Appraisal Environmental and Social Review Summary

Appraisal Stage

(ESRS Appraisal Stage)

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BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
West Bank and Gaza	MIDDLE EAST AND NORTH AFRICA	P172578	
Project Name	Gaza Wastewater Management Sustainability (WMS) Project		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Water	Investment Project Financing	3/30/2020	5/21/2020
Borrower(s)	Implementing Agency(ies)		
Palestinian Ministry of Finance and Planning	Palestinian Water Authority		

Proposed Development Objective(s)

The Project Development Objective (PDO) is to: (i) support the continuation of wastewater treatment services in North Gaza; and (ii) strengthen the capacity of the water institutions to efficiently manage wastewater services.

Financing (in USD Million)	Amount
Total Project Cost	12.00

B. Is the project being prepared in a Situation of Urgent Need of Assistance or Capacity Constraints, as per Bank IPF Policy, para. 12?

Yes

C. Summary Description of Proposed Project [including overview of Country, Sectoral & Institutional Contexts and Relationship to CPF]

The West Bank and Gaza (WB&G) are suffering from political instability and deteriorating economic conditions. Real Gross Domestic Product (GDP) contracted in the two consecutive quarters of 2019, first by 2.5 percent in the first quarter of the year compared to the previous quarter, then by an additional 2 percent in the second quarter of 2019 compared to the previous one (preliminary data from the Palestine Central Bureau of Statistics (PCBS). Large inflows of donor support had driven a consumption-led growth. However, inflows of transfers have significantly dropped in recent years. The trade and movement restrictions have created a high risk of disruption in projects or trade and have

kept investment levels low, resulting in a bias towards non-traded services which have less potential for productivity growth. A significant decline in public revenue receipts was witnessed in the first half of 2019 creating severe fiscal shocks. The drop in public revenue forced the Palestinian Authority (PA) to adopt an emergency cash management plan in the first half of 2019 which has led to accumulation of debt from domestic banks, and build up arrears with employees, suppliers and the public pension fund, creating large liquidity challenges for the economy. Poverty rates have increased during 2011-17, with nearly one in three persons living in poverty, which is reflected on a growing welfare divergence between the West Bank and Gaza. Data from PCBS show that the overall share of population below the national poverty line has increased from 26 percent in 2011 to 29 percent in 2017. During the same period, the poverty rate in the West Bank declined from 18 to 14 percent, while poverty in Gaza increased dramatically from 39 to 53 percent leaving every second Gazan below the national poverty line.

High levels of investment have secured high connection rates to water and sanitation services, however these mask important service challenges. About US$1.3 billion has been invested in the Palestinian water and sanitation sector between 2008 and 2018. As a result, 93 percent of the WB&G households are connected to a water network. At the same time, non-revenue water is high for bulk water and retail drinking water distribution which can reach 56 percent in some municipalities. Only 30 percent of households have intermittent water supply every day of the month, while the majority of the population has intermittent access only 11 to 20 days per month. In terms of sanitation, 73 percent of Gaza households and only 32 percent of West Bank households have access to a sewage network. In Gaza, of the 80 million cubic meters (MCM) of wastewater produced per year, around 1 MCM/year was treated and reused, 13 MCM/year was treated and infiltrated into the aquifer for its recovery, and 46 MCM/year was left untreated or partially treated and discharged into the natural drainage, of which part infiltrates and the rest flows to the seashore, contaminating the underlying aquifer and the coastline, which increases the risks of water-borne diseases and reduces the availability of already scarce groundwater resources. The remaining 20 MCM/year of wastewater receive on-site treatment in septic tanks.

The water and sanitation sector in WB&G operates under systemic challenges and distortions which translates to substandard operations, maintenance neglect, and to a heavy burden on PA's budget that should be corrected. Most Service Providers (SPs) are still regulated under the Local Authorities Law of 1997 under the jurisdiction of the Ministry of Local Government (MoLG), which does not require them to function as autonomous and accountable water and wastewater utilities. Most of the 300 municipalities in WB&G have a low collection rate of user fees and tariffs for only a partial cost-recovery of operational and maintenance (O&M) costs, which together with high non-revenue (NRW) rates and non-transparent subsidization of other municipal services means that the SPs run persisting financial deficits. In Gaza, the operating deficit is covered in part by donors and in part through SPs' nonpayment of bills, primarily energy bills; but also by maintenance neglect, and by the low quality of services rendered to the population. The PA attempts to cover the deficit by non-targeted subsidies by making direct payments not covered by SPs like bulk water purchases from Israel, electricity bills, and operation and maintenance costs of wastewater treatment plants. In addition, the on-going political tension in Gaza, together with limited entry of construction material and other supplies into Gaza have hampered the ability to make repairs in existing networks and treatment facilities.

