Non Technical Summary

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Beneficiary

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Disclaimer

The contents of this publication reflect the opinions of the Consultant and do not necessarily reflect the views of the EBRD.

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1. NON TECHNICAL SUMMARY

The State Communal Enterprise "Astana Su Arnasy" (ASA) supported by the Akimat of Astana approached the European Bank for Reconstruction and Development (EBRD) with a request to finance the priority investments for the rehabilitation of its water supply and wastewater management facilities, resulting in enhanced operations efficiency, a reduction in losses and improvements in environmental standards. In autumn 2015 the EBRD assigned hydrophil in cooperation with Kurylys Expert Project, Gauff and Setec Engineering to carry out technical, environmental and social analyses of the Company ASA to develop a feasibility study and to finally prepare a Priority Investment Plan. The ToR for the Consultancy suggested considering the following water supply and wastewater system components to be part of the PIP:

(i) modernisation of the wastewater pumping stations,
(ii) modernisation of the water intake facilities,
(iii) partial rehabilitation of the water and wastewater networks,
(iv) procurement and installation of individual and bulk water meters and
(v) development and procurement of alternative sludge treatment and disposal.

The Priority Investment Programme (PIP) finally consists of the following items:

PIP items at the city's wastewater treatment plant (WWTP) south east from the city at the left bank of lake Taldykol:

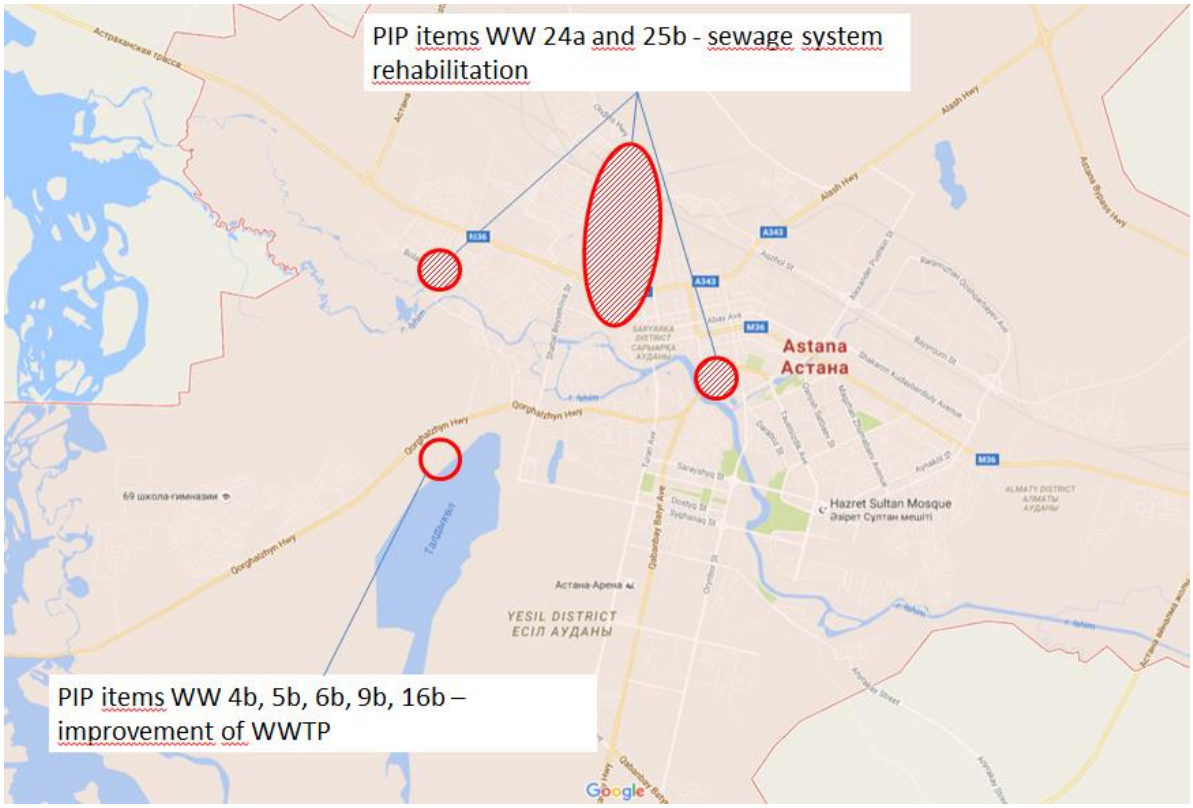
Item 4b: Screening plant inlet pumping station - Construction Works
Item 5b: Aerated sand and grease trap - Construction Works
Item 6b: Primary sedimentation tanks - Covering - Construction Works
Item 9b: Secondary sedimentation tanks - baffle wall / scum drain equipment - Construction Works
Item 16b: Sludge gravity thickening - Construction Works

