Concept Environmental and Social Review Summary

Concept Stage

(ESRS Concept Stage)

Date Prepared/Updated: 07/08/2020 | Report No: ESRSC01464

BASIC INFORMATION

A. Basic Project Data

Country	Region	Project ID	Parent Project ID (if any)
Pakistan	SOUTH ASIA	P171422	
Project Name	Second Karachi Water and Sewerage Services Improvement Project (KWSSIP-2)		
Practice Area (Lead)	Financing Instrument	Estimated Appraisal Date	Estimated Board Date
Water	Investment Project Financing	1/13/2021	3/25/2021
Borrower(s)	Implementing Agency(ies)		
Islamic Republic of Pakistan	Province of Sindh through the Karachi Water and Sewerage Board (KWSB)		

Proposed Development Objective(s)

The Project Development Objective is to improve access to safe water and sewerage services in Karachi and to increase KWSB's financial and operational performance.

Financing (in USD Million)	Amount
Total Project Cost	600.00

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

No

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

The proposed second project in the series (SOP-2) will invest US$600 million (to be confirmed), of which 40 percent to be financed by IBRD. These investments will scale-up infrastructure rehabilitation and expansion, complemented by capacity building to raise operational performance and improvements to the enabling environment.

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The project activities of SOP-2 will be grouped into three components: Component 1 will finance reform and capacity building measures, thus contributing to improved utility performance. Component 2 will undertake selected infrastructure investments, thereby ameliorating water and sewer services in Karachi and increasing the city's

resilience to water shortages, floods, and saltwater intrusion. Component 3 will fund project management and associated studies. The approach and activities under these components may be summarized as follows:
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a. COMPONENT 1 – Reform of the Karachi Water and Sewerage Board (US$20 million –of which IBRD US$ 8 million): To build capacity and raise operational performance, as well as to prepare and implement planned enabling environment reforms, this component will support an array of measures to reform KWSB, including:

i. Institutional Reform Mechanism: The SOP-2 will provide continued support to the reform program laid out in the Commitment of Cooperation (CoC) between the Bank and the Government of Sindh (GoS), including the implementation of the planned amendments to the KWSB Act. SOP-2 will support the Reform Working Group with consultancies as needed to prepare and support reform activities. The new board of KWSB, with its members from government, professional institutions and civil society, will be trained and provided with peer to peer learning. The board and the Reform Working Group will be supported to analyse the reform challenges and proposed solutions with stakeholders inside and outside of the utility and the Government.

ii. Improving effective monitoring and reporting: Effective monitoring and reporting is instrumental to introduce and sustain institutional reform. It is needed internally to establish and implement an incentive system for staff, it is needed for the board and the provincial government to monitor KWSB's performance and compare it to other utilities, it is needed for customers to enable good customer care systems, and for the larger civil society to monitor KWSB's performance, and, last but not least, it is needed to operate the utility and make decision about the investment program. The proposed SOP-2 will support the design and establishment of a more effective monitoring and reporting system.

iii. Revenue Management, Customer Care and Communication: The proposed SOP-2 will build on KWSSIP-1, which focuses on bulk connections and preparatory activities, by extending metering, billing and collection improvements to domestic connections. This will build on a customer identification survey carried out under SOP-1 and outcomes of an SOP-1 financed tariff study. SOP-2 will support the introduction of volumetric tariffs for domestic customers to accompany a wider roll-out of domestic metering by paying close attention to affordability. SOP-2 will also support the re-introduction of wastewater tariffs and separate cost accounting for water supply and sewerage services. The citizen report card process and communications strategy developed under SOP-1 will be extended and further implemented under SOP-2, considering lessons learnt. This will include a re-branding campaign to change the perception of KWSB in the public so that KWSB will be viewed as a customer-oriented utility and as a good workplace for men and women alike.

iv. Non-revenue Water (NRW) Reduction: The project will expand and deepen the systematic non-revenue water reduction program developed under SOP-1, including the design and establishment of district meter areas, improvements in leak detection and repair, and a program for maintenance of meters. These measures, in combination with network rehabilitation works and commercial revenue enhancement, are expected to significantly reduce commercial and technical losses. Lower technical losses that increase supply to customers will make Karachi's citizens more resilient to extreme, climate-related water events. Reduction in physical losses will also improve energy efficiency and reduce greenhouse gas emissions as detailed in the project's Greenhouse Gas (GHG) analysis.

v. Human Resources and Gender: The project will provide technical assistance and training to KWSB on human resource management, including on gender equality and preventing sexual harassment at the workplace. Human

Resource (HR) systems (software and hardware) will be upgraded and staff training will be provided, including on recruitment of women. A workplace improvement program will be included under this sub-component to provide staff of both genders with a decent workspace environment and facilities.

vi. Capacity Building in Asset Management and Financial Management: The project will provide additional support to critical capacity building measures, including the implementation of an asset management program and improvements to the existing GIS of KWSB. These are important for the sustainable management of KWSB. In particular, the asset management program will contribute to climate change adaptation:

vii. Infrastructure resilience and adaptation to climate change: The 2012 KWSB Climate Adaptation Study had identified at least eleven distinct climate related threats to specific KWSB assets, ranging from lower reservoir levels to exposure of pumping stations to storm surges. An asset risk management program will build on this adaptation study by assigning, prioritizing and initiating asset-specific adaptation measures such as the provision of submersible pumps and back-up generators for assets exposed to high storm surge risks. The project will provide technical assistance and small investments for infrastructure resilience and climate change adaptation.

viii. Preparation and implementation of Water Safety Plans: The project will provide technical assistance and training to prepare Water Safety Plans, as well as small investments for implementing them. Providing safe water is one of the major challenges KWSB is facing and most of the water KWSB is currently supplying to customers does not meet health standards.