The proposed Gaza Wastewater Management Sustainability (WMS) Project has been designed to finance efficient O&M for the NGWMF for four years and build conditions for sustainable wastewater treatment services. The proposed Gaza WMS project will provide technical and financial resources to prevent the collapse of the NGWMF and continue the operation of the facilities at design capacity, while building a long-term technical, institutional and

financial capacity to operate and maintain wastewater services in northern Gaza. For this purpose, the project will finance efficient O&M expenses for four years excluding electricity which will be financed by the Palestinian Authority, minor rehabilitation of equipment and civil works at the NGWMF to guarantee performance at design capacity. In addition, the project will finance activities to enhance the sustainability of the O&M of wastewater treatment services in Gaza over the medium to long term. It includes upgrading the NGWMF to gain efficiency, resiliency and flexibility of operations to respond to man-made hazards, climate change and political conflicts. On the institutional side, it would finance technical assistance to build capacity for sustainability as well as for designing proper institutional and financial arrangements for the O&M of the NGWMF in conjunction with the PWA, the four municipalities in North Gaza, and the CMWU. By the end of the project, cost recovery situation would have improved, and less O&M support will be needed.

The proposed Project contributes indirectly to the twin objectives of eradicating extreme poverty and sharing prosperity in Gaza, while addressing climate change risks. The project will improve the quality of life of about 368,000 residents in the Governorate of North Gaza. It will ensure the continuous provision of wastewater treatment services, in this way reducing the degree of groundwater pollution due to untreated wastewater flowing into water bodies and reduces the chance of wastewater infrastructure being overwhelmed, thereby reducing the impact of floods. Further, well-treated wastewater could be reused in other sectors such as agriculture, reducing the need for abstraction of limited freshwater resources in drought-prone areas and create economic opportunities for productive use of treated effluent. Well managed wastewater infrastructure in North Gaza is at the core of a healthy life and of ensuring high quality environment services for present and future generations.

Component 1: Support the continued operation of the NGWMF (US$7.1 million). This component is designed to meet the first part of the project's development objective by supporting the urgent need for continuous operation of the NGWMF to avoid its operational collapse, and by protecting the positive impacts of the NGEST project on the environment and health of the population in the surrounding communities. The component will finance a team to operate and maintain the NGWMF and associated costs through the duration of the project, polymers, tools and consumables. It will also finance the costs to dispose sludge. The electricity costs for the operation of the NGWMF will be financed by the Palestinian Authority under agreed standards and protocols.

Component 2: Rehabilitation and upgrade of the NGWMF to improve efficiency, build resiliency and address emergencies (US$3.4 million). This component addresses part of the second part of the PDO on improving technical efficiency and aims at gaining efficiency, resiliency and flexibility of operations of the NGWMF to be able to respond to fluctuating sewage flows on a daily and weekly cycles, increased sewage flows in the wet season, unexpected operational failure, man-made hazards, climate change- related risks and political conflicts. It will also improve the operational performance of the NGWMF and indirectly enable reuse of treated wastewater for agriculture, making operations more efficient and services more reliable, thereby enhancing resilience of drought-prone areas. The component will specifically finance activities in three sub-components: (i) Rehabilitation and retrofitting of underperforming equipment at the NGWMF, including the reparation of a biogas balloon, installation of a new voltage regulation system, and an integrated SCADA system for the TPS and NGWWTP; (ii) Improve the efficiency of operations by upgrading a section of the pond #7 into a lined and aerated Equalization (EQ) basin to enable operations under consistent flow 24 hours per day by storing excess wastewater during peak flows and pumping them back to the TPS during low flows; and (iii) Improve resilience of the system to high precipitation events, unexpected malfunctions of the facilities or damages caused by potential political conflicts by constructing an emergency reservoir on a section of pond #7 and the Random Lakes, allowing for full retention of about six days of wastewater inflows,

which will be then gradually pumped back into the equalizer pond and ultimately into the TPS. These investments will increase the overall resilience of the system to the effects of climate change, in particular, the expected increase in the intensity and frequency of precipitation events, in this way allowing for flood management prevention upstream and downstream of the TPS.

Component 3: Capacity building for sustainability of wastewater services in northern Gaza (US$ 2.2 million). This component is designed to create the capacity for sustainable O&M of wastewater services in North Gaza. As such it also directly addresses the second part of the project's development objective by financing technical assistance to build capacity for sustainability by implementing efficient institutional arrangements for O&M of the NGWMF in conjunction with the PWA, the four municipalities in north Gaza, and the CMWU. The proposed model for the institutional arrangements in north Gaza will lay a sound foundation for a sustainable O&M of the different WWTPs in Gaza. It will specifically finance four sub-components: (i) fiduciary actions for the CMWU that include the preparation along with established mechanisms for implementing of a unified procurement plan, warehouse management and a financial and technical audit of CMWU operations; (ii) support institutional efforts at the national and local levels to reorganize the CMWU into a RWU. These efforts include (a) relevant internal by-law to reorganize the CMWU as a RWU; (b) development of a business plan for the CMWU and implementation of key priorities based on the CMWU's compliance with their fiduciary action (under sub-component 3.i); (c) and facilitation of the establishment of service contracts between the municipalities and the CMWU specifying agreed-upon financial transfers towards the O&M costs of the NGWMF; (iii) capacity building for the operation of the NGWMF through a twinning (peer-to-peer water operator partnership) arrangement between an international experienced utility and the team operating the NGWMF . This could include assessments for revenue generation and cost saving options for the CMWU, such as energy audit to identify high-return energy efficiency measures for the CMWU's WSS services; and facilitate knowledge exchange between wastewater operators in West Bank and Gaza; and (iv) support the building blocks for the financial sustainability of the NGWMF through: (a) a detailed assessment of revenue flows and cost recovery limits in Gaza with a focus on the four north municipalities; (b) supporting arrangements to ensure that the salaries of the NGWMF O&M team can be covered by the CMWU after project closing by assessing different options, including opening an escrow account for the municipal contributions to O&M costs and possible PA matching funds, in kind contributions from the municipalities of personnel to the O&M team, and/or government contribution to cover salaries as a result of potential energy savings; and (c) outreach and communications efforts as part of the project's citizen engagement strategy with a particular focus on raising awareness about the importance of wastewater services and increasing willingness to pay for the services.

