision of better services to the population, i.e. improvement of water supply services; and creation of possibilities for new connections to the water-supply and sewerage systems. It should also be noted, that among all groups of customers the main beneficiaries of PIP implementation will be women since traditionally in Uzbekistan they do most of the housekeeping. Lack of water and waste water infrastructure puts disproportionate time burden on women (i.e. finding and collecting water, boiling water for drinking, washing, cooking, bathing children and other family members, etc.), thereby diverting them from potentially income-generating activities, such as formal and/or informal work ranging from agricultural labour to small businesses. The lost potential is damaging to women and their

families but is also impacting communities and the local economy. The responsibility of carrying water for domestic use often relies mostly on women and children, who can spend many hours per day fetching water, depending on the topography, distance from water source and size of the family. When water is scarce, women and girls may have to travel longer distances to obtain water, which can expose them to danger and further to gender based violence. Implementation of PIP will contribute to solving above described gender issues and providing better life standards for women in the region.

In terms of environmental benefits, these include a tangible reduction of water losses, improvement of drinking water quality over the existing situation associated with non-serviced supply e.g. wells and with water supplied through old and deteriorating pipes, and improvements of occupational safety and working conditions for the Company personnel. In general, more reliable functioning of the water supply systems is expected.

The PIP is an essential step in the complex upgrade of the water supply system of Surkhandarya Oblast. It addresses some of the major social and environmental problems; however, some of the investments from the long list are not included in the PIP and will be implemented later. Suggestions for the EHS system modernisation for the Company are also provided in the ESAP.

The main adverse impact during operation of PIP will be the indirect effect of the generation of wastewater from the use of the improved water supplies. As indicated earlier in the document, wastewater treatment is severely lacking in the Oblast and therefore the generation of more wastewater could result in further contamination to soils and surface/groundwaters. Therefore, there should be a longer term plan at the Company to address issues at the existing WWTP and to expand the WWTP network in the future and this is identified in the ESAP.

In terms of water quality, the lack of long term, reliable datasets prevents concluding that EU standards can be met for all parameters, unless additional measures are implemented. Based on the available information, three EU parameters (*Total Coliforms; turbidity and sulphates*) are currently not met; of these, only one parameter (sulphates) exceeds the EU standards at source (raw water) whereas the other two parameters are a result of secondary contamination in the distribution networks. There is, however, insufficient long-term data to determine whether these are consistent non-compliances and that all other parameters are met on a consistent basis.

To address the coliform contamination problem the company should ensure that water is chlorinated consistently and in accordance with the norms, which currently occurs on a periodic basis. The turbidity and sulphates can be addressed by mixing water from the existing source (where the exceedances of these parameters are observed) with the water from the new underground sources (where the water quality parameters are satisfactory) in the ratio that will make the diluted water compliant with potable water standards. These items are included into ESAP.

The proposed new groundwater sources which, based on verbal feedback, are generally uncontaminated sources, the provision of new pipes and the proposed treatment by chlorination at all sites may result in these parameters (Total Coliforms; turbidity and sulphates) being met and, therefore, ongoing regular monitoring will be required to confirm this; regular monitoring is a key recommendation of the ESAP. For microbiological parameters it is recommended to perform the analyses at least on a weekly basis, and in some locations – even on a daily basis. For chemical composition the number of parameters shall be extended to cover the parameters regulated by both national and EU standards, whilst the frequency of analyses shall be at least on a monthly basis. Moreover, the monitoring program shall be expanded in order to cover all districts of the Surkhandarya Region outside the city of Termez.

Overall, the project will deliver an improvement to water quality over current conditions due to replacement of pipes that will prevent contamination of the water supply. If all the additional measures (chlorination, proper water mix, proper water quality monitoring and immediate follow-up measures) are fully implemented in line with the ESAP, the water quality parameter are expected to meet both local and EU requirements.

The analysis of the PIP components shows that short-term adverse environmental and social impacts are possible during construction works that can be managed through the ESMMP. Overall, the project's

implementation will contribute to a tangible enhancement of the Company's environmental and operational performance and will reduce its impact on the environment.