ix. Water Wastage Reduction Program and Water Audits: While water is scarce in Karachi many customers are still wasting water. This program will start with offering low cost water audits to large customers so they receive recommendations on how to reduce their water consumption. In addition, the water wastage reduction program will educate all customers how to reduce unnecessary water consumption and work with the relevant authorities to promote appliances such as low flow shower heads and taps in domestic homes and institutions such as mosques.

x. PPP Studies and Transaction Advice: The project will provide funding for PPP studies and transaction advise in the field of private sector participation for wastewater reuse and non-revenue water reduction which were identified by a PPIAF Study as the most promising areas for attracting private investments.

b. COMPONENT 2 – Securing Sustainable Water Supply & Sewerage Services (US$560 million of which IBRD US$ 224 million): The proposed infrastructure investment plan for KWSSIP-2 addresses three interlinked structural problems in Karachi's water and sanitation system – the overall supply shortfall; the low water quality; and the lack of sewage treatment capacity:

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i. Options for additional Bulk Water Supply Investments: Six additional potential bulk water investment options (see Table 1 below for details) have been pre-identified. KWSB currently has a quota to withdraw 650 MGD from the Indus but is effectively only using 515 MDG of this allocation. The remaining quota (additional 135 MGD) could therefore be made available through the proposed investments. A first step in investigating the bulk water supply options is to confirm the actual amount of water currently withdrawn from the Keenjhar Lake and conveyed to Guijo Headworks. In addition to the options to withdraw more water from the Indus, there is also an option to increase the water supply from the Hub River. The final set of additional bulk water investments will be selected after completion

of feasibility studies to be financed by AIIB and/or the Government of Sindh. The feasibility studies shall also assess if the current water supply network has enough capacity to distribute the additional bulk water ;

ii. Malir basin wastewater interceptors and treatment plant (S-3 Phase 2; $150m): This sub-component would complement the ongoing S-3 Phase 1 investments carried out by the Government of Sindh and significantly improve the ability of KWSB to collect and treat wastewater in the Malir basin of Karachi. The project design is well advanced and alternative financing sources are presently highly uncertain. The Bank recommends assessing the possibility of a PPP solution for tertiary treatment and reuse of treated water from the Malir wastewater treatment plant in the nearby industry. This could release an additional significant amount of drinking water for other consumers.

iii. Improve Water Supply and Sewerage in additional Low Income Communities (katchi abadis or low income settlements; $20m): Building on pilots in three katchi abadis during SOP-1, the proposed SOP-2 will quadruple support to informal settlements, expanding infrastructure investments as well as accompanying social and communications measures. The project will improve water supply and sanitation in katchi abadis, including through the installation or upgrading of water automated teller machines, metered house connections and provision of bulk water supply, drawing on lessons learnt during the SOP-1 pilots. This program will include resources to support KWSB cooperation with local NGOs and community-based entrepreneurs, particularly women's organizations. These measures will improve the climate resilience of katchi adabi residents, who are particularly vulnerable to heat waves and extreme stormwater events, which increase demand for water, and/or flooding, which the latter has a larger impact if floodwater is contaminated by sewage.

iv. Priority Sewer Network Rehabilitation & Extension and Rehabilitation of Wastewater Pumping Stations ($20m): The project will scale up investments in priority sewerage rehabilitation to restore network integrity in critical areas, and to reduce sewage leakage and flooding. A a well-functioning sewerage system reduces the impact of floods—not only by reducing the contamination of water bodies, but also by lowering the probability of infrastructure, existing water sources, and local communities becoming overwhelmed by a flood carrying untreated wastewater.

v. Priority Water Network Rehabilitation & Extension incl. Meters & DMAs to Reduce NRW and additional chlorination facilities to improve the water quality ($60m): Scaling up interventions under SOP-1, this proposed sub-component will reinforce the non-revenue water and revenue management reforms of Component 1, priority areas of the network will be rehabilitated, focusing on reducing major leaks, installing district and customer meters, and developing chlorination facilities. Leakage reduction will reduce the energy footprint of water supplied to consumers. Modern meters with data loggers for large bulk customers will be installed, and KWSB equipped with KWSB meter-reading devices. Reducing NRW losses and introducing consumption metering will increase the supply of water and promote the conservation of water, thereby making Karachi's residents more resilient to water shortages.

vi. Reducing Energy Consumption ($25m): This subcomponent will implement the recommendations of the Energy Audit carried out under SOP-1. It is likely to involve major equipment modernization, particularly in KWSB's main pumping stations. This is expected to realize significant energy savings and thus cost savings for KWSB. The design can only start during early implementation of SOP-2 after the energy audits are completed.

vii. K4 Augmentation: This sub-component will involve the connection of the government financed K4 Treatment plants to the water network, thus leveraging existing counterpart investments to significantly improve water supply

by up to 260MGD. The final design of these works will have to be deferred until the revised routing of the KIV Phase 1 works is known.

viii. Rehabilitation of Existing and Construction of New Filtration Plants: This proposed sub-component responds to the challenge of water quality by including an allocation for the rehabilitation and construction of water filtration plants, so that KWSB can treat all their existing raw water. Currently, KWSB has an estimated treatment capacity of only 440 MGD for an estimated 515 MGD of daily water supply, resulting in significant amounts of untreated raw water supplied into its network. Changing this would alleviate the ongoing public health threat.

c. COMPONENT 3 – Project Management and Studies (US$20 million– of which IBRD US$ 8 million): This component will support the costs of managing the project and preparing aspects of the proposed subsequent projects, considering the expected impacts of climate change in the studies to be conducted. This will include direct project management costs of KWSB, feasibility studies, tender- and safeguard-documents and supervision costs for this and future projects. In addition, this component will support the institutional strengthening of KWSB including strengthening the social and environmental management capacity of KWSB.