Component 4: Project management and implementation support (US$1.0 million). This component seeks to support overall project management, including ensuring compliance with environmental and social safeguards as well as the preparation of engineering designs and tender documents for future investments needed to further enhance the O&M sustainability of the NGWMF. It would specifically finance: (i) the Project Management Unit's core staff in charge of overall project supervision management; (ii) specific activities needed for compliance with environmental and social safeguards (environmental and social audit, awareness campaign regarding environmental and social safeguards with communities nearby the location of the TPS and WWTP, satisfaction survey, among others); (iii) a financial auditing firm; (iv) specific engineering services for the development of technical designs balancing complexity versus life cycle costing, and preparation of the tender documents for the expansion of the NGWMF to a capacity of 64,000 m3/day which is needed to meet wastewater treatment demand in north Gaza after 2025, (v) a detailed study for sludge management options including reuse and cost optimization, and (vi) independent Project Implementation

Consultant (PIC) who will provide technical assistance on the technical design and procurement process and will supervise the implementation of construction contracts.

Component 5: Contingency Emergency Response Component (US$ 0.0 million). Should a natural event, conflict or health emergency precipitate a major disaster affecting the livelihoods of people living in the WB&G, the government may request the World Bank to reallocate project funds to cover some costs of emergency response and recovery. The operational guidelines for implementing the project Contingency Emergency Response Component (CERC) will be laid out in the CERC annex of the Project Implementation Manual (PIM), specifying procurement, safeguard and financial management arrangements, and training of different stakeholders. Disbursements will be made against an approved list of goods, works, and services required to support crisis mitigation, response, recovery, and reconstruction.

D. Environmental and Social Overview

D.1. Project location(s) and salient characteristics relevant to the ES assessment [geographic, environmental, social]

The Project is benefitting the population of Northern Gaza in the Municipalities of Beit Lahia, Um Ennasser, Beit Hanoun and Jabalia. The specific project locations correspond to the different components of the NGWMF, namely: the Terminal Pumping Station and current pond 7 (to be upgraded to an equalization pond and emergency overflow pond); the pressurized transmission line; and the North Gaza Wastewater Treatment Plant (NGWWTP) and infiltration basins. The TPS and Pond 7, (as well as the random lakes formed near the old Beit Lahia WWTP site) are located in an agricultural area near the urban areas of Um Ennasser and Beit Lahia. The NGWWTP and infiltration basins are located in an agricultural area near Jabalia about 300 meters west of the border with Israel, with no urban centers in direct proximity. The transmission line of raw sewage, from the TPS to the NGWWTP, is buried underground and passes through main urban roads and some rural roads near the NGWWTP. The whole area is highly developed either by urban development or agriculture development, therefore no terrestrial natural habitats exist. The project area is a passage for many birds, especially Pond 7 and surrounding lakes of the old Beit Lahia WWTP, however, the Environmental and Social Management Plan (ESMP) prepared for the Project indicates that all bird species are of “Least Concern” according to the IUCN classification.

The Gaza Strip lies over about 2 percent Coastal Aquifer Basin area and the general direction of groundwater flow is towards the coast. The groundwater level over the aquifer lies at depths varying between a few meters from the surface up to 110 meters according to topographical and geological conditions. Groundwater in Gaza is suffering from saltwater intrusion due to the relatively heavy abstraction from the aquifer. The groundwater near the old Beit Lahia WWTP (current location of the TPS and pond 7) has been impacted by the historic discharge of wastewater in the area before the establishment of the NGWMF. Since the NGWMF was constructed in phases, the situation was initially alleviated by the construction and operation of the TPS and discharging partially treated wastewater to the infiltration basins until the commissioning of the NGWWTP. Groundwater monitoring carried out as part of the North Gaza Emergency Sewage Treatment (NGEST) project before the commissioning of the NGWWTP in March 2018, indicated that groundwater abstracted from monitoring wells close to the infiltration basins contained relatively high levels of nitrates, ammonia, detergents and phenols in comparison to wells further west. After the operation of the NGWWTP the modeled concentrations of those parameters showed improvements (lower pollutant concentrations) and that the pollution plume was contained. Although the groundwater monitoring did not continue due to lack of funds the high-quality effluent currently being infiltrated into the aquifer through the infiltration basins is expected to further

improve the situation. The Project sites, and associated facilities, do not include areas of cultural significance, except El Shuhada Cemetery located west of the NGWWTP.

