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R2019-0161/1

June 10, 2019

**Closing Date: Thursday, June 27, 2019
at 6:00 p.m.**

FROM: Vice President and Corporate Secretary

Pakistan - Karachi Water and Sewerage Services Improvement Project (KWSSIP)

Project Appraisal Document

Attached is the Project Appraisal Document regarding a proposed loan to Pakistan a Karachi Water and Sewerage Services Improvement Project (KWSSIP) (R2019-0161/1), which is being processed on an absence-of-objection basis.

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Report No: PAD3036

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF US\$40 MILLION

TO THE

ISLAMIC REPUBLIC OF PAKISTAN

FOR A

KARACHI WATER AND SEWERAGE SERVICES IMPROVEMENT PROJECT (KWSSIP)

June 6, 2019

Water Global Practice
South Asia Region

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CURRENCY EQUIVALENTS

Effective April 30, 2019

Currency Unit =	Pakistan Rupee (PKR)
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US\$1 =	PKR 141.65
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FISCAL YEAR

July 1 – June 30

Regional Vice President: Hartwig Schafer

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank	IUFR	Interim Unaudited Financial Reports
AED	Anti-Encroachment Drive	IRR	Internal Rate of Return
AIIB	Asian Infrastructure Investment Bank	KMC	Karachi Municipal Corporation
CLICK	Competitive and Livable City of Karachi Project	KNIP	Karachi Neighborhood Improvement Project
CoC	Commitment of Cooperation (for the Reform of KWSB)	KWSB	Karachi Water & Sewerage Board
CPS	Country Partnership Strategy	KWSSIP	Karachi Water and Sewerage Services Improvement Project
DA	Designated Account	LGD	Local Government Department
DMC	District Municipal Corporations	M&E	Monitoring and Evaluation
DMD	Deputy Managing Director	MGD	Million Gallons per Day
EFA	Economic and Financial Analysis	NPV	Net Present Value
EMF	Environmental Management Framework	NRW	Non Revenue Water
ESF	Environmental and Social Framework	O&M	Operations and Maintenance
ESIA	Environmental and Social Impact Assessment	OP	Operational Policy
ESMP	Environmental & Social Management Plan	PFM	Public Financial Management
ESS	Environmental and Social Standards	PIU	Project Implementation Unit
FD	Finance Division	PKR	Pakistani Rupee
FM	Financial Management	PPP	Public Private Partnership
FY	Fiscal Year	PPSD	Project Procurement Strategy for Development
GBV	Gender Based Violence	PRRP	Project Risk Reducing Procedure
GHG	Greenhouse Gas	RAP	Resettlement Action Plan
GIS	Geographic Information System	RPF	Resettlement Policy Framework
GoP	Government of Pakistan	SBP	State Bank of Pakistan
GoS	Government of Sindh	SMF	Social Management Framework
GRM	Grievance Redress Mechanism	SOP	Series of Projects
HR	Human Resources	TORs	Terms of Reference
IBRD	International Bank for Reconstruction and Development	TP	Treatment Plant
ICB	International Competitive Bidding	WASH	Water, Sanitation and Hygiene
IFC	International Finance Corporation	WBG	World Bank Group
IFI	International Financing Institution	WRM	Water Resource Management
IPF	Investment Project Financing		



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DATASHEET

BASIC INFORMATION

Country(ies)	Project Name	
Pakistan	Karachi Water and Sewerage Services Improvement Project (KWSSIP)	
Project ID	Financing Instrument	Environmental Assessment Category
P164704	Investment Project Financing	B-Partial Assessment

Financing & Implementation Modalities

<input type="checkbox"/> Multiphase Programmatic Approach (MPA)	<input type="checkbox"/> Contingent Emergency Response Component (CERC)
<input checked="" type="checkbox"/> Series of Projects (SOP)	<input type="checkbox"/> Fragile State(s)
<input type="checkbox"/> Disbursement-linked Indicators (DLIs)	<input type="checkbox"/> Small State(s)
<input type="checkbox"/> Financial Intermediaries (FI)	<input type="checkbox"/> Fragile within a non-fragile Country
<input type="checkbox"/> Project-Based Guarantee	<input type="checkbox"/> Conflict
<input type="checkbox"/> Deferred Drawdown	<input type="checkbox"/> Responding to Natural or Man-made Disaster
<input type="checkbox"/> Alternate Procurement Arrangements (APA)	

Expected Approval Date	Expected Closing Date
27-Jun-2019	30-Jun-2025

Bank/IFC Collaboration

No

Proposed Development Objective(s)

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

Components

Component Name	Cost (US\$, millions)
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Operational & Enabling Environment Reform	7.00
Infrastructure Investments	77.00
Project Management and Studies	16.00

Organizations

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

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	100.00
Total Financing	100.00
of which IBRD/IDA	40.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**

International Bank for Reconstruction and Development (IBRD)	40.00
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Non-World Bank Group Financing

Counterpart Funding	20.00
Borrower/Recipient	20.00
Other Sources	40.00
Asian Infrastructure Investment Bank	40.00

Expected Disbursements (in US\$, Millions)

WB Fiscal Year	2019	2020	2021	2022	2023	2024	2025
Annual	0.00	1.00	5.00	8.00	11.00	13.00	2.00



Cumulative	0.00	1.00	6.00	14.00	25.00	38.00	40.00
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INSTITUTIONAL DATA

Practice Area (Lead)

Water

Contributing Practice Areas

Climate Change and Disaster Screening

This operation has been screened for short and long-term climate change and disaster risks

Gender Tag

Does the project plan to undertake any of the following?

a. Analysis to identify Project-relevant gaps between males and females, especially in light of country gaps identified through SCD and CPF	Yes
b. Specific action(s) to address the gender gaps identified in (a) and/or to improve women or men's empowerment	Yes
c. Include Indicators in results framework to monitor outcomes from actions identified in (b)	Yes

SYSTEMATIC OPERATIONS RISK-RATING TOOL (SORT)

Risk Category	Rating
1. Political and Governance	● High
2. Macroeconomic	● Substantial
3. Sector Strategies and Policies	● Substantial
4. Technical Design of Project or Program	● Moderate
5. Institutional Capacity for Implementation and Sustainability	● Substantial
6. Fiduciary	● Moderate
7. Environment and Social	● Substantial
8. Stakeholders	● Substantial
9. Other	



10. Overall

● High

COMPLIANCE

Policy

Does the project depart from the CPF in content or in other significant respects?

☐ Yes ☒ No

Does the project require any waivers of Bank policies?

☐ Yes ☒ No

Safeguard Policies Triggered by the Project

Yes

No

Environmental Assessment OP/BP 4.01

✓

Performance Standards for Private Sector Activities OP/BP 4.03

✓

Natural Habitats OP/BP 4.04

✓

Forests OP/BP 4.36

✓

Pest Management OP 4.09

✓

Physical Cultural Resources OP/BP 4.11

✓

Indigenous Peoples OP/BP 4.10

✓

Involuntary Resettlement OP/BP 4.12

✓

Safety of Dams OP/BP 4.37

✓

Projects on International Waterways OP/BP 7.50

✓

Projects in Disputed Areas OP/BP 7.60

✓

Legal Covenants

Sections and Description

The Project Implementing Entity shall maintain under LGD the group established to, inter alia, facilitate the implementation of Part 1 of the Project (“Reform Working Group”) with composition, attributions and, if needed, resources, acceptable to the Bank. (Project Agreement (PA) I.A.3)

Sections and Description

The Project Implementing Entity shall cause the unit established within KWSB (“Project Implementation Unit” or “PIU”) to be maintained and expanded as and when needed for the efficient implementation of the Project, with



KWSB staff and consultants in adequate number, each with terms of reference, qualifications and experience satisfactory to the Bank (PA I.A.2.a).

Sections and Description

The PIU shall recruit a financial management specialist, an environmental safeguards specialist, a resettlement specialist, and a social development specialist no later than three (3) months after the Effective Date, and then maintain these positions until project completion (PA I.A.2.b.iii).

Sections and Description

The PIU shall recruit, prior to the beginning of implementation of the first contract for works, and thereafter maintain a firm to provide specialized contract management support to the PIU (PA I.A.2.b.iv).

Sections and Description

The PIU shall recruit a procurement specialist prior to launching the first procurement activity for works under Part 2 of the Project (PA I.A.2.b.iii).

Sections and Description

The Project Implementing Entity shall furnish to the Bank, as soon as available, but in any case not later than April 30 of each year, the annual work plan and budget for the following year of the implementation of the Project and the evidences referred to in Section I.E.1 of the Schedule of the Project Agreement, for the Bank's review and approval; except for the annual work plan and budget for the Project for the first year of implementation of the Project, and the evidence which may be required for the implementation of the activities included in the draft annual work plan and budget for such period, which shall be furnished no later than one (1) month after the Effective Date. (PA.I.E.2)

Sections and Description

No later than one (1) month after the Effective Date, the Project Implementing Entity shall, or shall cause KSWB to, prepare and adopt a manual for the implementation of the Project (the "Project Operations Manual") and ensure that it will be at all time -at adoption and during Project implementation- in form and substance acceptable to the Bank. (PA.I.F.1)

Sections and Description

No proposed Infrastructure Investment shall be eligible for a financing from the Loan: (i) which, in the views of the Bank, may adversely change the quality or quantity of water flows to other riparian(s), or may be adversely affected by the other riparian states possible water use; or (ii) which, in the views of the Bank, would create high risk with significant negative environmental or social impacts that are sensitive, diverse or unprecedented; and (iii) whose Zone of Impact was included in the scope of an Involuntary Resettlement carried out on or after October 27, 2018, in a manner which, in the views of the Bank, does not comply with the provision of the Bank Policy OP/BP 4.12 (Involuntary Resettlement). (PA.I.B.2.b)

Sections and Description



The Project Implementing Entity shall monitor, map and regularly update the locations and extent of Involuntary Resettlements carried out on or after October 27, 2018, throughout the period of implementation of the Project. (PA.I.B.3)

Sections and Description

The Project Implementing Entity shall provide an amount at least equivalent to twenty million Dollars (\$20,000,000) as counterpart funds for the Project ("Counterpart Funds"). (PA.I.C.1)

Conditions

Type	Description
Effectiveness	The Co-financing Agreement has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it (other than the effectiveness of the Loan Agreement) have been fulfilled.
Type Disbursement	Description The Project Operations Manual (POM) has been adopted by KWSB in a form and substance satisfactory to the IBRD prior to the first disbursement under Category 2 of the Disbursement Table of the Legal Agreement.
Type Disbursement	Description The first Annual Work Plan and Budget (AWPB) has been adopted by KWSB in a form and substance satisfactory to the IBRD prior to the first disbursement under Category 2 of the Disbursement Table of the Legal Agreement.
Type Disbursement	Description No withdrawal of funds under categories (2) and (3) will be done until: (i) the Commitment of Cooperation has been signed by all signatories thereto, (ii) the Steering Committee has been established in accordance with Section I.A.1 of the Schedule to the Project Agreement; and (iii) the KWSB Board includes representatives of its customer basis in accordance with Section I.A.4 of the Schedule to the Project Agreement. (Schedule 2B 1C).