D. Environmental and Social Overview

D.1. Detailed project location(s) and salient physical characteristics relevant to the E&S assessment [geographic, environmental, social]

Similar to KWSSIP-1/SOP1, the objective of KWSSIP-2/SOP2 is to improve access to safe water and sewerage services in Karachi and to increase KWSB or Implementing Agency's financial and operational performance. The Project location is KWSB's service area (Karachi and its surrounding areas). Karachi is the largest, most diverse and pluralistic city of Pakistan, with a large variety of ethnic, religious and social groups. Karachi has been named among the 10 least livable cities in the world by the Economic Intelligence Unit based on security, access to and quality of services and poor infrastructure. Air pollution, lack of proper waste management infrastructure and degradation of water bodies are the major environmental issues. In recent past years, the city is severely affected by climate change including heat waves, sea level rise, droughts and floods. Since the early nineties, Karachi has suffered due to serious law and order issues and experienced a high incidence of crime and political, ethnic, and sectarian violence. In recent years, however, the level of violence and crime has reduced.

Project investments are in urban and semi urban areas of Karachi and surrounding areas, and the geographical area of the Project is wide spread due to the nature and extent of interventions proposed for the improvement of water supply schemes and wastewater treatment facilities. Some sub-project locations, such as for S-3 Phase 2, are known while the exact locations such as for improving and rehabilitating the water supply and sewerage systems, including for low income communities, and K-IV augmentation are not identified at this stage. However, most project activities will be within or in the vicinity of Karachi. The terrain of Karachi is mostly flat or rolling plains. A number of small natural or man-made drainage channels pass through various parts of the city, with general drainage running from western and northern areas to the south into the seasonal Lyari and Malir rivers – which carry the city's sewage. The southern limit of the city is the Arabian Sea.

The alignment of the 135 MGD bulk water supply system has yet not been finalized and will be selected after completion of feasibility studies. However, the current options under discussion indicates the potential inclusion of

some ecologically important areas like Haleji Lake and Keenhar lake. Haleji lake is a perennial fresh water lake which is also internationally declared Ramsar site, a wildlife sanctuary, and a breeding place for Siberian migratory birds. However, due to lack of flow of fresh water into the lake and various anthropogenic activities the lake is already stressed to lose it's ecosystem. The other lake which may be affected is Keenjhar lake which is the second largest freshwater lake of Pakistan and is also a Ramsar site. The water storage capacity of the lake is artificially increased through embankments. The lake is already a major source of drinking water supply to most of the areas of Karachi, however the ecology of the lake is degraded due to effluent discharge from the Kotri-based industries and contamination caused by tourist activities. Project therefore, needs a detailed impact assessment covering these two important ecological zones.

Another proposed intervention is collection and treatment of wastewater in the Malir basin. The natural drainage network of Karachi consists of two major river systems - Malir River on the east and Lyari River which passes through the centre draining most of the city's storm water. These rivers and their tributaries have been affected severely due to rapid urbanization and bad urban management. In the rainy season, the Malir river basin experiences localized flash floods and millions of gallons of water go to the Arabian sea. The water of the Malir river basin receives domestic and industrial waste water and research shows that the Malir river is highly contaminated and exceeds the limit of Environmental Quality Standards.

D. 2. Borrower's Institutional Capacity

At present, the capacity of IA to manage E&S issues in accordance with the Bank's safeguards policies (applicable to SOP-1) and ESF (applicable to SOP-2) is low. However, it is anticipated that IA will develop the capacity for handling E&S issues during SOP-1 which will also support SOP-2. The Project Implementation Unit (PIU) that has been established for SOP 1 will continue to work for SOP-2. IA is in the process of recruiting individual consultants to the PIU to strengthen subproject preparation and implementation. The process for hiring qualified and experienced Environmental, Resettlement, Social Development, and Communications specialists in the PIU is underway and will be completed by mid 2020, certainly before appraisal of SOP-2. A senior officer of IA has already been given the responsibility of Gender Specialist and has started working on developing a gender action plan, including measures for recruitment of more female staff (particularly in higher cadres) and training to IA on gender equality and preventing sexual harassment at the workplace. The project ESIA/ESMPs will also reflect these aspects. Under SOP-1, IA has developed Environmental Management and Social Management Frameworks for the management of E&S issues. The SMF includes a Resettlement Policy Framework (RPF) and management frameworks for gender, vulnerability, stakeholder engagement and labor impacts during construction (including gender-based violence (GBV) and sexual exploitation and abuse (SEA)) and grievance redress mechanism (GRM). The SMF will inform the preparation and implementation of site-specific documents such as Environmental and Social Impact Assessments (ESIAs) / Environmental and Social Management Plans (ESMPs) and Resettlement Plans (RPs) / Abbreviated Resettlement Plans (ARP) for subprojects.

A firm will be recruited to provide specialized contract management support to PIU. The PIU will report to IA management represented by the Managing Director. At present there is only one woman in the PIU; however, over the life of SOP-1 women's employment in the PIU (including associated consultants) is expected to reach 50 percent. The PIU is expected to coordinate activities with related Bank financed Karachi projects, particularly the Karachi Neighborhood Improvement Project (KNIP) and the Competitive and Livable City of Karachi (CLICK) projects which target complementary measures to improve the quality of life in Karachi. It may also draw on a Shared Services Unit, to be established in the Sindh Planning and Development Department (P&DD), to tap into additional expertise for E&S management. A Project Steering Committee was established under SOP-1 to provide oversight and high-level coordination which will continue for SOP-2. The Steering Committee includes high level representatives of all agencies

involved in the Project The Steering Committee shall provide planning and strategic guidance and facilitate multi-stakeholder cooperation for the development and implementation of a vision, policy reforms and investment program towards the improvement of the Karachi's sanitation and sewerage services.
The Bank's E&S teams have engaged extensively with IA staff, who will potentially be assigned to the PIU, throughout the preparation of SOP-1 to support the preparation of E&S instruments and provide orientation to the Bank's E&S management systems. The Bank team will continue to provide requisite support to build IA's capacity for management of E&S issues and trainings on the Bank's safeguards policies and ESF regularly. The first training session is planned at the SOP-1 project launch workshop. SOP-1 project launch workshop might be carried out virtually because of COVID-19 situation. A detailed E&S training (e.g. environmental management, OHS, land acquisition, involuntary resettlement & livelihood, stakeholder engagement, labor management, grievance redress) will be provided for all Karachi projects once the E&S specialists in PIU are onboard.