During preparation of the Project the PWA prepared an Environmental and Social Audit (ESA) for the existing assets (TPS, NGWWTP, Pond 7 and other lakes), and this Environmental and Social Management Plan (ESMP) for the new suggested installations and works (under Components 1.2 and 2). The ESMP instrument is selected because the project entails some new equipment that would be installed in existing facilities (the TPS and the NGWWTP) to replace/repair damaged equipment. Also some civil works would be needed in an existing wastewater pond to make it function as an equalization tank. No any works would be done in greenfield or outside the footprint of existing facilities (no any land acquisition or horizontal expansion of existing facilities)

D. 2. Borrower's Institutional Capacity

The Palestinian Water Authority (PWA) will be the implementing agency for the project through a Project Support Management Unit (PMSU). The PWA has long been involved with the Bank in operations in the West Bank and Gaza, including the NGEST project that closed in 2018. Hence, PWA has already built awareness and capacity for compliance with the Bank's safeguards requirements. Although the implementation of the Environmental and Social Framework (ESF) is new to the PWA, their technical staff have benefited from the borrower ESF workshop delivered by the Bank team. At the Project level, the current team in charge of the operation of the NGWMF (now recruited by the PWA) have good operational capacity, as most of them were part of the local team of the joint venture between an international and a local contractor that operated the plant from March 2018 to July 2019. The current NGWWTP operation staff have good experience in the environmental control of the facility, in terms of sludge management, waste management, occupational health and safety (OHS) and odor control. However, the capacity related to specific environmental and social management aspects of the ESF is limited. The operational staff of the TPS has limited environmental and social capacity and their operational capacity needs to be improved. To bridge this gap, the PWA PMSU will recruit an environmental and social officer to be responsible on managing and following up environmental and social aspects of the project. The environmental and social officer will be on board by effectiveness and will report and document the environmental and social performance of the project. Furthermore, the NGWWTP will have an OHS Officer responsible for ensuring that the O&M staff of the whole project (including TPS, Pond 7, adjacent ponds and transmission line) adheres to the OHS plan of operation. As the long term institutional arrangements of the Project is to gradually build the capacity of the Coastal Municipal Water Utility (CMWU) to work as a regional utility, the knowledge and capacity to manage ESF should be transferred to them as part of component 3.

II. SUMMARY OF ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) Substantial

Environmental Risk Rating Substantial

The Project is not likely to cause significant environmental impacts, however overall environmental risks, that includes the community risk, is rated substantial due to legacy of previous incidents around the TPS and the contextual risks related to possible accessibility restrictions to Gaza. The main risks are:
-Possible low performance of the NGWMF and, as a result, infiltration of non-compliant effluent to the underlying aquifer, generation of bad odors affecting neighboring sites and/or generation of un-stabilized sludge (substantial).

This risk is mitigated by the project interventions. Even if low performance occurred, the situation in terms of environmental impacts would be better than the "do nothing alternative" or the situation when the partially treated wastewater infiltrated to the groundwater before the operation of the NGWWTP.
-Risk of improper dewatering and clearing the bed of Pond 7 during installation of lining (substantial). If the capacity of the NGWWTP is full and adjacent random lakes are saturated during this rehabilitation period, the dewatering of Pond 7 may lead to discharge of wastewater at other areas leading to temporarily expanding the impacted area. Another related risk is the handling of the soil forming the bed of Pond 7 that would be cleared to prepare for the lining, this soil would include sediments/sludge that need to be stabilized before disposal. This risk will be mitigated through adequate planning of the dewatering/soil clearance activities to allow draining Pond 7 either to the NGWWTP or temporarily to the adjacent lakes, and to plan for stabilization of bed soil before disposal.
-Risks to the health and safety of workers and community (substantial). Workers and members of the community could be subject of drowning risk at the random lakes and the operators of the TPS/NGWWTP could be subject of occupational health and safety risks. Also, the upgrade of Pond 7 and random lakes (Component 2) would be associated with some occupational health and safety risks for the workers during construction. The community risk is rated substantial due to legacy of previous incidents around the TPS before the big lake was drained through the NGEST project. The risk would be mitigated through the measures already included in the Project design (fencing and improving the embankments), therefore its occurrence is unlikely, and would be further mitigated through awareness campaigns.
-Risks related to waste management, sludge disposal during the operation of the system (substantial). The sludge is currently stabilized and dried at the NGWWTP, therefore their associated impacts are not significant. However, the challenge would be to timely transfer the waste to the landfill to avoid random disposal or accumulation at the NGWWTP. Currently trucks take the stabilized sludge from NGWWTP to the random lakes area, and the PWA needs to allocate sufficient resources to transfer the sludge to the landfill
-Risk of polluted water percolating to the groundwater or causing odor impacts to the area surrounding the random lakes during surge storms (moderate). This would be a temporary impact in case future equalization pond (to be lined and provided with surface aeration) will not have enough capacity to receive storm water and the emergency overflow pond (which will be also improved as part of the Project but will not be lined and aerated) would receive the excess water. This risk will be minimized through the gradual pumping of storm-water from the emergency overflow pond to the equalization pond, and then to the TPS and NGWWTP after the rain events. It could be further mitigated by implementing an early warning system for storms and make certain adaptation measures.
-Noise, air emissions and traffic during construction (moderate).