Environmental effects

Negative impacts are mostly of a short-term nature and relate to the construction stage. These impacts include noise generated by equipment, local short-term increases in traffic intensity and corresponding air pollution, and soil and landscape disturbances during excavation works. These impacts can be mitigated by proper organization of works.

Energy saving

During PIP implementation outdated electrical installations will be replaced, and adequate conditions will be created for the selection of the most efficient operational mode of the overall system. However, due to the implementation of the energy consuming components of the PIP (Modernisation of existing Pumping Stations and New Water Intakes and Pumping Stations) the resulting increase of electricity consumption after PIP implementation is estimated as approx. 6,406 MWh per year.

Water resources saving

Implementation of the water metering project, combined with the technical upgrade of the respective facilities will help to significantly reduce water losses in the water supply network and enhance water saving.

Greenhouse gases emission reduction

In the Surkhandarya Oblast, a fairly significant increase in electricity consumption is expected in the amount of 6,406 MWh per year as a result of the PIP. In terms of GHG emissions (under Scope 2), this means an increase in emissions of 3,414 t-eq. CO₂ per year.

Wastewater generation

An indirect effect of increased water supply will be the generation of wastewater from the use of the improved water supplies.

Social effects

Elimination of the liquid chlorine use

Construction of the new disinfection utilizing the electrolysis technique facilities will allow elimination of the use of the liquid chlorine. It will contribute to the safer operation of facilities. The risk of chlorine involving accidents will also be totally prevented which will have a positive effect on the health and safety of general public.

Physical and economic displacement

There is the potential for a small amount of temporary economic displacement associated with new pipeline routes, depending on final alignments which will be clarified at the detailed design stage. Full value and the method of compensation is yet to be undertaken by the Company and should be recorded in a Land Acquisition and Livelihoods Restoration Plan.

Improvement of water supply reliability

The projects related to networks development planning, rehabilitation of water supply networks and water intakes, and adjustment of operational modes will allow improvement of the operational reliability of the system, as well as reduction of the total failure rate and, correspondingly, the frequency of repairs and emergency disconnections of the consumers will allow to maintain water supply services for 130 thousand people in Surkhandarya Oblast. Affordability of tariff reforms is briefly described in section 3.4 below. Full analysis is provided in the section 2.3 of the Main Report.

Connection of the new residential areas

Implementation of the project will lead to the development of the water supply and wastewater system of the region, and, thus, will create possibilities for new connections to the water supply system for additional 110 thousand people in the Surkhandarya oblast due to the Oktosh water intake construction and Pashkurt water intake reconstruction.

Improvement of drinking water quality supplied to consumers

Upon the implementation of a number of PIP projects such as the rehabilitation of water intakes and WDU facilities, new construction and rehabilitation of water supply networks the quality of drinking water supplied to households will be improved owing to the lower secondary contamination associated with the pipe obsolescence. Chlorination of the water supply will also guarantee disinfection of bacterial contaminants. This will reduce the risk of morbidity for 120 thousand people due to reasons related to non-compliance of water quality with regulatory requirements expected. Whilst the lack of data prevents confirmation that EU standards will be met for all parameters, the ESAP proposes that monitoring of potable water supply quality in comparison with EU and Uzbek standards will be performed by state sanitary authorities, as well as the Company's own laboratory on periodical basis.

Labour costs and Employment

It is expected that PIP components will allow creating 68 new full-time positions for water supply components (cumulatively) in which will mainly be occupied by qualified staff. Future increase of services will also lead to the creating of new well-paid job positions. Therefore, the effect of PIP on the employment can be regarded as positive.

Gender related issues

No additional negative impact on women is expected from the PIP implementation if all mitigation measures (construction workplace arrangement at the first place) will be duly met. There is also a limited positive gender-related impact as stability of the water supply will benefit both genders, however, may benefit women more due to easier accessibility to water as described earlier.