II. SCREENING OF POTENTIAL ENVIRONMENTAL AND SOCIAL (ES) RISKS AND IMPACTS

A. Environmental and Social Risk Classification (ESRC) — High

Environmental Risk Rating — Substantial

The Component 2 of the Project includes series of large-scale investments - the expansion and construction of new water supply schemes (route alignment yet to be finalized and various options under discussion), Malir basin river wastewater treatment plant, rehabilitation of existing wastewater pumping stations and construction and rehabilitation of new filtration plants. The investment on construction of either new or rehabilitation of existing bulk water supply scheme would happen in a large geographical area either around the existing infrastructure or on a new alignment. The construction activities of bulk supply schemes and wastewater treatment facilities can have potential environmental impacts on air quality, noise generation, soil erosion, loss of trees and vegetation, soil and ground water contamination, generation of construction solid waste and wastewater and ecological impacts on major water sources. Other than environmental impacts, there are significant occupational and community health and safety risks including road safety, physical and electrical hazard, dust and noise generation associated with the construction activities of the Project because of the high-density nature of the project area. The project also needs to consider the vulnerability of flash floods while finalizing the route alignment of bulk water supply schemes and necessary technical solutions should be considered in the design of the schemes.

During operations of the Project, interventions to improve drinking water supply in Karachi are expected to lead to additional bulk water withdrawals from Keenjhar Lake. However, this constitutes only 0.027 percent of the lowest ever observed minimum flow of the Indus River at the point where it supplies Keenjhar Lake. Even if comparing it with the established environmental minimum flow at that point of 3 MAF which is below the lowest ever observed minimum flow of 5 MAF, it would constitute only 0.044 percent of the established environmental minimum flow. Moreover, minimum water levels of the Keenjhar Lake are governed by an existing water allocation treaty, the Indus Water Accord of 1990. Thus, even in the unlikely case of project interventions contributing to water shortfalls in Keenjhar Lake, the Government of Sindh would be legally obliged to take measures to maintain minimum required water levels. Given above, potential ecological impacts on Keenjar Lake and mangrove forests downstream Indus River basin is considered limited. The other environmental risk and impact during operation is the potential soil and groundwater contamination due to any leakages of the sewerage pipes or inclusion of water from sewerage pipes

into the water distribution system The long-term impact on land use, urbanization and vulnerability of natural disasters in the city needs to be considered at earlier stage of the project design for smooth operations of the project.

Component 3 of the Project is project management and studies of the subsequent project including safeguards documents and can also have indirect long-term impacts associated with the planning and management of the Project.

While there is limitations in the existing capacity of the implementing agency to manage environmental risks, such limitation is expected to be addressed under the already effective first Karachi Water and Sewerage Services Improvement Project (P164704), notably through the recruitment of dedicated Environmental-, Social- and Resettlement Specialists, as well as provisioning extensive training programs on ESF.

Considering the above analysis of potential environmental risks and impact, the environmental risk at concept stage is classified as “Substantial”.

Social Risk Rating High

At concept stage the social risk is classified as ‘high’. The project does not anticipate private land acquisition as requisite land/RoW is already owned by IA. However, there is a risk of resettlement and livelihood impacts on squatters and encroachers who are sitting on or have extended on, respectively, stretches of the public land/RoW. It is anticipated that, primarily in congested locations, there might be significant impacts involving resettlement of enterprises (e.g. small shops etc.) and in some instances dwellings that are situated in the RoW; and, removal of parts of structures that have extended onto the RoW. The exact nature and scale of such impacts will be confirmed during preparation. Similarly, given that network rehabilitation works will be executed in a dense and congested urban environment, civil works are likely to have temporary negative livelihood impacts during construction on businesses; transporters; vendors and hawkers etc. The management of impacts during implementation will be complex and the risk to implementation at concept stage is anticipated as significant to high. Requisite measure to address and manage these risks will be included in the RP.

Under Component 2, water treatment plants and distribution network will be connected to the under construction, government financed K IV phase 1 system. K-IV meets all 3 criteria for associated facility given in ESS1; hence, an audit will need to be done to identify and implement measures to fill the gaps between government procedure and the Bank’s E&S requirements. The gap filling measures pertaining to land acquisition, resettlement and livelihood impacts, however, may be complicated due to legacy issues such as difficulties in identifying and locating potentially affected squatters, ongoing litigation etc.

SOP-2 is also affected by risks associated with the ongoing anti-encroachment drive (AED) in Karachi which was initiated on the orders of the Supreme Court of Pakistan and has impacted thousands of businesses and vendors. The conduct of the AED is not in line with the Bank’s resettlement policy as there is no compensation and support during the transition period for displaced squatters/encroachers. Furthermore, the government’s AED procedure does not include a detailed inventory of losses and people affected. Under SOP-1, to address the AED impact a multi-faceted Risk Reducing Procedure (RRP) was developed and it was agreed that, amongst other requirements, any subproject investment located in a site affected by the AED will be excluded from the project. Under SOP-2, a different RRP may be proposed which enables work in AED impacted areas, whilst meeting ESF requirements. A revised RRP is required for SOP-2 because IA needs to rehabilitate critical infrastructure in AED impacted areas; and, hydraulically integrated

networks need to be rehabilitated. Working in AED impacted areas, however, is risky due a comparatively reduced level of accuracy in identifying affected people which, in turn, may lead to legacy issues.

While locally available labor will be preferred, influx of labor may be anticipated and labor camps may need to be established. As assessment will be made during preparation. Finally, most of the construction activity will occur in congested urban areas where the risk of occurrence of GBV and SEA is reduced. However, some construction activity (e.g. bulk water supply system) will also take place in rural/remote areas where there is a comparatively raised risk of GBV and poor support systems for survivors. Hence, on this basis at the concept stage the risk of GBV/SEA is assessed as moderate. The GBV risk assessment tool will be run during preparation to make a final assessment by appraisal.