I. STRATEGIC CONTEXT

A. Country Context

1. **Pakistan, the sixth most populous country in the world is at a crossroad.** The economy accelerated with Gross Domestic Product (GDP) growth of 5.8 percent in FY18 and slowed down to 3.5 percent in FY19 as fiscal and external imbalances persisted¹. Poverty declined from 64.3 percent in 2001 to 24.3 percent in 2015², but inequality persists. The country ranks low on the 2018 Human Capital Index, at 134 out of 157 countries. Gender disparities continue, and female labor force participation (FLFP) was only 20.1 percent in 2018³. Natural disasters and unreliable water and power supply constrain progress. After the onset of another boom and bust cycle, a new International Monetary Fund (IMF) program was negotiated in May 2019. Growth will pick up as structural reforms take effect and macroeconomic imbalances are addressed. Over the medium to long term, Pakistan needs to invest more, and better in human capital, raise more revenue, simplify doing business procedures, expand regional trade and exports, and manage its natural endowments sustainably, as articulated in Pakistan@100: Shaping the Future⁴.

2. **Karachi with an estimated population of 15 million, is Pakistan's largest city, economic financial hub and main port.**⁵ It contributes 15 percent of national Gross Domestic Product (GDP) and the largest share of national tax revenues, industrial employment, manufacturing and high-end services⁶. The city dominates the economic landscape of Sindh, containing nearly all its industrial and service economy and the majority of its labor force. It has continued to be the engine of economic growth for the country, given its size, location, and industrial and human capital. In recent decades, however, the city's livability and competitiveness have declined. It now ranks 137 out of 140 cities globally for livability. In the recent decades access to basic infrastructure and services have declined. Nearly half its residents live in informal settlements (*Katchi Abadis*), only half of the city's water demands are met; public transport has deteriorated and pollution is severe. Nonetheless, a substantial reduction in violent crime has been achieved through concerted government efforts.

3. **The Karachi City Diagnostic and Transformation Strategy identifies gaps of over \$9 billion in public infrastructure.** Institutional strengthening and investments aiming to enhance livability, competitiveness and sustainability have emerged as priorities for Karachi. The Karachi Neighborhood Improvement Project (KNIP), currently under implementation, aims to upgrade three neighborhoods and to improve ease of doing business in Karachi to strengthen citizen-state confidence and show early wins. Building on this, additional interventions in water supply and sewerage (this project), urban management and competitiveness, and urban mobility and transport are being considered with support from the World Bank Group, Asian Development Bank (ADB) and Asian Infrastructure Investment Bank (AIIB). Maximizing Financing for Development (MFD) approaches will be used to crowd in commercial financing as well.

¹ World Bank Group (2018). "Pakistan Development Update 2018 – At a Cross Road."

² Redaelli, Silvia. (2018). "From Poverty to Equity – Pakistan at 100." World Bank Group.

³ World Bank Gender Statistics 2017.

⁴ World Bank. 2019. Pakistan at 100 : Shaping the Future. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/31335> License: CC BY 3.0 IGO.

⁵ Pakistan Bureau of Statistics, 2017 census, provisional summary

⁶ World Bank, Transforming Karachi into a Livable and Competitive Megacity – A City Diagnostic and Transformation Strategy, Washington DC, 2018; p.2;



4. **Karachi is extremely vulnerable to natural and climate-related disasters.** Recurrent floods (due to poor drainage) and future rises in sea levels further complicate its water and sanitation sector challenges. Expected temperature increase in Pakistan is higher than the expected global average increase, expected to reach +1.4 to +3.7°C by 2060. Warming is expected to be more rapid in the south and coastal zones, where Karachi is located. The risks of drinking water supply and sewerage service shortfalls are aggravated by climate change. The city is particularly vulnerable to more extreme heat, precipitation, flooding and sea level rise which not only increases the flood risk but also causes saltwater intrusion in the coastal aquifers.⁷ Improving the water and sewer system will be critical to successfully adapt to these risks. For example, dealing with heat waves, such as the one experienced in 2015, requires sufficient and continuous availability of drinking water; functioning sewer systems and adequate treatment capacity are important to deal with the impact of larger and more frequent urban floods and to prevent contamination of the urban environment through sewer overflows. Likewise, sea level rise is likely to further reduce the quality of groundwater through saltwater intrusion and thus increase reliance on the public piped system.

5. **The city also faces substantial gender gaps.** Women are often unable to reach out to public service providers effectively. Access for women is limited due to a mixture of poorly-planned infrastructure, prevailing socio-cultural norms and threats to public safety. Working conditions at service providing utilities like KWSB are not conducive for female employees due to more restricted job and promotion opportunities as well as inadequate facilities (e.g. lack of safe transport to work, of adequate restrooms etc.). In particular, women lack representation and agency in planning and decision making. There are 168 female staff among 11,700 total staff in the Karachi Water and Sewerage Board (KWSB). Women represent only 1.4 percent of staff at regular employee level (Grade 16 and below), and 0.9 percent at officer level (Grade 17 and above).

B. Sectoral and Institutional Context

6. **Karachi's water supply services are falling far short of the expanding city's needs.** Nearly three million residents lack access to piped water⁸, and even those formally connected experience inadequate, irregular and inequitable service. Typical service quality is “two hours every two days to four hours per day at very low pressure”, with rationing widespread especially in *Katchi Abadis* which face severe shortages of water”.⁹ Brackish groundwater limits the use of household wells, so inefficient and expensive private water tankers are major source of domestic water supply. The city's current water demand is estimated at 5.5 million cubic meters per day, and the current supply shortfall is estimated as 2.5 million cubic meters per day.¹⁰

7. **More than 6 million residents lack access to public sanitation services.** Those lacking access typically discharge sewage through the stormwater system, natural drains or informal sewers directly into rivers and ultimately the sea. Pit latrines and septic tanks are used by less than 3 percent of the population.¹¹ Even those with nominal access to public sewerage do not receive acceptable services. The city's sewage treatment facilities are dilapidated and dysfunctional because of “complex challenges of

⁷ See Hijioka, Y., et al.; Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1327-1370.; and: Hasan, A, Pervaiz, A and Raza, M. 2017. Drivers of climate change vulnerability at different scales in Karachi. IIED Working Paper. IIED, London; and Anwar, F.; Karachi City Climate Change Adaptation Strategy –A Roadmap; April 2012; Shehri-Citizens for a Better Environment;

⁸ Data from PSLM 2014-15 combined with 2017 census data.

⁹ World Bank, Transforming Karachi into a Livable and Competitive Megacity – A City Diagnostic and Transformation Strategy, Washington DC, 2018; p.46;

¹⁰ Ibid. p.45; Based on an assumed need of 55 gallons per capita per day. In Imperial Gallons, the equivalent values are 1200 million gallons per day (mgd) in demand, and a shortfall of 550 mgd.

¹¹ Pakistan Social and Living Standards measurement Survey, 2015



inadequate sewer trunk mains, malfunctioning pumping facilities, and a lack of wastewater treatment capacity”¹². Up to 2.2 million cubic meters per day of raw sewage is discharged into the sea.¹³ Sanitation related challenges are reinforced by poor solid waste removal, which aggravates contamination directly as well as by blocking drainage and sewerage pipes. The failure to provide basic water and sewerage services in Karachi is a frequent source of public discontent and has prompted an intervention of the Supreme Court of Pakistan, which issued directives aimed at improving services. Two wastewater treatment plants (TP1 and TP3) are currently being rehabilitated. Improving water and sanitation services in Karachi is a high priority for both the federal and the Sindh governments.

8. The consequences of persistent Karachi’s Water, Sanitation and Hygiene (WASH) service shortfalls are dramatic. As the Supreme Court noted in 2017, “residents as well as all visitors to the city” are exposed “to avoidable water-borne diseases” with “four-fifths of all illnesses caused by water-borne diseases, many of which result in fatalities.”¹⁴ As highlighted in a recent study, limited access to and high cost of water, are particularly acute problems for the poor and “for women, who are often the sole caretakers of the household” and must frequently “revert to carrying dirty and contaminated water from a well or from a river or canal that ends up endangering the lives of their families” or must “buy water from private tankers, despite unsure availability and the water’s exorbitant cost, which is onerous given meager household incomes.”¹⁵

9. Weak systems and fragmentation of land management and service delivery mandates, among over a dozen agencies at different tiers of government, have undermined coordinated and inclusive development and enabled large-scale encroachment of public land in recent decades. Informal settlements and squatters are widespread, including residential and commercial encroachers on vacant lands, sidewalks, public spaces etc. A major Anti-Encroachment Drive (hereafter referred to as “AED”) was initiated in Karachi in October 2018 on the order of the Supreme Court of Pakistan. The Court ordered to vacate public spaces (parks, footpaths, amenity plots, etc.) across the city from unauthorized uses and occupations. The order is currently under implementation by various civic and local agencies, including KMC, who are required to report periodically to the Court on progress. The focus of the AED is on commercial activities encroaching public spaces. Thousands of businesses, street vendors and hawkers¹⁶ have been affected, primarily in the most commercial districts. Acknowledging the adverse impacts of AED on the poor and vulnerable groups, the Government of Sindh (GoS) and local agencies like the Karachi Municipal Corporation (KMC) are making efforts to relocate some affected businesses.

10. The Karachi Water & Sewerage Board is responsible for WASH services. The current service gaps arise from KWSB’s operational challenges, chronic under-investment, and a weak enabling environment. KWSB has not had significant capital investment for over a decade, even though a 2008 masterplan estimated investment needs of over US\$2.5 billion to achieve universal access to safe and affordable

¹² World Bank, Transforming Karachi into a Livable and Competitive Megacity – A City Diagnostic and Transformation Strategy, Washington DC, 2018; p.48;

¹³ Equivalent to 475 million gallons per day

¹⁴ Supreme Court of Pakistan; Order – Constitutional Petition No. 38 of 2016; Full text at: <http://www.supremecourt.gov.pk/web/page.asp?id=2443> [9/23/2018]

¹⁵ World Bank, Transforming Karachi into a Livable and Competitive Megacity – A City Diagnostic and Transformation Strategy, Washington DC, 2018; p.47;

¹⁶ The Bank’s Policy on Involuntary Resettlement (OP 4.12) requires provisions to compensate or rehabilitate displaced persons and allow for compensation of loss of livelihood. The design of this project is fully informed by the implications of the ongoing anti-encroachment drive (AED) and comprehensive measures have been put in place to avoid and mitigate risks, consistent with Bank policies, and to increase capacity of LCs and GoS to conduct more inclusive development going forward.



drinking water by 2030. The last international financing institution (IFI) investment project was in the mid-1990s. KWSB infrastructure is dilapidated and operating far below capacity.