Mitigation

Project mitigation measures, as captured in the ESAP, will include steps aimed to eliminate and minimize adverse project impacts; these measures include:

Legal and best practice compliance – development of the separate EIAs (OVOS) under the national legislation and obtaining approvals and permits prior to start of any activities based on the development of legal compliance checklist. Including standardized clauses specifying that contractors shall comply with the Environmental, Social, Labour, and Health and Safety requirements as described in the requirements of the Uzbek legislation, best international practices and constant control (monitoring) will allow to minimize the risks of non-compliance.

Competence – company and governmental authorities will hire a suitably qualified Environmental, Health and Safety (EHS) Manager and Social (Labour & stakeholder engagement) Manager and Environmental specialist (or Environmental Engineer) to oversee implementation of legal and EBRD E&S requirements.

Environmental – development of EHS procedures and instructions based on the best international practices that can be applied in the frame of Republic of Uzbekistan legislation. Specific procedures/plans outlining correct practice and management for significant environmental impacts and risks covered below to be developed during the project implementation. The development of environmental indicators and monitoring against these indicators will allow to constantly monitor progress towards project aims and goals. Planning the construction works for reconstruction will be outside of the spawning period in order to minimize impact to the fauna.

Labour and Social – development of “feedback” procedures and internal grievance mechanism under a formalized HR policy will enable employees and non-employee workers including construction workers

and other relevant workers to present their proposals on working conditions improvement as well as to submit their complaints.

An additional information campaign on the water meters' installation before the project implementation will be undertaken.

Safety mitigation measures will include both administrative and physical actions, the development of a Construction Health and Safety Plan by the Contractor, a program to reduce cases of the secondary bacterial contamination of water, training program, Community Health and Safety Management Plan, development of emergency preparedness and response plan, as well as ensuring proper fencing and guarding of construction sites, preventing spreading of asbestos containing dust. Appropriate training on EHS subjects will positively minimize the safety associated risks.

3.3 Land Acquisition, Involuntary Resettlement and Economic Displacement

The Company has no established procedures for land acquisition and assessment of physical (including resettlement) or economic displacement. The procedure of determining compensation for potential displacement has not been specified either. In Uzbekistan, compensation requirements are subject of the regional authorities' regulation, not the Company's. At present, to resolve the issues of land use and establishing temporary easement, the Company follows the requirements of the national legislation.

There is no evidence of physical displacement as a result of the proposed Project components related to the construction / modernisation / replacement of water intakes or any works on existing Company sites. The proposed network works outside of Company sites may result in physical and/or economic displacement. It is anticipated that works to extend pipes and networks will mainly be in existing corridors such as roads however, in some areas this could result in temporary loss of land currently used for industrial or agricultural activities. It should be noted, that the exact locations and routes of new pipelines or pipes to be replaced is not yet determined; and will be addressed during detailed design. The works will be designed to avoid and where this is not possible, minimise, displacement wherever possible which, for the most part for pipes should be possible.

Therefore, during project implementation both physical and economic displacement shall be avoided through selection of preferred routes based on ground investigations and application of more selective selection criteria as more detailed planning is progressed.

For all sites where physical and economic displacement is unavoidable, in line with EBRD PR5 a Land Acquisition and Livelihood Restoration Plan will be prepared covering the extent of displacement, compensation requirements and methods of providing compensation. Ongoing activities shall include the stakeholder engagement aspects, management of grievances and monitoring of the effectiveness in meeting the objectives established in the Land Acquisition and Livelihood Restoration.

No cultural heritage findings are anticipated in the work implementation area. Chance find procedures will be executed in accordance with the national law.

3.4 Tariff Affordability

An affordability analysis was carried out within the framework of the feasibility study for water systems modernization project in the Surkhandarya Oblast.

The EBRD affordability methodology has been applied, which defines affordability as the "share of monthly household income/expenditure spent on utility bills". The EBRD methodology applies different threshold levels for different utility services. For water utility services threshold level of 5.0% is used, implying that tariffs resulting in household payments of more than 5.0% of household income/expenditure are considered unaffordable and, potentially, leading to decreased collection and increased water utility accounts receivables.

Based on the analysis for this Project, it is expected that tariffs will not pose affordability constraints on households, as the expenditure for average income household is well below 0.5% during the highest years and substantially lower than the 5% threshold. It will be important that information about the tariffs will be distributed to the households in a timely manner and that there will be a clear link between the tariffs and the delivery of improved services.