Additional risks include potential exclusion of and lack of meaningful engagement with vulnerable groups e.g. women, minorities, residents of low income settlements etc. Low capacity of IA to manage social issues also raises the risk for 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:

ESS1 is relevant to the Project. The Project activities under Component 2 involves large scale water supply network construction and rehabilitation that can envisage potential large scale environmental and social impacts such as: land use change; loss of vegetation; generation of noise and dust; solid waste generation; temporary blockage of access and diversion of local traffic due to mobilization of heavy machinery and localized excavation works within public rights-of-way; potential temporary drainage impacts related to excavation and temporary stockpiling of excavated material; works to resurface pavement following excavation and installation of valves; temporary localized cutting of domestic water supply services while works are taking place along water supply lines or at the plants; etc. The project would have potential impacts on water sources and may disturb the ecological habitats and biodiversity of the water bodies particularly if the civil works are planned in/around protected Ramsar sites (Helji Lake and Keenjhar Lake).

Replacement of old sewer networks which entails interruptions in receiving effluent from subscribers may damage other communication infrastructure (telephone, electricity) associated with Occupational Health and Safety (OHS) and community health risks. It is required to take the necessary measures in the design of reconstruction and OHS/community health measures and mandatory coordination with the relevant agencies and enterprises. Similarly, the construction activities associated with Malir river basin wastewater treatment facility, construction and rehabilitation of pumping stations and filtration plants can have potential environmental and social impacts during construction phase related to discharge of construction effluents, dust and noise generation, vegetation clearance, generation of residual cut and fill materials if not mitigated properly. All the construction activities have challenges to deal with potential occupational health and safety risks, health and safety risks of nearby communities, traffic safety and emergency response & preparedness, especially in the areas where population density is high.

During operations of the Project, the Project may have significant impacts on soil and groundwater contamination due to potential leakages of wastewater from sewerage pipes. Because Karachi has intermittent water supply, the water distribution pipes are not pressurized all the time and when not pressurized, wastewater in the soil

surrounding the distribution pipes can enter these pipes. The extraction of water from the sources can also impact the ecosystems and biodiversity of the water bodies that needs to be considered at project design phase. However, overall, the project will have positive environmental benefits in improving people's access to water, reducing waterborne diseases in communities, & reducing environmental pollution as the result of improved water and sanitation services.

ESS1 is also relevant and applicable to Component 3 of the Project which includes feasibility studies and safeguards documents for the subsequent project, since the result of these feasibility studies and safeguards instrument have implication on the design, construction and operation and environmental impacts associated with the subsequent project.

Under ESS1, social issues are related to exclusion of vulnerable communities from project benefits and lack of meaningful engagement and consultation with communities, particularly vulnerable groups such as women, the elderly, minorities, the poor, people living in low-income settlements etc. In addition, there may be resistance to institutional reform measures and revision in HR policies proposed under Component 1 by IA personnel and labor welfare unions. These social impacts will be assessed in ESIAs and mitigation measures will be proposed in ESMPs and built into project design. The project is also support reforms which focus on filling the gender gaps in the IA workforce, and a gender analysis will be conducted to prepare a gender action plan which will address these issues. The ESIAs/ESMPs will also include an assessment of potential GBV risk and appropriate preventive measures will be developed

Since the project includes multiple water supply and sewage services infrastructure with different scale of impacts, the different site-specific E&S management instruments will be prepared for each sub-project, proportionate to the level of potential risks and impacts, i.e. ESMP or ESIA. These E&S management instrument will apply the mitigation hierarchy through the design of construction procedures and management of construction sites and will follow WBG EHS General Guidelines and EHS Guidelines for Water and Sanitation. ESIA will be prepared by independent consultants through consultation with all the stakeholders and provide the detailed assessment of the baseline environmental and social conditions of the area, identify the impacts associated with the project interventions and will devise a comprehensive ESMP, which would also include treatment of sludge from wastewater treatment, management of hazardous materials which will be used for or produced during water/wastewater treatment, water conservation measures, Biodiversity Action Plan, Traffic Management Plan, occupational health and safety requirements, and, Emergency Response Preparedness plan. An EMF and SMF have been prepared under SOP-1 and can be used for the same activities being financed under SOP-2 (e.g. network rehabilitation). In case there are some SOP-2 activities for which locations cannot be finalized during preparation, the SOP-1 EMF and SMF will be updated in accordance with the ESF requirements and disclosed. The E&S frameworks will also include measures to enhance the IA's capacity for management of E&S issues. If the bulk water system supported by the project will include the water supply from Haleji Lake, ESIA must include the detailed impact assessment of ecosystems and biodiversity and hydrology. As K-IV is considered an Associated Facility an Environmental and Social Audit will be conducted for K-IV. In addition, ToRs for feasibility studies and E&S documents to be supported under component 3 will be prepared during project preparation.

IA will prepare an Environment and Social Commitment Plan (ESCP) under ESS1 which will be made part of the legal agreement between the Bank and the Borrower. The ESMF, ESIAs/ESMPs, E&S Audit for K-IV, SEP, LMP, ToRs and ESCP shall be prepared, finalized, cleared by the Bank and disclosed by the Client prior to project appraisal.

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

None. The borrower has not proposed adoption of the borrower/government's E&S Framework to address and manage environmental risks and impacts of the project. The project will apply the Bank's ESF and its Environmental and Social Standards (ESSs) along with the Government's E&S requirements.

ESS10 Stakeholder Engagement and Information Disclosure

The project involves a number of diverse stakeholders. Since the geographic scope of the project is the entire urban area of the city and water conveyance routes from water sources, all citizen groups living across the city and along water conveyance alignments will be directly or indirectly impacted and are considered key stakeholders of the project. Furthermore, there are a number of active NGOs and civil society organisations and media groups (print, electronic, social) in Karachi which will be keenly interested in the project, especially the implementation of the subprojects. Stakeholders also include IA personnel and labor unions, political parties active in Karachi, local governments, elected local government councils and representatives, elected provincial representatives and various government agencies such as GoS departments, cantonment boards, SSWMB etc.