11. **KWSB technical challenges are exacerbated by low operational performance.** Lack of metering of domestic customers, an inefficient tariff structure, an outdated database to calculate tariffs, and poor billing and collection efficiency, have led to a widening gap between receipts and expenditures. In 2015-16, total receipts covered barely 50 percent of the operational expenditures.¹⁷ Non-revenue water (NRW) from physical and commercial losses is conservatively estimated to be 55 percent.¹⁸ Outstanding KWSB debts to Karachi Electric alone are US\$320 million, and monthly financial losses are estimated at more than US\$5 million. Non-payment of water bills is a particular problem. The total outstanding arrears are estimated at US\$460 million (US\$179 million for retail and US\$281 million for bulk) and they continue to increase. Government institutions and utilities are among the largest defaulters, owing the equivalent of US\$350 million. Given these financial pressures, KWSB has been unable to carry out preventative maintenance, focusing only on emergency repairs, thus aggravating the deterioration of the network over time. Table 1 below summarizes key financial and performance characteristics of the utility.

Table 1: KWSB – Key Characteristics

Parameter	Value
Number of billed retail connections (2018)	1,845,143
Number of billed bulk connections (2018)	9,453
Number of Staff (2018)	11,700
Network size	11,000 kilometers
Non-Revenue Water (% , 2018)	55 percent
Average Retail Tariff (PKR/m ³ , 2018)	43.3 PKR/m ³
Annual Cash Collections (PKR million, 2018)	PKR 8,446 million
Annual Operating Expenses (PKR million, 2018)	PKR 14,452 million
of which electricity expenses (PKR million, 2018)	PKR 5,984 million
Net Operating Income (PKR million, 2018)	– PKR 6,006 million

12. **KWSB under-performance has been aggravated by a complex, inefficient institutional framework.** After various institutional changes, KWSB became a government-controlled entity under the KWSB Act of 1996.¹⁹ The composition of the Governing Body represented by the KWSB Board Members is dominated by government officers. The city is represented by the Mayor of Karachi and a Chairperson from each of Karachi's six District Municipal Corporations (DMC). These arrangements restrict KWSB's operational autonomy, limit direct inputs by stakeholders (e.g. consumers), and constrain KWSB's ability to pursue a turnaround strategy. Large city utilities are usually either fully aligned with municipal governments or operate as autonomous public entities. KWSB's ability to act is also constrained by the administration of large Cantonment areas within Karachi by the military, as well as the utility's lack of direct influence on the solid waste challenge. The Sindh Environmental Protection Agency (SEPA) is responsible for regulating drinking water quality and wastewater discharges, but Sindh lacks a dedicated water and

¹⁷ KWSB Financial Reform Roadmap, 2016;

¹⁸ Ibid.

¹⁹ KWSB was established in 1981, with the mandate of production, transmission and distribution, cost recovery of potable water, management of the sewerage system, development of schemes to cover services short falls, and collection of revenues. But in 1983, the GoS promulgated the Sindh Local Government (amendment) Ordinance (February 1983) institutionally bringing KWSB under the umbrella of Karachi Metropolitan Corporation (KMC). In 1996, a new Act called the Karachi Water & Sewerage Board Act 1996 was adopted.



wastewater regulator and laws governing groundwater use. Women are poorly represented at all levels of KWSB, which also lacks sufficiently women-friendly facilities.²⁰

13. **KWSB and the GoS are committed to reforms and have made significant initial steps.** An exemplary step has been the reform of the tanker-truck business that supplies more than 10 percent of residents.²¹ Under pressure from civil society and the Supreme Court, the GoS empowered KWSB in 2016-7 to close down all illegal water hydrants (more than 100) supplying water to tankers, either from illegal connections to the KWSB water network or from contaminated groundwater. KWSB established six legal water hydrants and outsourced their operation. Tankers using these hydrants require a KWSB license, and must prominently display the KWSB phone number and water tariffs. Installation of meters and outsourcing have drastically increased hydrant revenues, which was a major achievement against strong financial interests from groups profiting from illegal and unregulated tankers. Hydrant revenues increased from PKR 79 million in FY15 to PKR 356 million in FY17. Preliminary data for FY18 shows a further increase to PKR 658 million. KWSB took further steps to improve services by establishing a centralized Tanker Request Center and launching a mobile application (OTS KW&SB) to make it possible to order a tanker by mobile phone. These reforms demonstrate the current political will to improve KWSB performance.

14. **KWSB has begun reforming financial and customer management, non-revenue water and services to the poor.** As a result, revenue collection has increased significantly from FY 16 to FY 18 without tariff increases, enabling KWSB to increase expenditure on Operations and Maintenance (O&M). In February 2019, KWSB created and staffed dedicated units for non-revenue water reduction and for improving services and revenue collection in *Katchi Abadis*. The GoS is completing two further reform steps, namely, the notification to establish a High-Level Reform Steering Committee and the creation of a more representative KWSB Board.

15. **Building on these initial steps, a Commitment of Cooperation (CoC) has been agreed between the GoS, KWSB and the World Bank.** The CoC outlines a reform roadmap aligned with the objectives of the proposed Series of Projects (SOP). The CoC vision is to transform KWSB by 2030 into a modern, efficient utility, accountable to its customers and capable of providing safely managed water and sanitation services, while recovering costs and raising private finance.

16. **The CoC Roadmap outlines concrete reforms with specific timelines:** The core institutional reform is expected to be an amendment of the KWSB Act, including critical changes such as (i) the authority of the Managing Director (MD) or Chief Executive Officer (CEO) to recruit staff without interference from the KWSB Board of Directors or the Government; (ii) changing the service rules following principles of diversity, accountability and transparency; (iii) establishing tariff setting rules based on affordability and O&M cost recovery; and (vi) allowing the KWSB Board to approve tariffs at its sole discretion based on the new tariff setting rules and public consultations. Other key reform steps outlined in the CoC aim for improvements of service delivery and financial viability, including with measures such as the development of a detailed private sector participation strategy; independent financial audits; an increase in female staff, and specific targets for service continuity and non-revenue water reduction. To implement the CoC after project approval, a KWSB Reform Working Group has been established by the Department of Local Government.²² The agreed draft CoC is in Annex 4.

²⁰ A series of Focus Group Discussions with women staff at all levels highlighted the lack of washrooms and other facilities.

²¹ Pakistan Social and Living Standards Survey 2014-15;

²² One approach to operationalize CoC commitments could be through a performance agreement, for example between KWSB Management and Board of Directors.



17. **The project will be instrumental in supporting reforms and enabling complementary infrastructure investments.** As outlined below, the first project in the proposed series (SOP-1) will focus on reforms and rehabilitation, strategically complementing reform measures (e.g. improving metering and billing to reduce commercial revenue losses) with infrastructure investments (e.g. network repairs). SOP-1 will increase resilience against climate change related risks —more specifically, floods, droughts, and saltwater intrusion — by improving water and sanitation service quality, which will be reinforced and deepened in subsequent projects.

C. Relevance to Higher Level Objectives

18. **The proposed Karachi Water and Sewerage Services Project (KWSSIP) is aligned with the Bank's Pakistan Country Partnership Strategy (CPS) FY15-20²³,** as well as the 2019 report "Pakistan at 100" that highlights the necessary reforms required for Pakistan to become an upper-middle income country by 2047. It supports the CPS results area on "Service Delivery" by improving access to safe and reliable water and sanitation in Karachi and is also aligned with the results areas "Private Sector Development" and "Inclusion". KWSSIP specifically supports CPS Outcome 4.5: Improved urban management in cities by providing reliable and affordable safe drinking water and functional sewerage services. The project will reduce exposure to unsafe drinking water and increase access to sewerage services, with a particular focus on informal settlements. Its emphasis on *Katchi Abadis* will improve inclusion and reduce "the vulnerability for groups at risk" (CPS Outcome 3.2). KWSB reforms will augment service delivery by improving "public resource management" (CPS Outcome 4.1) and adopting "performance and transparency mechanisms in selected institutions" (CPS Outcome 4.4). The project will support private sector development, in particular by improving the "business environment for private sector" (CPS Outcome 2.1) through reforms of the enabling environment, which will also be informed by a study co-financed by the Public-Private Infrastructure Advisory Facility (PPIAF).

19. **The Karachi City Diagnostic and Transformation Strategy²⁴ finds that a timely, comprehensive and programmatic phased approach is needed to improve Karachi's competitiveness, livability and sustainability.** This project is thus part of the Karachi Platform that also includes the proposed World Bank-supported Karachi Mobility Project and the proposed Competitive and Livable City of Karachi Project (CLICK; P161402). The Karachi Platform supports a coordinated and longer-term engagement through interventions in transportation, water, sewerage, competitiveness, livability and fiscal and environmental sustainability. The proposed KWSSIP is aligned with Track 4 of the Karachi Strategic Development Plan 2020, which aims to improve service delivery in water and sanitation, road construction and maintenance, solid waste, built heritage sites, public space development, safety and mobility, and green spaces management with a focus on disadvantaged neighborhoods. The project is also aligned with Sustainable Development Goal (SDGs) target for "Clean water and sanitation". It will also address some of the key priority areas of Pakistan's 2018 National Water Policy: water scarcity and WASH.²⁵

20. **There is a strong rationale for public sector support for the development of KWSB.** Clean and safe water and sanitation services are public goods and the project addresses an urgent public need. Moreover, given current operating losses, debts and substantial political and governance risks, it is unlikely that

²³ World Bank Group (2014) Islamic Republic of Pakistan: Country Partnership Strategy, 2015-2020 (Report No. 84645-PK), discussed by the Executive Directors on May 1, 2014, and extended by the Performance and Learning Review (Report No. 113574) distributed to the Executive Directors on an absence-of-objection basis with a closing date of June 15, 2017.

²⁴ Transforming Karachi into a Livable and Competitive Megacity
<http://dx.doi.org/10.1596/978-1-4648-1211-8>

²⁵ Ministry of Water Resources, Government of Pakistan; National Water Policy 2018; April 2018.



required investments could be funded at affordable interest rates from private sources. Future projects in the series are expected to access commercial finance once KWSB's institutional structure and financial performance are improved.

D. Series of Projects (SOP)

21. **The project is conceived as the first in a proposed SOP that forms a long-term program to address the serious WASH service gaps in rapidly growing Karachi.** The SOP will provide strategic coherence and a long-term financial framework for the ambitious infrastructure expansions and utility reform program pursued by KWSB. The SOP signals commitment and continuity for the reform process, while staggered projects will incentivize performance to allow the client to access successive financing rounds. Compared to a single project, the SOP will provide more opportunity for learning and adaptation, an important characteristic for a complex program in a politically challenging environment.