Social Risk Rating Substantial

Overall, as noted above, the project has positive environmental and social impacts. One of the objectives of the project is to prevent the collapse of the NGWMF. The collapse of the NGWMF would endanger the health of the population of Northern Gaza, as well as the health and safety of those living near the TPS, ponds, and NGWWTP. A number of lakes were created randomly before the NGWMF were constructed. Prior to that, untreated wastewater pooled into lakes over an area of 30ha, due to a lack of natural drainage and prohibitions to discharge the wastewater to the sea. Before the NGWMF were put into operation the embankment of lake was breached, causing several fatalities in the communities downstream. They were dried up when the NGWWTP was built and became operationalized; however, a number of random lakes, including pond 7, started to receive wastewater due to the disruption in the operation of NGWWTP. Subcomponent 2.1 under WWTP will finance upgrading of the existing pond

#7 which is adjacent to the TPS to not only reinforce its embankment but to upgrade a section of pond #7 into an Equalization (EQ) basin with a capacity of 45,000m3 to provide consistent influent flow to downstream processes by retaining high flow fluctuations. In this way, the TPS and WWTP will be able to operate under consistent flows 24 hours per day. A second section of the pond 7 and an adjacent section of the random lakes will be upgraded to store the excess influent flows in high precipitation events, unexpected malfunctions of the facilities or damages caused by potential political conflicts.

The treated effluent is to be infiltrated into the local aquifer and repumped for agricultural reuse. The potential for wastewater reuse offers opportunities for increasing the efficiency of water use, reducing pollution, and improving agricultural production. Despite these, social risks, is rated as substantial that include:

- Risk of overflow and wastewater flooding from the existing lakes and pond #7 in the event of malfunctioning of the NGWMF due to unforeseen circumstances such as excessive rain, power cut-offs, conflict, etc. This risk is being mitigated by the activities foreseen under component 2.
- Poor safety measures such as proper fencing around these facilities and missing of warning signs around the sites can be a health hazard to the community, especially children
- Risk of getting unequal job opportunities for women in the project due restriction of women's work in construction.
- Some risks that for the vulnerable groups in the communities around the project may be excluded from participation in the consultations that will be undertaken in various stages of the project.
- Weak community interaction with the project, due to the lack of trust and confidence between the community and municipalities related to the ability of the municipalities in accomplishing and operating the project components.. .
- Expected conflicts between municipalities regarding ownership of the project or their contributions that may adversely affect the implementation.
- Community health impact due to excessive movement of vehicles during transferring of solid waste, construction debris, and sludge, as well as exposure of children to uncontrolled sludge dumping sites near the existing ponds and facilities, which also create breeding grounds for mosquitos and flies.

These risks are mitigated under the project through community outreach, proper disposal of sludge, reinforcing of the embankment of Lake 7, fencing of the sites and signage. SEP includes measure for the inclusion of the vulnerable communites and people throughout the consultations processes and outreach that includes regular workshops and communication campaigns with the community. The focus group meetings will be organized in a way to ensure inclusion of this group. As part of community outreach, a number of workshops are planned to start within the first 6 months of the project.

B. Environment and Social Standards (ESSs) that Apply to the Activities Being Considered

B.1. General Assessment

ESS1 Assessment and Management of Environmental and Social Risks and Impacts

Overview of the relevance of the Standard for the Project:

Given the E&S risks associated with the different Project components, as indicated above, there is a need to assess the environmental and social risks according to the requirements of ESS1.During preparation of the Project the PWA prepared an Environmental and Social Audit (ESA) for the existing assets (TPS, NGWWTP, Pond 7 and other lakes), and an Environmental and Social Management Plan (ESMP) for the new suggested installations and works (under Components 1.2 and 2). The ESMP instrument is selected because the project entails some new equipment that would be installed in existing facilities (the TPS and the NGWWTP) to replace/repair damaged equipment. Also some civil works would be needed in an existing wastewater pond to make it function as an equalization tank. No any works would be done in greenfield or outside the footprint of existing facilities (no any land acquisition or horizontal expansion of existing facilities). The ESMP instrument is selected for this project to identify measures and actions in accordance with the mitigation hierarchy that reduce potentially adverse environmental and social impacts to acceptable levels due to small scale and localized nature of the construction works and O&M activities are within the footprint of BLWWTP and NGEST and no excavation will be carried out except for small segment within BLWWTP site for the overflow pipe line. The ESA looked at the different E&S aspects of the current operations, checked on the compliance with the ESIA/ESMP of the NGEST Project and identified areas that needs improvements to meet the ESF requirements during future operations. The ESA found that the ESMP measures are complied with the environmental controls of NGWWTP (operation of the infiltration basins, control of neighboring wells, noise and odor control systems). The ESA found partial compliances / non compliances with the ESMP on the following: the monitoring program was not conducted at the required frequencies, malfunctioning of the odor control system at the TPS, staff training for handling oils were not conducted, polymers and lubricants were not purchased timely, some poor management OHS issues were observed and absence of emergency repose plan.

The ESMP for the new suggested installation and works has been prepared to identify different E&S risks and impacts, according to the requirements of ESS1, and to identify measures to mitigate negative impacts. The ESMP identified different environmental and social risks during the construction and operation of the Project and recommended mitigation measures relevant to each phase. The ESMP is highly aligned with the ESA in identifying the mitigation measures related to the operation of the whole system. The types of risks/impacts identified in the ESA and ESMP could be either prevented or minimized through precautionary measures that are recommenced (and will be further elaborated in the Contractor Environmental and Social Management Plan (CESMP) and Operation Manual (OM) or could be mitigated (such as the impacts related to surge storms and residual noise/dust impacts during construction). The recommendations of both the ESMP and the ESA are either already included in the Project Design (such as repairing malfunctioning equipment as part of Component 1.2) or will be part of the Borrower commitments that will be part of the CESMP and OM, both are included in the ESCP.