Under ESS10, IA is required to prepare a detailed Stakeholder Engagement Plan (SEP) to identify the key stakeholders and ensure that all stakeholders are engaged throughout the project. A stakeholder engagement framework is available for SOP-1 and the SEP will build on this framework. A project GRM is currently being established for SOP-1 and will also be applicable for SOP-2 and available prior to implementation of SOP 2. The SEP will include details of the GRM and commitment to maintain the GRM throughout the project will be reflected in the ESCP. Additional stakeholders, particularly vulnerable and or disadvantaged groups such as women, people living in low-income settlements, minorities, the poor etc. will also be identified and their engagement during project implementation will be described under SEP.

The draft SEP will be consulted on, reviewed by the Bank, and disclosed both by IA and the Bank prior to project appraisal. The SEP will be a 'living' document and hence, may be updated periodically during project implementation. The SEP will also outline the mechanisms for information sharing and disclosure and for ongoing consultation, including with women and vulnerable/marginalized groups such as the poor, residents of katchi abadis (low-income settlements), minorities, elderly etc. The ESCP will include the condition for updating the SEP, as required, during project implementation.

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

The project will involve direct workers (IA employees transferred to the PIU, specialists engaged from the market); contracted workers engaged in construction work and consultancy services for the project (e.g. for preparation of

E&S documents); and, primary supply workers (e.g. for equipment required for the project). An assessment of the number of workers will be made during project preparation.

Pakistan has comprehensive labor laws covering the terms and conditions of employment, termination of contracts, working time and rest time (working hours, paid leave, maternity leave and maternity protection, other leave entitlements), prevent child and forced labor, minimum age and protection of young workers, equality, pay issues, workers' representation in the enterprise, trade union and employers' association regulation and other aspects. In addition, Pakistan has also ratified several ILO labor conventions. However, management of labor issues with regards to GBV/SEA, GRM and OHS will need to be improved along with enhancement of implementation and supervision capacity mainly through supervision consultants. This will be assessed in more detail during project preparation and incorporated in the LMP.

In keeping with the requirements of ESS2, Labor Management Procedures (LMP) will be prepared under SOP-2. The LMP will include an assessment of potential labor related risks; an overview of labor regulations, policies and procedures; an assessment of and a plan to prevent GBV/SEA and harassment; contract terms and conditions; working age regulations; mechanism for redressal of labor related grievances; and other requirements of ESS2. The GBV risk mitigation action plan will be prepared prior to implementation of project activities. The LMP will build on the labor management framework included in the SMF prepared for SOP-1. Most importantly, consistent with the requirements of ESS2, a GRM for project related labor issues will also be outlined in the LMP.

The LMP will also review the measures already in place in KWSB for OHS and put in place systems to enhance existing mechanisms and maintain a safe working environment. The system will include (i) identification of potential hazards (ii) provisions and enforcement of preventive and protective measures (iii) training of workers and maintenance of training records (iv) documentation and reporting of accidents and incidents (v) remedial and corrective actions (vi) emergency prevention and preparedness and response arrangements to emergency situations; and (vii) remedies for adverse impacts such as occupational injuries, deaths, disability and disease. Periodic review of OHS policies and procedures will be made mandatory.

In addition to the project workers identified above, a number of IA employees may also work in connection (full-time or part-time) with the project without being formally transferred to the project. ESS2 will not apply to such workers and they will remain subject to the terms and conditions of their employment with IA. However, the provisions of ESS2 related to protection in the work force (i.e. regarding child labor, minimum age and forced labor) and OHS will apply to such IA employees.

ESS3 Resource Efficiency and Pollution Prevention and Management

ESS3 is relevant as the efficient use of water and energy, and the reduction and otherwise management of pollution, as required by ESS3, are central to achieving the objectives of the proposed project, and according to ESS3 this project will be deemed as "significant user of water". The construction activities under Component 2 will involve extraction of water from various water sources, use of construction material, disposal of construction waste, emission of dust and noise and run off from construction sites. The project and its associated facility will extract water from potential water sources including Keenjhar Lake and Haleji Lake and from various other pumping locations. The Project is planning to source 135 MGD from these potential investments. The exact location of the

sources is not finalized at this stage. However, the ESIA will include the assessment of water balance study to secure the water demand of other water users and requirements for sustaining ecosystem services in the area and to propose measures to minimize the loss of water in the water supply network and sewerage system, and other water conservation measures. Potential pollution would come from disposal of construction wastes, spoils, domestic waste (refuse, wastewater), and hazardous wastes (paints, solvents, used fuel, used chemicals), as well as use of hazardous materials such as chlorine and discharge of sludge and effluents from the water and sewerage treatment facility during the operation phase. The ESIA will assess the potential impacts of wastes handling and disposal and inform the ESMP of the requirements for appropriate waste disposal practices for mitigating and preventing pollution from the mentioned sources. Waste management and pollution mitigation measures will be further addressed in the waste management procedures under the Contractor ESMP (CESMP). Furthermore, pollution prevention will be sought through the project intervention of building the wastewater treatment plant, which will be designed according to WB EHS Guidelines.

ESS4 Community Health and Safety

ESS4 is relevant as the constructions and operations of the project activities under component 2 involves significant community health and safety hazards. These may include road and traffic safety during construction works, potential exposure to dust, noise/vibration, hazardous and non hazardous waste and other health and safety risks for the nearby communities. In particular, the management of construction sites require protocols for barricades and signaling of construction areas to ensure pedestrian safety. In addition, to avoid and minimize potential impacts from construction activities there is the need for adequate site management practices and effective consultation with communities. Since the project involves the provision of water supply and sewerage treatment services, it is critical to ensure safe drinking water supply and proper sewerage treatment to the users and reducing potential leakage in the water supply network as well as avoidance of any seepage of wastewater from sewerage pipes into water distribution pipes. Therefore the Client is required to consider all these potential health and safety risks associated with the Project in the ESIA and include necessary mitigation plans in the ESMPs. As a part of ESMP, the Client is required to prepare a traffic management plan, community health and safety measures and emergency response preparedness plan to mitigate all the health and safety risks of the project during construction and operations of the Project. In view of the assessed potential risk of GBV/SEA, a GBV risk mitigation action plan will also be prepared prior to implementation of project activities.

ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

ESS5 is relevant. At the concept stage, the project does not anticipate large-scale private land acquisition as proposed infrastructure will be constructed on land/RoW already owned by IA. However, some resettlement and/or livelihood impacts on squatters and/or encroachers who have either settled in or extended on the RoW is anticipated. At concept stage, it is expected that, primarily in congested locations, there might be impacts involving resettlement of enterprises (e.g. small shops, kiosks etc.) and in some instances dwellings that are situated in the RoW; and, removal of parts of structures that have extended onto the RoW. The exact nature and scale of the involuntary resettlement and livelihood impacts will be determined during project preparation, once the design and proposed alignments have been finalised. The management of impacts during implementation will be complex and the risk to implementation at concept stage is anticipated as significant to high. Requisite measure to address and manage these risks will be included in the RP.

It has been established that K-IV, currently under construction, is an associated facility (as per ESS1 criteria). Therefore, an audit will be conducted to identify the gaps between the government's standards and procedures and the requirements of ESS5, including among other factors, for land acquisition, resettlement, and livelihood impacts; entitlements for vulnerable groups/categories; and, stakeholder consultation and grievance redress etc. The audit will also provide requisite gap filling measures which may include provision of compensation, including to non-title holders, in accordance with the standards of ESS5. A retro-RP (to provide compensation in retrospect) will need to be prepared for this purpose. Implementation of the gap filling measures identified in the audit will be included in the ESCP.

As discussed earlier, a major AED (initiated on the orders of the Supreme Court) is underway across Karachi and is not consistent with the Bank's policy on involuntary resettlement; therefore, remedial measures are required to address AED associated impacts. Furthermore, the government procedure for removing encroachment does not include making a detailed inventory of losses and people affected. The RRP for SOP-1 entails, amongst other requirements, that subproject investment located in a site affected by the AED will be explicitly excluded; and, in the event that AED activities take place on a site after the site has been selected for a subproject, all provisions of the Bank's policy on involuntary resettlement will apply, including, amongst other requirements, compensation and/or rehabilitation of affected people including squatters, vendors, hawkers etc. in accordance with the entitlements prescribed in the SOP-1 RPF. The SOP-1 RRP also requires that a monitoring system and GIS platform be established in the office of the Commissioner Karachi (delegated by the government to coordinate the AED) to maintain a record of: the exact locations of the AED; details of the persons affected; and, an inventory of losses. Discussions with the Commissioner's office for finalizing the design of the said system are already underway and it is planned that the monitoring/mapping system will be in place mid 2020, in time for selecting sub-project sites. The SOP-1 GRM will also be set in place by mid 2020.

In contrast to the approach adopted for SOP-1, a different RRP may be proposed for SOP-2 which does not restrict the project to non-AED areas. A potential mechanism which enables work in AED impacted areas, whilst ensuring that the standards and requirements of ESS5 are met – i.e. provision of retroactive compensation for displacement and livelihood impacts (including for squatters), stakeholder consultation, transparency, access to a grievance redress mechanism etc. - will be explored during project preparation. If required, retro-RPs will need to be prepared to enable work in AED impacted areas. The conditions for working in AED impacted areas will be included in the ESCP.

Discussion is also underway with the provincial government of Sindh to explore possibilities for the government to improve its own systems/procedures for resettlement and rehabilitation. This would ensure that informal settlers who may need to be displaced or have been displaced from non-Bank financed areas also receive the same treatment as affected persons in Bank-financed areas and mitigate the risk of 'dual standards'. Finally, the Bank is also currently undertaking a scoping exercise to understand Karachi's street economy issues in order to help the government devise an inclusive policy for administration of street vendors and hawkers, including licensing and provision of space. Such a policy would further mitigate AED associated risks.

An RPF has been prepared under SOP-1 and can also guide the preparation of RPs required for SOP-2. The SOP-1 RPF will be updated to cover the additional provisions available under ESS5 (compared to OP4.12) related to forced eviction, treatment of rich encroachers, types of land acquisition covered, special measures for the needs and

concerns of women etc. and disclosed. RPs will be prepared, consulted on, reviewed and cleared by the Bank, and disclosed before project appraisal for subprojects whose location/alignment and design is known (e.g. S-3, 135 MGD bulk water conveyance system). The RPF will guide the preparation of RPs for subprojects whose location will be identified during project implementation.

ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources

ESS6 is relevant as the Project activities are anticipated to have potential impacts on the natural habitats due to loss of vegetation along the route of the bulk supply water schemes and due to potential change in water flow and the land use patterns. The water sources of water supply systems that the project is going to support might include fresh water lakes, Haleji Lake and Keenjhar Lake, which are declared as Ramsar sites, and the alignment of the bulk water supply system could be within or in the close vicinity of these lakes. For Haleji Lake which has been serving as a reservoir to supply water to Karachi, an ecological impact assessment will be conducted, and a Biodiversity Action Plan would be prepared in accordance with mitigation hierarchy, as part of ESIA of the bulk water supply system, commensurate with the potential risks and impacts, if Haleji Lake will be selected as a water source.