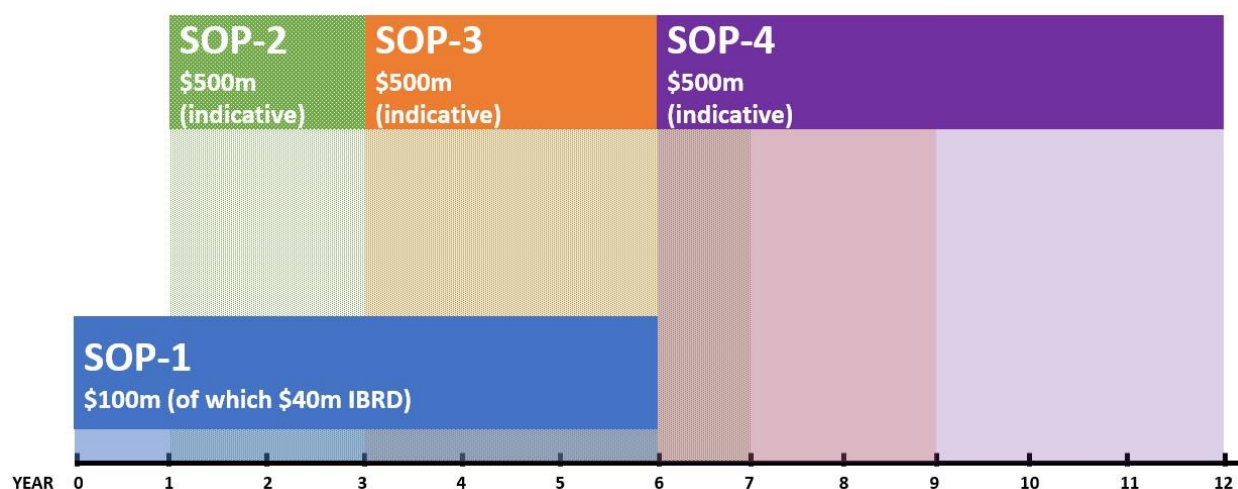
22. **The Program Development Objective of the proposed Series of Projects is to increase equitable access to safe water and sanitation services in Karachi.** To achieve this objective, the SOP aims to implement infrastructure-, capacity building- and enabling environment investments in four progressive, overlapping projects over a period of twelve years (Figure 1). The first project will have a financing volume of US\$100 million, of which US\$40 million from the International Bank for Reconstruction and Development (IBRD). Subsequent investments will be higher and will focus on priority infrastructure. Subject to availability and Bank approval, the total investment volume of the proposed Series of Projects would be an indicative US\$1.6 billion, of which US\$640 million from IBRD and the remainder from the Asian Infrastructure Investment Bank (AIIB) and the GoS, which will finance 40 percent and 20 percent, respectively. The partnership with AIIB will be significant in achieving service improvements and the reform of KWSB.

23. **The first project (SOP-1) will focus on reform, maintenance and rehabilitation, with no major investments in new infrastructure.** Rehabilitation activities will be selected during implementation in line with the evolving reform agenda and as the identification of priority sites is finalized. Reform efforts will be aligned with the CoC roadmap, and initiate improvements to service delivery standards, KWSB's institutional structure, the utility's financial viability and greater involvement of the private sector. SOP-2 is expected to scale-up investments, most notably by financing the Malir Basin wastewater collection and treatment facilities and K4 Augmentation and downstream works, while deepening capacity building and reform efforts, with an emphasis on cost-recovery and driving the PPP agenda. SOP-3 is expected to focus on increasing water production and financing investments to ensure the additional wastewater created can be treated (S IV Phase 1). Project 3 is expected to provide viability gap financing for the first substantial private investments in KWSB's infrastructure – a continuing focus for capacity building and enabling environment efforts. SOP-4 is expected to focus on improving services in informal settlements based on experience gained under the previous projects and would complete rehabilitation works. An overview of indicative activity costs is in Annex 5.

24. **The proposed sequencing of projects (Figure 1) has a number of advantages:** An initial smaller SOP-1 focused on reform and rehabilitation will demonstrate commitment and prepare the utility for larger infrastructure investments in subsequent projects. The prospect of the proposed larger successor projects will also provide an implicit performance incentive. If performance is satisfactory, the relatively prompt succession of projects after one, three and six years, respectively, will allow critical infrastructure to be built when needed and when ready for implementation, and will allow for the enhanced capacity of the project team over the program life cycle.



Figure 1: Proposed Sequencing of Projects in the SOP



II. PROJECT DESCRIPTION

A. Project Development Objective

25. **PDO Statement:** The Project Development Objective is to improve access to safe water services in Karachi and to increase KWSB's financial and operational performance.

26. **PDO Level Indicators:**

- Persons provided with access to drinking water uncontaminated by fecal coliforms under the project (2,000,000)
- Coverage of Operation & Maintenance Costs (100 percent)
- Amendment of KWSB Act to increase KWSB's financial and operational autonomy

27. **Intermediate Results Indicators (IRI):** To monitor progress towards PDO level indicators, the project will track 15 intermediate results indicators, including targets for infrastructure rehabilitation, non-revenue water reduction, metering, grievance redress, informal settlements, gender equity and energy efficiency. These IRIs are listed in detail in Section VI "Results Framework and Monitoring" of this PAD.

B. Project Components

28. **The first project will invest US\$100 million, of which US\$40 million from IBRD, in infrastructure rehabilitation, capacity building to raise operational performance and improvements to the enabling environment.** The project activities of SOP-1 will be grouped into three components. Component 1 will finance both capacity building and reform measures to improve the enabling environment, thus contributing to improved utility performance, including more reliable and energy efficient services. 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:



a. Component 1 – Operational & Enabling Environment Reform (US\$7 million of which IBRD US\$2.8 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 including on:

- i. *Revenue Management, Customer Care and Communication*: Improving customer management is a critical objective both to provide better, more accountable services to the population of Karachi and to increase revenue streams and thus KWSB's sustainability. Higher revenues will enable KWSB to spend more on O&M, thus directly contributing to more reliable services and increasing Karachi residents' resilience to climate-exacerbated water shortages.

The initial focus of revenue enhancement measures will not be water tariffs, but lower hanging fruits. As most KWSB revenues comes from bulk customers, generally either unmetered or inaccurately metered, improving metering and enforcing bulk customer bill collection will be the first priority. Similarly, domestic connections are unmetered and tariffs are based on largely outdated building descriptions. Updating KWSB customer data using a gender disaggregated customer identification survey (and subsequent updating) is expected to significantly increase revenue given the pace of urban densification. Additional revenue increases will come from upgrades to the metering and billing systems, and from a reintroduction of pre-existing but suspended wastewater tariffs. Beyond these quick-wins, the project will study the relationship between cost-recovery and KWSB tariff levels to guide the introduction of universal domestic metering with volumetric tariffs under future projects, paying close attention to affordability, and the design of an effective communication strategy. Beyond revenue enhancement, KWSB will seek matching improvements in customer service by creating six new customer service centers. These will not only have staff from the Complaints Cell but also staff from the revenue and operational departments. Staff will be trained in customer engagement and a modern Grievance Redress Mechanism (GRM) will be developed, implemented and monitored. Each center will include a desk for (and staffed by) women. The citizen report card process will be revived, and a communications strategy developed. A water conversation strategy addressing different consumer groups will be developed and integrated into the communication strategy.

- ii. *Non-revenue Water (NRW) Reduction*: The project will develop a systematic non-revenue water reduction program, 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.
- iii. *Institutional Reforms and Human Resources*: 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. An institutional reform program (including drafting amendments to the KWSB Act) will be developed and implemented. Amendments to the Act are expected to include (a) the right of the MD/CEO to recruit staff without interference from the KWSB Board of Directors or the Government, (b) changing the service rules following principles of diversity, accountability and transparency, (c) establishing tariff setting rules based on affordability and O&M cost recovery, and (d) allowing the KWSB Board of Directors to approve tariffs at its sole discretion based on the new tariff setting rules and public



consultations. Improving cost recovery will enable KWSB to better maintain its infrastructure, thereby contributing to service reliability and increasing the resilience of its customers to droughts and floods.

- iv. *Social Sector Policy and Katchi Abadi Program*: The project will support the informal settlements unit of KWSB to implement infrastructure investments in at least three *Katchi Abadis* during SOP-1, and ensure that lessons learnt are translated into a subsequent broader informal settlement program. This program will include resources to support KWSB cooperation with local NGOs and community-based entrepreneurs, in particular women's organizations, in order to learn from existing successful approaches as well as to assist vulnerable customer groups in a targeted manner (e.g. by identifying the water contamination trail from main network to inhouse storage and water quality improvement/coping mechanisms, by conducting education and awareness campaigns, by assessing informal water operators, and developing a Gender Action Plan). Awareness campaigns will also aim to target littering to reduce plastics entering networks (which may cause blockages), and ultimately the sea. *Katchi Abadis* will be integrated into the existing KWSB Geographic Information System (GIS) system by mapping service levels, demographics and infrastructure. Collectively these measures will improve the climate resilience of *Katchi Adabi* residents, who are particularly vulnerable to heat waves (which increase demand for water) and flooding (which has a larger impact if floodwater is contaminated by untreated wastewater).
 - v. *Capacity Building– Asset Management, Financial Management, Industrial Discharge Monitoring*: The project will finance additional capacity building including the design and implementation of an asset management program and improvements to the existing GIS of KWSB. These are critical for the sustainable management of KWSB. In particular, the asset management program will contribute to climate change adaptation: 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. The asset 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 support improvements in financial management at KWSB and support improved monitoring of industrial discharges into the sewerage and stormwater system, thereby reducing the contamination of water bodies. A survey of the condition of priority sewers will be conducted to guide rehabilitation designs.
- b. Component 2 – Infrastructure Investments (US\$77 million of which IBRD US\$30.8 million): KWSB will implement subprojects (works) for infrastructure in their mandate, as per screening criteria and other procedures described below and in annex 2 and annex 3. KWSB will be responsible for design and implementation of subprojects in compliance with the Bank's policies on procurement, financial management (FM), anti-corruption and social and environmental safeguards. Selection, design and implementation of each subproject will be based on a set of screening criteria as part of a "*Project Risk Reducing Procedure*" (PRRP), a multi-level screening process that has been built into project design to avoid project-related social risks, especially associated with the ongoing AED, and ensure compliance with the Bank's social safeguards policies, specifically the policy on Involuntary Resettlement (OP 4.12). The screening criteria and other aspects of PRRP are included in the SMF/RPF (See Annex 3 for details) and summarized below:



- i. Potential subproject sites (including proposed construction sites and associated zones of impact) located within areas already impacted by the AED on or after October 27, 2018 will not be eligible for financing under the project.
- ii. For eligible subprojects, the screening mechanism will further be applied to determine the types of subproject-specific safeguard instruments to be prepared and implemented, depending on the nature, scale and scope of the subproject.
- iii. Once project implementation begins, any unforeseen AED activities which may take place in project-selected sites will have to comply with the provisions of the Bank's safeguards policies as per the SMF/RPF and EMF, for any subproject to proceed.