If the CERC component is activated during the project implementation the client (PWA) will prepare the ESMF for the CERC component.

ESS10 Stakeholder Engagement and Information Disclosure

The Stakeholder Engagement Plan identified three main categories of project-affected parties, namely the local communities residing in the project areas, the farmers who will benefit from the project indirectly and the municipalities in the northern governorate of the Gaza Strip.

Local communities residing in the project areas
This category of PAPs includes people identified based on their geographical location in the vicinity of the project sites and the local communities in the northern municipalities who will benefit from the improved sanitation services.

Farmers in Jabalia and Beit Hanoun Municipalities
This category of PAPs includes the farmers who will benefit from the improvement of the treated wastewater quality after the implementation of the recovery scheme that can be used to irrigate their farms. Some of these farmers adjacent or close to pond #7 the random lakes are also at risk in case there a breach of the embankments

Municipalities in the northern governorate
The northern governorate in the Gaza Strip comprises four municipalities, namely municipality of Beit Lahia, municipality of Jabalia, municipality of Beit Hanoun, and municipality of Um Al Naser. These municipalities are identified as project-affected parties given that they are the key beneficiaries of the project, where the wastewater infrastructure will be improved along with the wastewater treatment, disposal and/or reuse. However, Beit Lahia and Jabalia municipalities have some concerns given that project and its associated facilities are located within their governance.

SEP includes specific methodology to reach all stakeholders, especially the local communities to ensure their inclusion and that their voices are heard and concerns addressed. Accordingly, the SEP proposes different sessions for men and women in areas where they do not mix in public; and proposes that consultation meetings to be held during the hours when most affected people could participate. It also includes measures to facilitate the participation of those with physical and other disabilities, among others.
To ensure inclusion of the vulnerable groups in the area, the SEP identified different categories of vulnerability and proposes action for their inclusion. They include: women and Female-headed households; female farmers; people with disabilities; and children and elderly.

B.2. Specific Risks and Impacts

A brief description of the potential environmental and social risks and impacts relevant to the Project.

ESS2 Labor and Working Conditions

ESS2 is relvant. The project activities will involve contracted workers under many contractors and subcontractors who will implement the civil works and technical assistance, direct workers from PWA, and primary supply workers. It is not anticipated that large labor camps will be constructed for the project. Since the construction and equipment supply includes exposure to OHS risks, contractors should prepare a detailed OHS manual as part of the CESMP. Also PWA staff operating the system will be exposed to OHS risks therefore the OM should also include a detailed OHS manual for the operation staff. Labor Management Procedures (LMP) was prepared by PWA and will be disclosed by appraisal End March 2020). The contracts, with Contractors and Subcontractors, will include particular provisions on occupational health and safety measures, child labor and GBV ban, and work conditions, following the general World Bank Guidelines on Environmental Health and Safety (EHS Guidelines) and the more specific Occupational Health and Safety guidelines, especially on Physical Hazards.

ESS3 Resource Efficiency and Pollution Prevention and Management

ESS3 is relevant to the Project as it will involve construction and operation activities that would be generate wastes, could cause pollution and would require considerable energy use. The wastewater treatment and sludge treatment processes will, by definition, prevent pollution caused by wastewater generated from Norther Gaza. If the physical, chemical and biological treatment processes are adequately optimized, which has been the case to a great extent since the start of operation on 2018, additional pollution of the operation (such as odors and vectors) would be prevented at source. The utilization of energy in the system would be optimized using best practices recommended in the EHSG. The installation of voltage regulators and SCADA system, as part of Component 1.2, will help optimizing energy use in TPS and NGWWTP. Furthermore, the repair of the gas balloon, also part of Component 1.2, will enable the recovery of methane from the sludge anaerobic reactor and using it as a source of renewable energy in the NGWWTP. The recovery of infiltrated water in irrigation, although not part of the Project interventions, will depend on the efficient operation of the Project. This would enhance the capacity of the aquifer and will reduce the current pressures, such as saltwater intrusion and over-abstraction, on the coastal aquifer. Also, the study that will be conducted for the options of sludge reuse (part of Component 4) will enhance the resource efficiency. The operation of the TPS and NGWWTP would generate limited amount of hazardous wastes, such as used oils and containers of chemicals, and domestic type waste, which would all need to be properly handled and disposed. All the above measures will be part of the OM, and also the ESO of the Project will keep track on the amount of recovered methane in electricity generation to quantify the climate mitigation benefits of the Project. In addition, PWA will prepare and implement the sludge management plan including handling and disposal for cleaning pond 7 and for the sludge generated during the project operation