K-IV which is considered as the Associated Facility supplies water from Keenjhar Lake. Therefore, Environmental and Social Audit will include the due diligence of the adequacy of ecological impact analysis of Keenjhar Lake including water level, and if necessary, the gap filling measures will be proposed for conservation of Keenjhar Lake in accordance with the requirement of ESS4. As mentioned earlier, during the initial assessment, additional bulk water withdrawals from Keenjhar Lake is very limited, i.e. only 0.044 percent of the established environmental minimum flow from the point where water is supplied to Keenjhar Lake, and the foot print of the civil works and direct impacts on the lakes should be limited as the main infrastructure to be built will be a water intake facility. Therefore, the potential ecological impacts on Keenjar lake and mangrove forests located in Indus Delta due to additional water withdrawal from Indus River is considered limited. However, further detailed impact assessment will be carried out in ESIA and E&S Audit during project preparation. Other ecological impacts associated with the project will be also assessed/reviewed in ESIA and E&S Audit.

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

There are no IPs in the project area and therefore ESS7 is not relevant.

ESS8 Cultural Heritage

ESS8 is not relevant at this stage as there is no known cultural heritage present in the project locations that have already been identified. However, the impacts on cultural heritage shall be identified once the location and route of the proposed interventions are finalized. ESIA to be conducted under ESS1 will include the identification of cultural heritage in the project area, an assessment of any potential risks to cultural heritage because of the project, and the preparation of a cultural heritage management plan, if required.

ESS9 Financial Intermediaries

ESS9 is not relevant as the Project does not include inclusion of any financial intermediaries.

B.3 Other Relevant Project Risks

The project risk is classified as high due to limited capacity to deal with E&S risks and impacts, exogenous impacts such as the ongoing AED, and contextual issues related to institutional arrangements and governance. At the concept stage, the key risks identified include:
1. Political will to ensure implementation of requisite institutional reform in IA. This is critical for the management of E&S issues and the success and sustainability of the project.
2. Lack of autonomy, fractured mandate and political interference affecting the overall performance of IA
3. Weak institutional capacity to address and manage E&S issues
4. Lack of trust between IA and the citizens of Karachi. This could determine the success and sustainability of collaboration with communities and the rehabilitation and system improvement work proposed in katchi abadis under component 2.
5. Impacts of the ongoing AED
6. Risks related to the E&S audit for K-IV (already under construction) which is an associated facility. The retroactive RP, including gap filling measures pertaining to land acquisition, resettlement and livelihood impacts, may be complicated to prepare and implement due to legacy issues such as difficulties in identifying (accurately) and locating potentially affected squatters, ongoing litigation etc.

C. Legal Operational Policies that Apply

OP 7.50 Projects on International Waterways Yes

The Policy is applicable to this project because the activities might involve the use of water from the Hub or Indus River, the latter which is shared between the Islamic Republic of Pakistan, the Republic of India and the People's Republic of China. Significant tributaries to the Indus are also located in the Islamic Republic of Afghanistan. The Project team would seek RVP approval for the exception to the notification requirement under Paragraph 7(a) of the Policy, since the project will not adversely affect the quality or quantity of water flows to the other riparians, because Pakistan is the lowest downstream riparian of the Indus River. The issue will be discussed with LEGEN to address the policy requirement.

OP 7.60 Projects in Disputed Areas No

The Project is located in Karachi, which does not come under any disputed area, therefore OP 7.60 is not relevant to the Project.

III. WORLD BANK ENVIRONMENTAL AND SOCIAL DUE DILIGENCE

A. Is a common approach being considered? No

Financing Partners

Asian Infrastructure Investment Bank (AIIB), Government of Sindh
There is a potential project preparation fund to be provided from AIIB for the preparation of E&S instruments for SOP2. The ESF will be applied for the preparation of E&S instruments.

B. Proposed Measures, Actions and Timing (Borrower's commitments)

Actions to be completed prior to Bank Board Approval:

The following will need to be prepared before project appraisal:

• Preparation, consultation and disclosure of ESIAs/ESMPs for the sub-projects of which technical details and location are available prior to project appraisal. If bulk water supply scheme extract water from Keenjar and/or Haleji Lake, Ecological Impact Assessment and Biodiversity Action Plan will be included in ESIA for the bulk water supply scheme

• Preparation of RPs for works for which the location and design are known

• Preparation and disclosure of Environmental and Social Audit for K-IV bulk water conveyance, and gap filling measures to meet ESF requirements

• Preparation of the mechanism to enable work in AED areas

• Preparation, consultation and disclosure of updated EMF and SMF (originally prepared under SOP-1) for sub-projects of which technical details and location are not available before Appraisal

• Preparation, consultation and disclosure of SEP

• Preparation and disclosure of LMP

• Preparation and disclosure of ESCP

• E&S capacity assessment and capacity building program

Possible issues to be addressed in the Borrower Environmental and Social Commitment Plan (ESCP):

• The ESCP will refer to various E&S documents that need to be prepared during implementation including but not limited to site specific ESMPs, RPs, LMPs, Traffic and road safety management plan, emergency response preparedness plan, biodiversity action plan

• Implementation of gap filling measures for K-IV

• Provisions to implement and update SEP (including the GRM) during project implementation

• Provisions to update LMP (as required) including the GRM for labor during project implementation

• Implementation of mechanism to enable work in AED impacted areas

• Implementation of capacity building plan and ESF training

C. Timing

Tentative target date for preparing the Appraisal Stage ESRS 17-Dec-2020

IV. CONTACT POINTS

World Bank

Contact:	Andreas Rohde	Title:	Senior Water Supply and Sanitation Specialist
Telephone No:	+1-202-473-4598	Email:	arohde@worldbank.org

Borrower/Client/Recipient

Borrower: Islamic Republic of Pakistan

Implementing Agency(ies)

Implementing Agency: Province of Sindh through the Karachi Water and Sewerage Board (KWSB)

V. FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: http://www.worldbank.org/projects

VI. APPROVAL

Task Team Leader(s):	Andreas Rohde
Practice Manager (ENR/Social)	David Seth Warren Recommended on 07-Jul-2020 at 09:48:27 EDT
Safeguards Advisor ESSA	Agnes I. Kiss (SAESSA) Cleared on 08-Jul-2020 at 15:03:22 EDT