The selected infrastructure interventions will reinforce the impact of capacity building and institutional reforms, and lay the foundation for scaling-up capital investments in subsequent projects. Within the constraints of the KWSSIP RRP, priority areas for investments are expected to include:

- i. *Water Network Rehabilitation:* To 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. A key intervention under this sub-component, which is expected to result in improved access to uncontaminated water for at least 2,000,000 consumers (see results indicators), is the installation of additional chlorination facilities within the existing network.
- ii. *Sewer Network Rehabilitations:* The project will invest in priority sewerage rehabilitation to restore network integrity in critical areas, and to reduce sewage leakage and flooding, including by strengthening KWSB's fleet of sewerage suction and jetting trucks. These investments will be in the wastewater collection areas of the two wastewater treatment plants currently being rehabilitated (TP1 and TP3). As noted above, 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. New fuel-efficient sewage suction and jetting trucks will modernize the KWSB fleet and reduce sewer clogging. These investments will reduce health risks for Karachi residents. The new suction and jetting trucks are also expected to have improved fuel efficiency standards relative to the existing fleet. Bidding documents for these trucks will be ready and enable a rapid disbursement of up to US\$10 million, constituting one of the first major interventions of the project, expected to lead to improved network performance.
- iii. *Rehabilitation of Safe Water Supplies in informal settlements (Katchi Abadis):* The project will improve water supply and sanitation in three *Katchi Abadis*, including through the installation or upgrading of water automated teller machines, metered house connections and provision of bulk water supply, using various arrangements for their operation and maintenance, in close consultation with the communities. To select pilot *Katchi Abadis*, all informal settlements will be screened for whether the existing KWSB water network can be adapted to supply the required amounts of water at acceptable quality, and whether local sewer infrastructure has the potential to carry the expected wastewater



quantity to a wastewater treatment plant. *Katchi Abadis* complying with these basic criteria will be ranked according to criteria including need and cost-effectiveness. These efforts will be supported by intensive stakeholder consultations to manage expectations and build political consensus and community support. Subsequent projects will scale-up these investments based on lessons learned. More reliable WASH services will increase the targeted settlements' resilience to heatwaves, water shortages and floods.

- iv. *Improving Energy Efficiency*: The project will reduce the energy consumption of KWSB pumping stations and water treatment plants, and thus reduce current high energy costs and KWSB's carbon footprint, reinforcing the impact of the asset management improvement program.
- v. Other investments will be considered as Component 1 reforms evolve, screened by the criteria in Annex 2.

c. Component 3 – Project Management and Studies (US\$16 million of which IBRD US\$6.4 million): This component will support the costs of managing the project and preparing aspects of the proposed subsequent projects, taking into account the expected impacts of climate change in the studies to be conducted. This will include direct project management costs of KWSB, updating of KWSB's Masterplan, feasibility studies, tender- and safeguard-documents and supervision costs for this project as well as other critical studies such as an energy audit, a review of private participation options and a rapid groundwater protection assessment. In addition, this component will support the institutional strengthening of KWSB including strengthening the social and environmental management capacity of KWSB. This component will also finance the preparation of studies, tender- and safeguard documents for investments in future projects of the proposed series, as long as they are not rated environmental category A under Operational Policy (OP) 4.01 or High under Environmental and Social Standards (ESS) 1.

The selection criteria for investments will ensure that investment will not be prepared for areas which have been impacted by the ongoing AED nor for areas where the standards and conditions of the Bank's operational policy on involuntary resettlement (OP 4.12), and/or Environmental and Social Standard 5 (ESS5 of the Bank's Environmental and Social Framework (ESF)) on land acquisition, restrictions on land use, and involuntary resettlement cannot be ensured. OP 4.12 and ESS5, among other stipulations, require compensation and (if applicable) rehabilitation of affected people including persons without land title, squatters, vendors, hawkers etc. For infrastructure investments, the ESF will apply to subsequent phases of this SOP, but not to this project.

C. Project Beneficiaries

29. **The proposed project will have two primary beneficiaries:** Firstly, many inhabitants of Karachi will benefit from uncontaminated water and associated gains in health and economic prosperity. At least 2,000,000 people are expected to benefit from better access to improved water services. Secondly, KWSB will benefit from enhanced distribution capacity and service quality, as well as capacity building measures to translate these infrastructure improvements into higher revenues through improved billing and collections and greater accountability to customers. Table 2 gives the expected number of beneficiaries.

Table 2: Expected Number of Beneficiaries

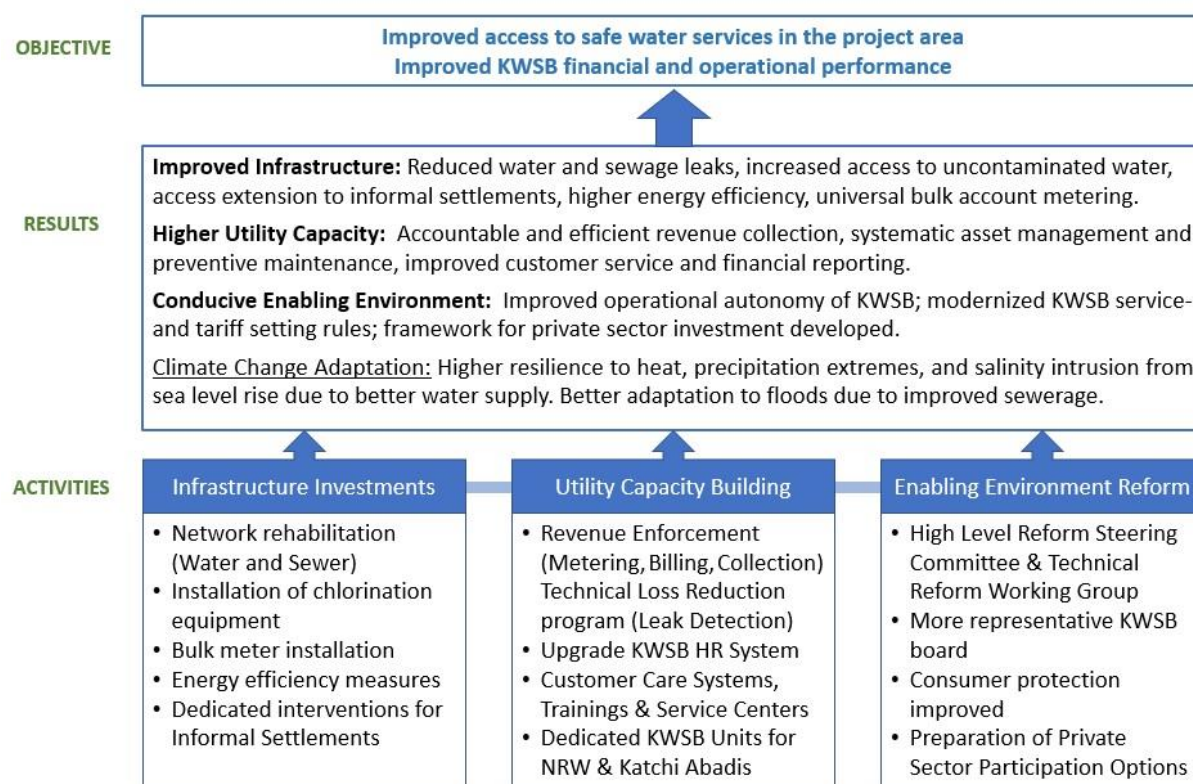
Beneficiaries covered	2019	2020	2021	2022	2023	2024	2025
	0	0	50,000	150,000	500,000	1,000,000	2,000,000



D. Results Chain

30. The project's theory of change posits that lasting progress in WASH services requires concurrent improvements across three pillars: infrastructure; utility capacity, and the enabling environment.

Figure 2: Theory of Change



31. **These three pillars are closely linked and are at the center of the proposed project.** As a recent World Bank study on delivering sustainable water services highlighted, “when institutional reforms do not accompany [infrastructure investments], the sustainability of outcomes can be compromised”. In turn, utility reforms can also be undermined if not reinforced by infrastructure investments, because without significant service improvements a delivery gap arises that can reduce support for reforms among government, staff and the public.²⁶ Improvements in the enabling environment that improve KWSB’s institutional underpinnings and operational autonomy will facilitate both investments and operational performance. Figure 2 above illustrates how project activities across the three pillars will contribute to results and the overall outcome objective.

E. Project Cost and Financing

Table 3: Project Budget by Component and Source of Financing (US\$millions)

Project Components	Total Cost	IBRD	AIIB	GoS
Component 1	\$7 million	\$2.8 million	\$2.8 million	\$1.4 million

²⁶ World Bank, *Delivery Case Study – How to Shape an Enabling Environment for Sustainable Water Service Delivery in Nigeria*; Washington DC, April 2015;



Project Components	Total Cost	IBRD	AIIB	GoS
Component 2	\$77million	\$30.8million	\$30.8 million	\$15.4 million
Component 3	\$16 million	\$6.4 million	\$6.4 million	\$3.2 million
Total Project Costs	\$100 million	\$40 million	\$40 million	\$20 million
<i>of which Front End Fee</i>	<i>\$0.1 million</i>	<i>\$0.1 million</i>		-

32. **Pursuant to a Project Co-Lenders' Agreement with AIIB, the World Bank will supervise the Project and administer both the IBRD and the AIIB loans in accordance with the World Bank's policies and procedures.** The co-lender agreement will be signed by the World Bank and the Asian Infrastructure Investment Bank (AIIB) in accordance with the 2016 Co-Financing Framework Agreement between World Bank and the AIIB (as amended in 2018). The AIIB and the World Bank will jointly finance the project in equal shares, with all components financed jointly by the partners. The GoS is expected to finance the project with US\$1 million in the first year, and then provide the remaining US\$19 million in counterpart funding in equal shares over the duration of the project through its annual budgeting process. Table 3 above summarizes the project budget by components and financing sources.

F. Rationale for Bank Involvement and Role of Partners

33. **The Bank is uniquely positioned to assist KWSB in addressing sector reforms and infrastructure gaps as it combines the ability to provide long-term finance with its global sector knowledge and convening power.** World Bank financing remains essential for major capital investments in the water sector due to the public good nature of project related benefits and KWSB's inability to obtain sufficient private financing in light of low-cost recovery and significant political and macroeconomic risks. The World Bank with its extensive experience in the public sector in Pakistan is well placed to assist KWSB in improving its operational performance, strengthening its financial position and working towards improving the enabling environment, and thus helping position the utility for more commercially oriented financing in the future. The Bank has long experience in supporting the management of such reforms, drawing on its engagement in water supply and sanitation and utility reform in megacities around the world.

G. Lessons Learned and Reflected in the Project Design

34. **The lessons learned and reflected in the project design stem from more than 50 years of World Bank Group experience supporting water supply and sanitation projects around the world.** Those lessons point to key priorities to improve utility performance, including: (i) the importance of quickly increasing revenues; (ii) lowering energy costs (usually the highest single item); (iii) leveraging technology in operations and customer service; (iv) involving the private sector; and (v) building a motivated workforce. This project does all of these and more.