ESS4 Community Health and Safety

ESS4 is relevant to the Project, as the existing random lakes are close to urban centers and some incidents occurred in the past, before the operation of the NGEST, where some local residents drowned and the embankments of the lake failed and caused inundation of some adjacent areas. The Project is mitigating this risk through component 2, as the embankments of the random lakes will be improved and the lakes will be fenced as they will used for receiving storm water in emergency situations. Furthermore, awareness campaigns will be initiated for local residents around the TPS to ensure that they are aware of the risks and would be able to avoid it. The awareness campaigns would focus on children who are most vulnerable to such risks. The PWA will should also prepare an Emergency Response Plan (ERP) and e nsure it is in place for the facilities at the Old Beit Lahia wastewater facilities and the random lake. This plan will include, inter alia, an early warning system to allow evacuation of the surrounding communities at risk if and when a flood risk or breach of embankments is imminent. In addtion, ERS will to address unexpected operational conditions, such as failure of some units in the TPS or NGWWTP, climate related extreme conditions (including extreme storms, heatwaves …. etc.), fire risks, risk of armed conflict near the borerline … etc. The ERP will identify management procedures during such emergencies along with certain roles and responsibilities and the required training to staff. During the maintenance of the transmission line, there might be some temporarily disruption of traffic, therefore, a Traffic Management Plan (TMP) will be prepared for such conditions. The ERP and TMP will be part of the OM that will be prepared by PWA. This will be reflected in the ESCP. PWA will prepare and implement a Pest Management

Plan at the Beit lahia Wastewater Facilities to ensure proper control of mosquitos, flies, and other pests at the site, to ensure no adverse impacts to the Bedouin community adjacent to the random lake.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

ESS5 is not currently relevant to the Project. The land where the plant is located belongs to PWA. The Project does not require land take or impact on livelihoods. The only infrastructure activities under the project are related to fencing of the pond number 7 and its associated infrastructure and fencing of the random lakes as well as enforcing the embankment of lake #7. The relevance of ESS5 will be revisited during the project implementation.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 is not relevant to the Project. Most of the project sites are populated urban areas that do not have high biodiversity conservation value and no ecosystem services are likely to be impacted by the Project. However, there are potential impacts on groundwater, seashore and other coastal water which have been dealt with under ESS1.

ESS7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities

ESS7 is not relevant to the Project as no people or communities identified in the project areas who poses the four characteristics as defined under ESS7.

ESS8 Cultural Heritage

ESS8 is relevant to the Project mainly due to having Al Shuhada cemetery next to the NGWWTP. The cemetery has high cultural value to the Gazans and any odor impacts will affect the cultural value of the site, therefore, the efficient operation of the plant will mitigate any such impacts. Most of the Project activities are mainly above-ground with minor earthworks, however, given the historic nature of the country there is always a chance to find tangible Cultural Heritage artifacts. Therefore, a chance fund procedures will be incorporated in in all works' contracts and this will be highlighted in the CESMP.

ESS9 Financial Intermediaries

ESS9 is not relevant to the Project as no financial intermediaries are involved in this project.

B.3 Other Relevant Project Risks

The contextual risk could affect the E&S performance of the Project, especially because of accessibility restrictions from Israel, including the limitations on the supply of spare parts, chemicals and equipment to the plant. Such risk may affect the quality of produced effluent and sludge and may cause several environmental impacts. To mitigate this risk, PWA will maintain a stock of repair parts and material necessary for operation, conduct preventive maintenance and good asset management practices, choose equipment that could be repaired locally and train personnel on maintenance and repair works. In addition to that, most Project assets are close by the borderline which pose risk of exposure to armed conflict. This has occurred in the past when the NGWWTP was shot in some

occasions and the gas balloon was damaged consequently. To mitigate this risk the ERP will include certain procedures to be followed in such circumstances to protect people and assets.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways No

For projects that concern hydrological connectivity between Israel and the West Bank and Gaza it is established Bank practice not to trigger OP 7.50. The Bank relies on the joint arrangements for decision making and information exchange between the concerned parties.

OP 7.60 Projects in Disputed Areas No

III. BORROWER'S ENVIRONMENTAL AND SOCIAL COMMITMENT PLAN (ESCP)

DELIVERABLES against MEASURES AND ACTIONs IDENTIFIED	TIMELINE
ESS 1 Assessment and Management of Environmental and Social Risks and Impacts	
ORGANIZATIONAL STRUCTURE: PWA shall establish and maintain an organizational structure with qualified staff with clear accountabilities to implement all commitments stated in the project ESMP, RAP, SEP, and LMP satisfactory to the Bank. PWA shall assign a part-time environmental officer and a part-time social officer and a full time Occupational Health and Safety Officer (OHSO).	07/2020
ENVIRONMENTAL AND SOCIAL ASSESSMENT: ESMP and ESA will be updated, as needed, by PWA at the detailed design stage of the Project. Require contractor to prepare contractor Environmental and Social Management Plan (CESMP) in alignment with the ESMP and ESA prepared by PWA	03/2021
MANAGEMENT TOOLS AND INSTRUMENTS: Prepare Traffic Management Plan (TMP) in line with the ESMP and ESA, where needed. Require contractor to prepare contractor Environmental and Social Management Plan (CESMP) in alignment with the ESMP and ESA prepared by PWA	04/2021
MANAGEMENT OF CONTRACTORS: Incorporate the relevant E&S requirements including ESHS specifications in the procurement/bidding documents.	11/2020