4 Summary of ESAP

According to the Environmental and Social Policy of the EBRD, an ESAP should be developed for and implemented during the Project in order to ensure implementation of the project according to the EBRD PRs.

The ESAP prepared for the proposed Project is related to the modernization of the water system and includes the programs and systems to address the E&S impacts within allocated timeframes, responsibilities and resources required.

Main measures included in the ESAP are measures to develop an environmental and health and safety management system and a requirement for these measures to be implemented by Contractors, measures to ensure better quality of environmental monitoring, and measures to ensure safe operation of the facilities.

The ESAP requires the Company to implement a number of improvements designed to meet the EBRD's PRs. The ESAP includes the environmental and social management systems and measures to be implemented:

- › by the Project Implementation Unit (PIU) during the design phase (preparation of documentation, procurement of works, and procurement of equipment from suppliers);
- › by the PIU and contractors during construction works;
- › by the Company during operation of the water supply system.

The key ESAP actions are related to:

- › The PIP project components under construction of Pashkurt water intake and major modernisation of Oktosh water intake require preparation of separate EIAs under the national legislation. The Company will complete these EIAs and obtain the necessary EIA approvals and other permits prior to start of any construction activities. Works shall not be commenced before the approval of the Environmental authority is received. ESMM Plan will include preparation of a checklist of permits for ensuring legal compliance to be used during inspections and audits.
- › Company and PIU will employ a suitably qualified EHS Manager, Environmental Specialist (or Environmental Engineer) and Social (Labour & stakeholder engagement) Manager to oversee implementation of legal and EBRD E&S requirements and implementation of this ESAP at planning, tendering and construction stage.
- › Company will develop an integrated ESMS including EHS procedures and instructions based on the notes and recommendations of best international practices that can be applied in the framework of Republic of Uzbekistan legislation and circulate it through the Company.
- › Company will need to assign relevant budget for tasks related to E&S and OHS issues in a separate block in annual planning.
- › Standardized clauses specifying that all contractors shall comply with the Environmental, Social, Labour, and Health and Safety requirements (including development of “Construction Environmental and Social Management and Monitoring Programme” (CESMMP) as described in the requirements of the Uzbek legislation, best international practices and ESAP will be developed and integrated into the tender documents and new contracts.
- › Contractors monitoring programme will be developed and implemented which will include briefing Contractors on the Project EHS and labour requirements and undertaking regular checks on Contractor performance to ensure compliance with the E&S requirements.
- › Formalised HR policy and procedures/supporting documentation including “feedback” procedures and internal grievance mechanism in order to enable employees and non-employee workers including construction workers and other relevant workers to present their proposals on working conditions improvement as well as to submit their complaints will be developed.

- › Including H&S clauses about briefing/training Contractors on the Project EHS and labour requirements, and regular checks through inspections and audits on their performance to ensure compliance with the E&S requirements.
- › Public awareness program aimed to increase the water effective use and prevention of accidents of water networks.
- › Actions aimed to prevent spreading of asbestos containing dust, especially during demolition of structures and excavation of old pipes, development of procedure for the handling of asbestos wastes will be the part of H&S actions.
- › Development of tariff structure that would provide for the guaranteed subsidies to contain the tariff growth to the acceptable levels and implement a monitoring system to ensure affordability to low-income and vulnerable groups.
- › Company will develop a Land Acquisition and Livelihoods Restoration Framework which will cover an outline of the gaps between national legislation and EBRD PR5 and how these gaps will be addressed in principle where Company works may result in physical and/or economic displacement. Company will also prepare a Land Acquisition and Livelihoods Restoration Plan in line with the Framework where any works proposed will result in physical and/or economic displacement identifying specific affected persons and compensation requirements.

5 Proposed engagement of stakeholders

5.1 Who are the stakeholders?

The stakeholders are the organisations, institutes and individuals who are responsible for, interested in or affected by the proposed Project. The employees of the Company are the internal stakeholders of the Project. Other parties are the external stakeholders and may include suppliers and contractors, customers, national regulatory and certification authorities, investors, local civil society groups, trade unions, Non-governmental Organisation (NGOs), political parties, other companies, and the press and social media.