35. **There are four additional lessons to be drawn from KWSB's unique context.** Firstly, given it has been over two decades since the Bank worked with KWSB, trust, relationships and cooperative approaches need to be rebuilt. Hence the smaller and simpler engagement of SOP-1. Secondly, for a utility to perform in a very large and complex urban setting, it requires agility and independence from political interference. The emphasis in SOP-1 is therefore on reforms to free KWBS from political constraints and enable it to focus on building sustainable service delivery. Thirdly, combining major infrastructure investments with significant reforms requires a high level of commitment from the political leadership. The project has thus



stressed the importance of engaging and consulting with a wide array of stakeholders, to develop wider ownership of interventions, not just during preparation, but also while the project is implemented. The Reform Working Group and Project Steering Committee (see below), will play a key role to that effect. Fourthly, the customer base must regain confidence in KWSB as a trustworthy service provider. Urban utilities not only provide a public good but can generate significant financial surpluses through economies of scale and monopoly status. However, this value does not materialize without consumer trust, and without consumers becoming partners in achieving utility sustainability. Ensuring this social contract is therefore a key project objective, and requires strong broad consultations with stakeholders as well as a strong communications strategy.

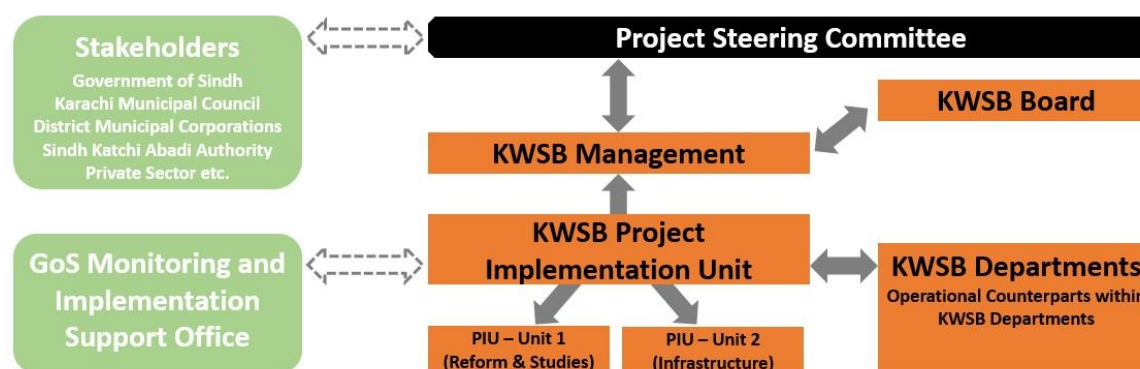
III. IMPLEMENTATION

A. Institutional and Implementation Arrangements

36. **The implementation agency of this project will be KWSB and a Project Implementation Unit (PIU) has been established within KWSB to manage SOP-1 and subsequent projects.** To build KWSB's long-term capacity to plan and manage major, externally financed interventions, the PIU is to consist primarily of existing, permanent KWSB staff. The PIU may thus become the core of a Planning and Investment Management Department, which the utility currently lacks. To mitigate weaknesses in certain specialized areas, KWSB will recruit selected consultants to the PIU to strengthen project preparation and implementation. A firm will be recruited to provide specialized contract management support. The PIU will report to KWSB management represented by the Managing Director. The PIU and associated consultants are expected to reach 50 percent women's participation over the project life. The PIU is expected to coordinate activities with related projects, in particular the KNIP. It may also draw on a Shared Services Unit to tap into additional expertise as needed.

37. **A Project Steering Committee is being established to provide oversight and high-level coordination.** The Steering Committee will include high level representatives of agencies involved in the Project. The Steering Committee shall, *inter alia*, 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 water and sewerage services.

Figure 3: Outline of Project Implementation Arrangements





B. Results Monitoring and Evaluation (M&E) Arrangements

38. **M&E will be an integral part of the project under the responsibility of the PIU in liaison with KWSB focal points.** Existing baseline data and M&E systems are weak, and the PIU will thus conduct its own data collection and verification. Funding for activities critical for both utility operations and M&E are included in the project budget.

39. **The PIU will provide quarterly progress reports to KWSB management.** The PIU M&E specialist will compile data necessary to monitor project implementation and to evaluate intermediate indicators. An assessment of project impacts, including a beneficiary survey, will be conducted at project closing.

C. Sustainability

40. **The Federal Government, GoS, the KMC and KWSB, all recognize Karachi's dire water supply and sanitation situation that threatens the health of residents and that increasingly constrains local, provincial, and national economic development.** Recognition of, and support for, the Project's potential benefits for the population and the economy has endured throughout preparation, despite changes in the federal government. The GoS is committed to the project, demonstrated by the establishment of a Reform Working Group, with renowned civil society water sector specialists. Moreover, the GoS has agreed to a Commitment of Cooperation, outlining a reform roadmap, and is completing the notification of a Steering Committee as well as a new, more representative Board. KWSB has demonstrated its commitment to the Project by agreeing to a substantial and challenging re-organization, and a far-reaching reform agenda, recognizing these measures will enable more sustainable and efficient services to its customers. The KMC, representing the KWSB customer base, has consistently supported the Project and provided invaluable assistance to ensure city-province political rivalries do not impede progress. A common recognition of the problem across levels of government and significant efforts by the client indicating genuine commitment to the project, provide a credible basis for its sustainability. From the perspective of financial sustainability, the measures financed under Components 1 and 2 of this project are expected to achieve full cost-recovery at KWSB, as captured in the results framework and economic and financial analysis of the project.

41. **The Project will contribute to climate change mitigation and adaptation.** Climate change and disaster screening showed that Pakistan in general, and the project area in Sindh in particular, are highly vulnerable to climate change, in particular to rising temperatures and heatwaves, urban flooding from more intense precipitation, sea-level rise and storm surges. Projected temperature increases in Pakistan are significantly higher than the global average. The Intergovernmental Panel on Climate Change projects a global average temperature increase by 2081–2100 of 3.7°C and an average increase of 4.9°C for Pakistan under an extreme scenario (Representative Concentration Pathway 8.5). This would intensify already deadly heatwaves. Over 1,200 heat-related deaths resulted from a severe heatwave in 2015, primarily in Sindh. Lack of continuous, safe drinking water is a major concern during heatwaves, and rising temperatures will increase per capita water demands. Urban flooding and sea-level rise will aggravate problems of poor drainage and inadequate sewer infrastructure in Karachi. Climate change may also increase power-outages affecting water supply reliability, and increase algal growth affecting water quality.

42. **Project investments in improving KWBS energy efficiency will contribute to climate change mitigation.** A detailed energy audit under Component 3 will inform up to US\$20 million of investments under Component 2 to modernize KWSB electrical equipment. Major investments to reduce non-revenue water significantly by rehabilitating the piped network will further increase energy efficiency by reducing leakage. All these benefits are captured in the results framework. Components 1 and 3 will strengthen



KWSB capacity, including training staff in climate change mitigation and adaptation options, and integrating climate change into a new communication strategy.

43. **Improvements to the quality and availability of drinking water will contribute to climate change adaptation.** Reducing water losses through the NRW reduction program under Component 1 and associated network maintenance under Component 2, and improving supply chlorination through investments under Component 2, will improve the ability of the population to cope with increased temperatures, heatwaves, and water scarcity, by increasing the quality and reliability of water supply and reducing dependence on groundwater. Investments in sewer rehabilitation will reduce sewer overflows and flooding and reduce urban contamination. The KWSB Masterplan update and groundwater protection assessment supported under Component 3 will consider climate change impacts on water resources and promote sustainable water use. In particular, the updating of the Masterplan is an opportunity to implement planning-related recommendations of the 2012 KWSB Climate Adaptation Study. For example, the Masterplan is expected to be informed by integrated flood models for catchments, shorelines and urban drainage; to develop a strategy for the separation of storm- and wastewater; to develop a plan for a water conservation program and so on.

IV. PROJECT APPRAISAL SUMMARY

A. Technical, Economic and Financial Analysis

Technical Analysis:

44. **The project will significantly rehabilitate water and sewer infrastructure in the KWSB service area.** The specific investments will be selected during implementation, and final technical designs are thus pending. In general, the technical designs for the interventions are expected to follow the pre-existing infrastructure that has been operated by the utility for many years, using well-established technical approaches appropriate for local conditions. From a technical perspective, the project will thus pursue an approach with only moderate risks.

45. **The detailed selection criteria for investments are in Annex 2 and are summarized here:**

- a. Alignment with Project Objectives: investments must benefit the Karachi Municipality area and support the PDO;
- b. Compliance with Relevant Guidelines and Policies: investments must comply with all social, environmental, procurement and financial management requirements of the World Bank and the governments of Sindh and Pakistan;
- c. Prioritization of Reform Agenda: Priority will be given to investments aligned with the project reform program (see Annex 4);
- d. Standardized Selection and Approval Cycle: investments will be approved according to the criteria and roadmap, this includes compliance with PRRP (see Annexes 2 and 3).

Economic and Financial Analysis (EFA):

46. **Global cost-benefit studies have demonstrated that WASH services provide good social and economic returns.** Evidence from global as well as country studies in general shows high returns on WASH spending, for example, with a global average benefit-cost ratio of 5.5 for improved sanitation and 2.0 for



improved drinking water.

47. **The SOP would help Karachi maximize potential economic returns over its 12-year planning horizon.** With a potential user base of at least 15 million and an existing installed capacity of about 3 million cubic meters per day (i.e. 650 million gallons per day), KWSB has a unique opportunity to improve operational performance and become a profitable utility providing essential services. The project's (SOP-1) EFA, outlined below, indicates positive expected returns. The EFA examined financial and economic benefits of SOP-1 over a 15-year period, using constant 2018 prices in Pakistani Rupees (PKR). The net present value (NPV) and internal rate of return (IRR) were calculated by comparing with- and without-project scenarios.

48. **The projected financial performance of the project is strong.** The project is expected to help KWSB achieve financial sustainability and full operating cost recovery through reduced NRW, improved bill collection, and introduction of wastewater tariffs (see Table 4). The NPV calculated comparing with- and without-project scenarios (using a 10 percent discount rate) is high (see Table 5). The high IRR is due to the composition of SOP-1 that includes high-yielding reform-focused activities and no-regret investments.

Table 4: Financial performance projection: With-project scenario

Year	2019	2022	2025	2028	2031	2034
Net operating income (PKR million) including currently subsidized expenditures	(6,748)	(4,455)	4,322	4,354	4,386	4,418

Table 5: Financial analysis results - with- vs. without-project

	NPV (PKR m)	IRR (%)
10% discount rate	64,489	141%

49. **The project is economically viable.** The economic analysis includes direct benefits from improved services as well as indirect health and GHG benefits. The NPV from the economic analysis (using a 10 percent discount rate) is high (see Table 6). The high IRR is due to the composition of SOP-1 that results in large direct and indirect (especially health) benefits compared to the investment costs.