PIP items within the densely populated areas of the city:

Item 24a: Sewage system rehabilitation (Saryarka district)
Item 25b: Sewage system rehabilitation (Saryarka and Almata districts)

The following map gives an overview of the geographical distribution of the PIP items:

Figure 1: Geographical distribution of the PIP items



Source: Google maps

The implementation of the PIP as a whole will generally have significant and positive impacts during operation on both the environmental and social spheres especially oin the fields of

- Increased **community health and safety** through the reduction of public health risks related to water-borne disease and less odours nuisances originating from the WWTP;
- Increased **OHS provisions** for staff operating at the WWTP through introduction of modern, state of the art facilities;
- Increased **surface and groundwater resources and quality** through improved effluent discharge quality of the WWTP and less leakages in old sewage system parts;
- Less **air emissions**, specifically odours from the WWTP.

Generally, **negative environmental and social impacts associated with the PIP during construction, operation and decommissioning are estimated as site-specific and moderate**. Hence any such **impacts can be easily further reduced, avoided or remedied through the implementation of mitigation measures** and measures to comply with national legal requirements and standards. No impacts on the landscape or cultural heritage are expected. The PIP will also not require any land acquisition or cause economic displacement as all PIP items are located on places owned by the Company or the municipality of Astana.

Environmental and social impacts during construction

For all PIP items except for the sewerage network rehabilitation, despite some additional noise and emissions due to increased construction traffic to and from the WWTP on the existing four-lane Quorghalzhyn Highway, usual negative construction impacts (dust, noise, risk of spillages of hazardous materials etc.) are generally expected only within the WWTP plot. Negative impacts on adjacent communities are negligible as the nearest residential buildings of Astana respectively Urker Township are located approximately 2.5 km from the WWTP. Some of the sub-investments are

construction works within existing buildings or minor adaptations of existing structures with only very minor negative impacts to be expected during the construction phase. Positive impacts during the construction phase are employment opportunities for the local building sector and suppliers.

For the rehabilitation of the sewerage network additional noise and emissions due to increased construction traffic to and from the construction sites as well as construction site associated negative impacts (e.g. dust, noise, limited access due to construction activities) are expected. In the case that the rehabilitation of sewers will include asbestos pipes, special precautions must be taken to avoid OHS risks.

Environmental and social impacts during operation

Impacts on adjacent residents but also all other residents in Astana are predominantly positive due to the reduction of odours but also due to the improved efficiency and operational safety of the WWTP and the sewerage system leading to an increased quality of surface and groundwaters (reduction of risks related to water-borne diseases). Operational health and safety at the WWTP will benefit from introduction of state of the art safety installations. In addition, handling of biohazardous material will be safer for WWTP staff due to introduction of automatized equipment. Overall, the process efficiency of the entire WWTP will be increased due to the operation of the various new components.

For the rehabilitation of the sewerage network positive impacts can be expected due to less leakages of wastewater into the soil respectively the groundwater.

Environmental and social impacts during closure and decommissioning

Environmental impacts during decommissioning of the Company's facilities are similar to construction phase impacts.

Compliance with national laws, EU Environmental, Social, Health and Safety Requirements as well as EBRD's Perfromance Requirements

The Company is in principle **compliant with national environmental, social, health and safety requirements including regulations on drinking water, wastewater treatment and sludge disposal/management**. Improvements of the environmental, health and safety situation should be made following the Company's existing environmental and OHS management systems based on internal and external audits.

A number of issues that require **further action in order to achieve full compliance with the PRs of the EBRD have been identified in the assessment and added to the Environmental and Social Action Plan**. **No material non-compliance with EBRD's PRs was detected**. The project including existing and future components, will generally be able to **meet the relevant EU standards on drinking water, wastewater treatment and sludge disposal/management**. The following actions are however necessary to improve/reach the required effluent quality:

- Upgrade of the WWTP to increase the WWTP capacity so that all incoming wastewaters will be treated and no more untreated wastewater will be discharged into lake Taldykol in order to minimise impacts on the lake and its adjacent groundwater body. This upgrade will be reached with the finalisation of the 2nd WWTP line tentatively in 2017 as well as with the implementation of measures included in the PIP and other measures following a long term strategy;
- Further reduction of the "total nitrogen" concentration in the WWTP's effluent by operational optimisation of the nitrification and denitrification processes in the biological treatment step;
- Collection of effluents from landfills of unstabilised sludge and feedback of effluents to WWTP for treatment.

Stakeholder engagement, information disclosure and communication

A Stakeholder Engagement Plan has been drafted to identify stakeholders including envisaged grievance procedures. Due to the nature of the measures, information will primarily be disclosed via ASA's homepage http://www.astanasu.kz/PressSluzhba.aspx.

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