5.2 How and when are the stakeholders engaged?

The PIU will be established within the Project Implementation Agency (Ministry of Housing and Communal Services) during project planning and construction phase. The PIU will make sure that the Uzbek governmental agencies, local community organisations, the mass media and the general public including men and women and vulnerable people are informed about the Project and can participate in the process of identifying and communicating issues of concern, and in the analysis of the Project. The Project related information and consultation activities will be also carried out during all other phases of the Project preparation and implementation, so that concerns of people potentially affected by the Project can be known and addressed.

The information provided about the Project should be sufficient at least for describing what changes will be caused by the Project, where and when these changes are expected.

A stakeholder engagement and disclosure plan detailing methods and content of engagement and disclosure for each type of stakeholders is presented in the SEP. Project ongoing engagement with stakeholders will be undertaken mainly through:

- › information disclosure on the Ministry of Housing and Communal Services website;
- › ongoing engagement during routine operations, directly and in coordination with the Governmental responsible;
- › external feedback and grievance mechanism;
- › regular reports to EBRD;
- › development and disclosure of a SEP.

The Company will identify the most culturally adapted communication channels to target messages effectively so as to be fully transparent and informative. Possible methods to reach the target audience include, but are not limited to, the following:

- › meetings (individual or group, opened to all or focused to specific stakeholders);
- › brochures, posters and informative leaflets;
- › special events;
- › the media (newspaper, radio, TV);
- › website and social media: in particular, to keep ongoing communication with NGOs and other interested stakeholders.

All interactions with stakeholders will be documented and logged, and follow up activities recorded.

A major part of information about the Project preparation was provided to stakeholders during the Feasibility Study and the ESDD. A SEP was prepared and will be disclosed with the E&S Report and this Non-Technical Summary. The PIU will update the SEP and use it as an instrument for planning and recording of the public information and consultation activities. Any updated versions will be disclosed.

5.3 Grievance mechanisms for stakeholders

At the stage of construction and operation of the Project facilities, the comments, questions and complaints will be addressed within the grievance mechanism. The Project SEP includes a mechanism for receiving and addressing grievances from external stakeholders. This grievance mechanism will be based on written forms, which can be filled in by any affected person or organisation and submitted to the SUE “Suvoqava” of Surkhandarya Oblast or the PIU in Tashkent city, who will take action, if required, and inform the author of grievance on the action taken in response to the submitted grievance within 15 days if the answer does not need involvement of other parties or site visits and 30 days if involvement of other parties or site visits are required. The grievance form is presented below.

Claims of persons and companies are to be submitted at:

Uzbekistan, Termez city, Humo Street, 5 Phone: (+998 76)2240690, (+998 76)2240690 email: uy-joykom@umail.uz

If the claims are related to the implementation of this Project, they will be further transferred to Project Implementation Agency (Ministry of Housing and Communal Services) during project planning and construction phase.

Public Grievance Form

Reference No:			
Full Name			
Contact Information <i>Please mark how you wish to be contacted (mail, telephone, e-mail).</i>	By Post: <i>Please provide mailing address:</i> _____ By Telephone: _____ By E-mail _____		
Preferred Language for communication	<input type="checkbox"/> Uzbek	<input type="checkbox"/> Russian	_____ Other
Description of Incident or Grievance: <i>What happened? Where did it happen? To whom did it happen? What is the result of the problem?</i>			
Date of Incident / Grievance:			
	<input type="checkbox"/>	One-time incident / grievance (date _____)	
	<input type="checkbox"/>	Happened more than once (how many times? _____)	
	<input type="checkbox"/>	On-going (currently experiencing problem)	
What would you like to see happen to resolve the problem?			
Signature:	_____ <i>(personal signature)</i>		
Date:	_____ <i>(day-month-year)</i>		
Please return this form to:	Name of Contact Person, Position and Title: _____		
	Address:	_____	
	E-mail:	_____	
	Tel.:	_____	
	Fax:	_____	