Table 6: Economic analysis results - with-project vs. without-project

	NPV (PKR m)	IRR (%)
10% discount rate	65,295	187%

50. **The net emissions of the project are an estimated reduction of 415,562 tCO₂-eq over the 15-year analysis period.** On average, the project provides a net reduction in emissions of 27,704 tCO₂-eq annually. Net emission reductions are driven by improvements in energy efficiency.

B. Fiduciary

Financial Management:

51. **An assessment of KWSB's Financial Management arrangements concluded (Annex 1 Table A3) that it maintains or causes to be maintained financial management arrangements that are acceptable to the Bank, and that as part of the overall arrangements in place for implementing the project, provide reasonable assurance that proceeds of the loan are used for the purposes for which they are granted.**



Therefore the FM arrangements for the project are satisfactory for meeting the requirements of Bank Policy for Investment Project Financing effective October 1st, 2018. The assessment provides reasonable assurance that finances are used for the intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability. KWSB has a detailed chart of accounts for recording transactions that will be used for the project accounting. A unified public FM system exists at all levels of government in Pakistan. Funds from the Bank loan will be transferred to the State Bank of Pakistan (SBP) and released through the Finance Division (FD) to the Implementing Agency. Annual external FM audits will be conducted by the Department of Auditor General and submitted to the Bank by December 31 each year.

52. **Risk has been identified as Moderate during the assessment.** Key risks identified include: the need to enhance the FM capacity for smooth project implementation; enhancing the role of Internal Audit; need for documenting the Standard Operating Procedures to ensure segregation of function. To mitigate these risks, within three months of project effectiveness, an FM specialist shall be hired. Moreover, Standard Operating Procedure for FM management development and a plan to strengthen the internal audit function should be put in place.

53. **Disbursements will be report-based with advances equivalent to six months forecasted expenditure.** A segregated designated account will be established following the procedures notified in August 2013 by the Finance Division, Government of Pakistan. Detailed FM reviews will be conducted regularly to ensure that incurred expenditures are eligible.

Procurement:

54. **Procurement will follow the Bank's Procurement Regulations for IPF Borrowers for Goods, Works, Non-Consulting Services and Consulting Services (August 2018).** The project will be subject to the Bank's latest Anti-corruption Guidelines (July 2016). KWSB's routine procurement includes large works, goods and consultancy services. KWSB lacks a separate procurement and contract management section, but several officers, including three officers in the PIU, have extensive procurement experience under provincial procurement rules, as well as for donor-funded projects. Features of the provincial regulatory framework include transparency, equal opportunity, use of Standard Bidding Documents, and pre-award disclosures. Further details are provided in the Project Procurement Strategy for Development (PPSD). KWSB has not implemented a Bank-funded project in the recent past, and so is unfamiliar with Bank procurement regulations. Robust contract management will need to be introduced.

55. **Procurement will present a substantive workload.** The PIU will need to hire one procurement and contract management expert, as well as a project implementation support firm. Adequate technical capacity will be added to ensure that consultants' deliverables are aligned with the TORs. A training session was conducted by the Bank for ten KWSB staff on March 26, 2019 and a STEP account was activated on March 27, 2019. Following negotiations, and once the PIU is fully staffed, comprehensive procurement training will be provided. The PPSP has been prepared and based on market analysis, the major consultancies include eleven contracts for institutional, technical and engineering support, three works within NCB threshold, two IT packages and some goods.

C. Safeguards

Environmental Safeguards:



56. **SOP-1 has been assigned an environmental Category B rating.** This reflects the potential scale, size and intensity of environmental impacts, and is consistent with the requirements of OP 4.01 (Environmental Assessment), OP 4.04 (Natural Habitats) and OP4.11 (Physical Cultural Resources), as well as World Bank Environmental Health and Safety Guidelines.
57. **The investment plan for SOP-1 Component 2 includes water network rehabilitation, sewer network rehabilitation and provision of safe water supply to *Katchi Abadis*.** Sewer network rehabilitation could have significant and widespread adverse environmental impacts, that require strong management to avoid, minimize or mitigate. This may involve management of raw sewage to meet required emission standards and removal and disposal of large quantities of contaminated spoil material, including solid waste, where sewers are to be laid and at conveyance/collection points. Risks will be mainly during the construction, and operations and maintenance stages, and will require management of large volumes of potentially hazardous spoil material and sludge removed from drains and rivers, management of poor quality water and management of air quality. Environmental risks will require continuous management after works are commissioned, through to eventual decommissioning. The potential environmental legacy of the selected sewer networks will need to be audited and may require additional management measures to implemented as part of the rehabilitation works.
58. Water network rehabilitation impacts are expected similar or smaller, depending on the scale and location of the rehabilitation works. The extension of safe water supply to *Katchi Abadis* and efforts to improve system efficiency will have smaller adverse environmental impacts, that nonetheless will require active management.
59. **Specifically, the following environmental management approach has been agreed with the KWSB:** In compliance with OP 4.01, KWSB has prepared a project-level Environmental Management Framework (EMF) that sets out the processes, procedures and measures for environmental management during project implementation. The EMF requires a full standalone Environmental and Social Impact Assessment (ESIA), corresponding Environmental and Social Management Plan (ESMP) for all rehabilitation works and all new works under the project, and in addition, an Environmental Audit report and Management Action Plan are required for the ongoing sewer network rehabilitation works (i.e. TP1 and TP3), as part of the due diligence work required for the existing sewage treatment plants that would be used.
60. The EMF is consistent with the screening criteria in Annex 2 and 3, and requires that assessments and corresponding management plans be prepared in compliance with all applicable World Bank safeguards policies, all federal and provincial regulations and standards, and any relevant and applicable international standards, and prohibits financing of investments and preparatory studies of any kind for future studies that would be assigned an environmental risk rating of A under OP4.01 or High under ESS1 . The cost of ESMP implementation is part of the project budget, including training and other institutional strengthening. The project will ensure that all works contracts include the ESMPs and ensure the cost of ESMP implementation is identified in the Bill of Quantities.
61. **The EMF project level consultations were conducted by KWSB with representatives of all stakeholders in a workshop in Karachi on March 22, 2019.** The EMF requires that safeguards documents for the individual investments financed under this project are also prepared subject to meaningful participatory consultations in the project areas and that the documents physically disclosed locally in English and appropriate other languages as well as the World Bank website (<http://www.worldbank.org/projects>).



62. **The project will strengthen KWSB environmental management capacity under Component 1 and support strong PIU safeguards monitoring under Component 3.** While KWSB has implemented several water supply projects, it is many years since they implemented an IFI-financed project. KWSB institutional capacity needs strengthening to manage Bank safeguard requirements and to this end the KWSP will have a dedicated Environment Safeguards Specialist assigned full time to this project to help ensure the provisions in Annex 2 and the EMF, and the project as a whole are carried out successfully.

Social Safeguards:

63. **SOP-1 avoids areas with substantial social risks and includes measure to address and mitigate social risks.** No large-scale land acquisition or resettlement is anticipated in SOP-1 but limited involuntary economic displacement and temporary negative livelihood impacts may occur during construction. Civil works in densely populated urban areas are likely to negatively impact businesses and individuals during construction because of restricted access and temporary relocation. Rehabilitation works may also cause limited involuntary resettlement of temporary markets, vendors and street hawkers; OP 4.12 (Involuntary Resettlement) is therefore triggered. To avoid risks associated with the ongoing AED, a multi-level PRRP will be used to ensure exclusion from the project of any subprojects in sites affected by the AED, through use of a screening criteria/mechanism.

64. **An SMF has been prepared as the precise locations of project activities are yet to be determined.** The SMF includes: (i) a comprehensive mechanism for social screening of subprojects to determine subproject eligibility, considering interactions with the ongoing anti encroachment drive and the type of social safeguard instruments to be prepared; (ii) a RPF as an annex to the SMF; (iii) management frameworks for gender and vulnerability, labor impacts during construction (including gender-based violence (GBV) and sexual exploitation and abuse (SEA)), stakeholder engagement, and M&E; (iv) a Grievance Redress Mechanism; (v) institutional requirements and capacity enhancement measures; and (vi) other requirements. The RPF includes a two-staged mechanism for social screening of subprojects. In step 1, the screening will determine the interaction of the subproject with the anti-encroachment drive to determine the eligibility of the project. If found eligible, the screening mechanism will determine the types of safeguard instruments to be prepared. All stakeholders – including local communities, vulnerable groups, and civil society organizations – have been consulted in the drafting of the SMF, which has been reviewed by KWSB. The SMF was publicly disclosed on May 20, 2019 and consulted on with stakeholders by March 21. The final SMF and an Urdu translation of its executive summary will be disclosed on the KWSB and the World Bank websites, following clearance from the Bank. *The PRRP, including screening criteria and decision tree, is described in the project's Social Management Framework (SMF) and the Resettlement Policy Framework (RPF) which is included in the SMF in Annex 3.*

65. **Site-specific ESAs and, in case of any involuntary resettlement, RAPs, will be prepared for subprojects after precise locations and alignments have been determined.** These will include sewerage and water network systems to be rehabilitated, water supply and/or sewerage rehabilitation in three *Katchi Abadis*, and construction of new customer centers. ESAs and RAPs will be prepared in accordance with the SMF guidelines (including RPF as an annex), including stakeholder consultation, and will be reviewed, approved, and disclosed locally and on the World Bank website.

66. **Labor requirements:** No large-scale labor influx is anticipated for SOP-1, however, this will be assessed in detail during the preparation of subproject safeguard instruments. A labor management plan will be prepared if needed. The SMF emphasizes compliance with Pakistan's labor laws, and the Bank *Guidance Note on Managing the Risks of Adverse Impacts on Communities from Temporary Project Induced*



Labor Influx. No child or bonded labor will be engaged for civil works. The SMF includes (as will any ESIA's prepared during project implementation) measures to avoid and or mitigate GBV and SEA risks. The PIU will recruit a Labor Officer to train contractors, develop guidelines, assess contractual obligations, and monitor compliance on labor issues including GBV and SEA.

67. **Improve Citizen Engagement through Implementation of the Stakeholder Participation and Community Engagement Framework and the introduction of an effective GRM.** The SMF includes a Stakeholder Participation and Community Engagement Framework, which will ensure meaningful consultation and participation throughout the project with all stakeholders including project-affected people, marginalized/vulnerable beneficiary groups, civil society organizations, and government representatives. The community engagement framework is guided by six principles: communication, inclusivity, transparency and accountability, continuous improvement, resources, and engaging partners. The approach includes development of guidelines for community participation, institutionalization of community participation, undertaking Citizens Satisfaction Surveys, and training of personnel involved in public/community engagement. In line with the CoC reform roadmap, KWSB will be more responsive to customers. This will involve construction of new customer service centers, review of current grievance redress systems and procedures, and introduction of improvements, possibly including new GRM software, to better receive, respond to and track all complaints. Where possible, the project will engage with local IT firms and start-ups (including women-led firms) to work towards creative, efficient and locally appropriate solutions.