Ensure that these requirements are incorporated in Civil works and installation of equipment contracts and that the contractor comply with the ESHS specifications of his respective contracts	
PERMIT, CONSENTS AND AUTHORIZATIONS: Obtain or assist in obtaining, as appropriate, the permits, consents and authorizations that are applicable to the Project from relevant national authorities and the Israeli COGAT for equipment and chemicals entry. Comply or cause to comply, as appropriate, with the conditions established in these permits, consents and authorizations. Ensure all suppliers for equipment and raw-materials are authorized.	03/2021
ESS 10 Stakeholder Engagement and Information Disclosure	
Adopt, implement and update the Stakeholder Engagement Plan (SEP) which was prepared for the project in February 2020 in accordance with the terms of the ESF and ESS10	04/2020
PROJECT GRIEVANCE MECHANISM: Prepare, adopt, maintain and operate a grievance mechanism, as described in the LMP and SEP. The GRM should include mechanism for GBV related complaints, including privacy and confidentiality.	11/2020
ESS 2 Labor and Working Conditions	
LABOR MANAGEMENT PROCEDURES: Adopt, and implement the LMP prepared by PWA, disclosed on (end of March 2020) Develop and implement Code of Conduct. Submit for approval civil works contractor(s)' Labor Management Procedure (C-LMP) in line with LMP	03/2021
GRIEVANCE MECHANISM FOR PROJECT WORKERS: Establish, maintain, and operate a grievance mechanism for Project workers and the project operational staff, as described in the LMP and consistent with ESS2. PWA and contractors develop a manual for GRM.	03/2021
OHS MEASURES Ensure contractors prepare, adopt, and implement occupational, health and safety (OHS) manual specified in the ESMP and ESA acceptable to the Association. Ensure Contractor(s) implement OHS measures as detailed in C-LMP.	04/2021
EMERGENCY PREPAREDNESS AND RESPONSE: As part of the manual for OHS measures include measures on emergency preparedness and response and ensure coordination with measures for emergency response.	07/2020

PROJECT WORKERS TRAINING: Project contractors in coordination with PWA is to design and organize training for Project's workers in hygiene, health and safety, sexual transmitted diseases, GBV and SEA.	04/2021
ESS 3 Resource Efficiency and Pollution Prevention and Management	
Adhere to management of wastes and hazardous material, resource recovery measures as required in the ESMP and the ESA , including the repair of methane recovery system and keeping track of amount of methane utilized in energy generation.	07/2020
Prepare and implement the sludge management plan including handling and disposal for cleaning pond 7 and for the sludge generated during the project operation. Plan to be ready.	07/2020
Prepare an emergency plan in case of a malfunction in any of the project facilities occurred during the project operation	04/2021
ESS 4 Community Health and Safety	
TRAFFIC AND ROAD SAFETY: Adopt and implement measures to assess and manage traffic and road safety risks as required in the ESMP and the ESA. A Traffic Management Plan will be prepared for maintenance works for the transmission line.	04/2021
COMMUNITY HEALTH AND SAFETY: Adopt and implement measures and actions to assess and manage sludge handling and disposal and possible malfunction as required in the ESMP and ESA, including management of sludge (explained under ESS3)	07/2020
Prepare and implement a groundwater monitoring plan , which includes water quality monitoring for all municipal wells determined at risk of pollution from the infiltration of wastewater at all project sites	04/2021
Prepare and implement a Pest Management Plan at the Beit lahia Wastewater Facilities to ensure proper control of mosquitos, flies, and other pests at the site, to ensure no adverse impacts to the Bedouin community adjacent to the random lake.	04/2021
GBV AND SEA RISKS: The awareness sessions will be include information on GBV and will be monitored during Project implementation. GRM for SEA will be integrated to track complaints related to GBV and SEA and ensure confidentiality.	04/2021
GBV AND SEA RISKS DURING PROJECT IMPLEMENTATION: Monitor the awareness raising sessions (in 4.2, above). Integrate GRM for GBV and SEA to track complaints related to GBV and SEA identified in LMP and SEP.	04/2021

EMERGENCY RESPONSE MEASURES: Adopt, implement and monitor emergency response measures prepared in ESMP and the ESA, including an early warning system to allow evacuation of the surrounding communities.	04/2021
ESS 5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	
ESS5 not relevant for this project. There are no locations where land acquisition or resettlement is required.	
ESS 6 Biodiversity Conservation and Sustainable Management of Living Natural Resources	
ESS 7 Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	
ESS 8 Cultural Heritage	
CHANCE FINDS: Develop and adopt Chance Finds procedure that will detail what the construction contractors must do in case valuable artifacts or culturally valuable materials are found.	04/2021
MANAGEMETN OF CULTURALLY VALUABLE SITES Monitor any impacts at Al Shuhada cemetery	04/2021
ESS 9 Financial Intermediaries	

B.3. Reliance on Borrower's policy, legal and institutional framework, relevant to the Project risks and impacts

Is this project being prepared for use of Borrower Framework? No

Areas where "Use of Borrower Framework" is being considered:

Project will not use borrower framework

IV. CONTACT POINTS

World Bank

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Borrower/Client/Recipient

Borrower: Palestinian Ministry of Finance and Planning

Implementing Agency(ies)

Implementing Agency: Palestinian Water Authority

V. FOR MORE INFORMATION CONTACT

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VI. APPROVAL

Task Team Leader(s):	Zael Sanz Uriarte, Adnan Farouq Saad Aldin Ghosheh
Practice Manager (ENR/Social)	Pia Peeters Cleared on 07-Apr-2020 at 15:03:14 EDT
Safeguards Advisor ESSA	Nina Chee (SAESSA) Concurred on 08-Apr-2020 at 12:14:41 EDT