Other Safeguards Policies:

68. **OP 4.37 (Dam Safety) is triggered as Karachi's only reliable water source is from Kotri Barrage on the Indus River.** A safety assessment of the barrage is being conducted under the ongoing Sindh Barrages Improvement Project (P131324) by a panel of experts. This project will also prepare emergency preparedness and operational plans, and provide training.

69. **OP 7.50 (International Waterways) is triggered because the project involves the use of water from the Indus River – an international waterway under the policy** but it falls under the exception to the notification requirement of Paragraph 7 (a) of the Policy (minor additions or alterations to an ongoing scheme), as approved by management.

70. **Physical Cultural Resources OP/BP 4.11 is triggered due to the possibility of chance finds during rehabilitation works.** The EMF and SMF include Chance Find Procedures to address risks to any cultural or archaeological 'chance finds' during the project.

World Bank Grievance Redress:

71. Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed to address project-related concerns. Project-affected communities and individuals may submit their complaint to the WB's independent Inspection Panel, which determines whether harm occurred, or could occur, as a result of the WB's non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the WB's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the WB's corporate GRS, please visit <http://www.worldbank.org/en/projects-operations/products-and-services/grievance-redress-service>. For information on how to submit complaints to the World Bank



Inspection Panel, please visit www.inspectionpanel.org.

72. **In addition to the project-specific GRM, KWSB's existing complaints management system will be strengthened under Component 1.** KWSB's existing system receives complaints by phone, email, WhatsApp and SMS and KWSB is also in the Pakistan Citizen Portal where complaints can also be submitted. Complaint response monitoring for all these systems will be strengthened under KWSSIP. These KWSB wide GRMs will be integrated with the KWSSIP-specific GRM for subprojects to the extent possible.

D. Gender

73. **The project will address the lack of: (i) women's employment and facilities in the utility; (ii) women's representation and agency in decision making; and (iii) access to services.** An assessment during implementation will analyze conditions and constraints faced by women working at KWSB in terms of their professional opportunities, and examine limitations female customers face in their ability to access the full range of KWSB services. A gender action plan will be developed to operationalize recommendations from the assessment and from focus group discussions with women employees. The plan will address women's limited mobility and reluctance to engage with male KWSB staff because of prevalent sociocultural norms. It will help ensure that women's voices and needs inform institutional reforms, project design and implementation. The plan will support KWSB in the following interventions:

- a. Increase in the number of women employees at all levels in the utility, with a focus on new technical and managerial hires (Grade 17 and above). A rapid assessment during implementation will identify gaps in gender sensitive infrastructure in the workplace (e.g. separate toilets, child care, knowledge and implementation of sexual harassment laws) to create a work environment attractive to women recruits and existing female staff. HR trainings will incorporate gender modules and include a focus on improving recruitment of women and on sexual harassment. The PIU team is expected to achieve 50 percent participation of qualified and experienced female professionals by the end of SOP-1. (Gaps i and ii)
- b. Reduce barriers for women in accessing service providers and grievance redress. Focus Group discussions and interviews during preparation found that women are unable to reach out to service providers to register complaints. Customer centers will include women's desks staffed by women, and regular staff will be supplemented by additional all female staff in field teams so as to proactively reach out to women in low income settlements. The project will also ensure that data collected to be disaggregated by gender – for example during the project-financed customer identification survey, or the mapping of service levels in *Katchi Abadis* – in order to enable more inclusive KWSB policies and investments (Gap iii).

74. The Bank's Gender-Based Violence (GBV) Tool rates risks low. The project GRM will be gender-sensitive and will have a protocol for handling GBV complaints. All bid documents will clearly define the GBV requirements and expectations, and the contractor will develop a Code of Conduct, noting acceptable norms of behavior and sanctions for any GBV incidents. A Code of Conduct will be signed by employees working on the project sites.

V. KEY RISKS

75. **The overall risk rating for SPO-1 is *High*** because of the *High* political and governance risks, and the *Substantial* Environment and Social Risks, macroeconomic, institutional capacity, sector strategies and policies, stakeholder risks.



76. **The High and Substantial risks and proposed mitigation measures are as follows:**

- a. **Political and Governance Risks (High):** The political context for the project is complex with multiple actors at all tiers of government. The risk of political disagreements affecting project implementation is high, especially on contentious topics such as project target areas, tariff revisions, or changes related to employment at KWSB. The project preparation process has emphasized a collaborative approach between the GoS, KMC and KWSB to mitigate these risks. This is institutionalized through a Project Steering Committee and agreed reform roadmap. The Steering Committee will bring diverse political actors together and help resolve challenges. Public, government and judicial pressure is expected to help keep project focus on technical and political solutions to resolve WASH service gaps. The SOP program will incentivize collaboration and performance for future projects. At the technical level, a Reform Working Group has been appointed with renowned and independent sector specialists, which will detail the CoC agreement and oversee its implementation.
- b. **Macroeconomic Risks (Substantial):** These risks mostly stem from the recent deterioration in the macro-fiscal situation in Pakistan. The early effects are being felt through continued depreciation of the currency and hike in energy tariffs. This in the medium term will increase inflationary impacts and reduce spending power that can impact domestic demand. This will be mitigated through the economic reform program recently negotiated with the IMF. The fiscal impact will lead to delayed release of capital and recurrent budgets for project implementation and this will be mitigated by ensuring that the province prioritizes project expenditures in its annual budget and development plans. The major infrastructure development activities will be implemented during the second half of the project's life.
- c. **Sector Strategies and Policies (Substantial):** The progressive development of sector strategies and policies in line with project objectives is critical for the success of the intervention, for example with respect to the planned changes to the KWSB Act, KWSB Masterplan, and KWSB HR policy. Possible resistance to change in sector policies and strategies could directly impact achievement of project objectives. This risk will be mitigated by the project's integrative approach that comprises the high-level steering committee as well as the reform working group, with broad based stakeholder representation, including civil society, which will enable a consensus-finding process with respect to proposed changes in sector strategies or policies.
- d. **Institutional implementation Capacity and Sustainability Risks (Substantial):** While KWSB has satisfactory institutional capacity to implement the SOP overall, it has not recently implemented significant investments financed by an international financing institution, and specific project aspects go beyond KWSB's traditional focus and capacity, for example, the planned service expansion in *Katchi Abadis*. Sustainability risks are substantial in particular due to the complex political economy of Karachi on which reforms – and thus also KWSB's financial sustainability – depend. To mitigate the substantial capacity risks, the project will engage consultancy firms to support contract management, training of management personnel and staff, and improvement of KWSB administrative systems. To manage sustainability risks, the project will emphasize a consensus-oriented approach to its reform agenda.
- e. **Environmental and Social Risks (Substantial):** Environment and social risks are Substantial. Compliance with the approved EMF and SMF/RPF, preparation of subproject EAs, EMPs, SIAs and RAPs/ARPs (where required), and their satisfactory implementation, will be important to address environmental and social risks.



Environment Safeguards: The potential physical environmental impacts are not likely to be significant or widespread, however, the capacity of KWSB to apply the EMF is limited. Subproject activities are not expected to cause any long term or irreversible environmental impacts and as such the potential environmental impacts will be manageable. The project has been designed to avoid potentially high environmental risks through investment eligibility criteria built into the EMF. To mitigate any remaining environmental risk, the project will strengthen social and environmental risk management systems in KWSB through extensive technical assistance and capacity building.

Social safeguards: There are risks associated with the ongoing judiciary-led AED, which is not consistent with Bank policies, specifically the Policy on Involuntary Resettlement (OP 4.12), as there are no provisions to compensate or rehabilitate displaced persons, nor for compensation of loss of livelihood. Lack of documentation on areas that have been subject to AED activities may result in unknowingly selecting subproject sites that have been subject to AED. The extent of coverage of AED activities may result in difficulties in finding eligible subproject sites. To mitigate this risk, elaborate criteria have been built into project design, agreed with GoS, and included in the legal agreements. AED affected areas will be excluded from project financing. The PRRP contains a robust process (included in the SMF/RPF) designed to screen proposed subprojects and exclude those not meeting the screening criteria; and to build the capacity of KWSB for monitoring and management of remaining risks. Annex 3 contains details of the PRRP.

- f. **Stakeholders (Substantial):** The sector has a various set of stakeholders whose interests are often difficult to reconcile. A wide array of formal and informal organizations, private companies, NGOs, religious institutions and local government structures that can be expected to vie for influence on project decisions and contracts. The project will finance a sustained, professional communications and outreach program under Component 1. The selection of informal settlements could lead to controversy and opposition from local interest groups (e.g. current water vendors) and implementation delays. KWSB will work with local councilors and engage with residents through a revitalized *Katchi Abadi* Cell. KWSB will also establish a small local office in each of the three selected *Katchi Abadis* and a special *Katchi Abadi* counter in its service centers. Component 1 includes funding not only for strengthening KWSB's *Katchi Abadis* Cell, but also for assisting NGOs and CBOs working in *Katchi Abadis*. With respect to the anti-encroachment drive, the stakeholder engagement will strive to ensure through awareness raising and sensitization that local communities are able to distinguish between AED and WB subprojects. This will help local communities to understand that WB is not supporting or collaborating with the AED. The project's interventions will be supplemented by the Bank's Karachi Platform's communication and outreach.



VI. RESULTS FRAMEWORK AND MONITORING

Results Framework

COUNTRY: Pakistan

Karachi Water and Sewerage Services Improvement Project (KWSSIP)

Project Development Objectives(s)

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

Project Development Objective Indicators

Indicator Name	DLI	Baseline	End Target
To improve access to safe water services in the project area			
Persons provided with access to drinking water uncontaminated by fecal coliforms under the project (Number)		0.00	2,000,000.00
To increase KWSB's financial and operational performance.			
Coverage of Operation & Maintenance Costs (Percentage)		59.00	100.00
KWSB Act amended to increase KWSB's financial and operational autonomy (Yes/No)		No	Yes

Intermediate Results Indicators by Components

Indicator Name	DLI	Baseline	End Target
Operational & Enabling Environment Reform			



Indicator Name	DLI	Baseline	End Target
New customer service centers opened that are adequately staffed including a separate desk for women (Number)		0.00	6.00
Wastewater Tariff Re-established (Yes/No)		No	Yes
Percentage of grievances redressed within stipulated time (Percentage)		25.00	75.00
Percentage of females of all newly recruited staff grade 16 and below (Percentage)		1.44	20.00
Percentage of females of all newly recruited staff grade 17 or above (Percentage)		0.86	30.00
Informal settlements provided with improved water and sewer services by KWSB under the project (Number)		0.00	3.00
Asset Management Program Implemented (Yes/No)		No	Yes
KWSB Master Plan Updated (Yes/No)		No	Yes
Collected revenues of KWSB (Text)		PKR 8,446 million	PKR 16,500 million
Infrastructure Investments			
Piped household water connections affected by rehabilitation works undertaken under the project (Number)		0.00	400,000.00
Number of in-network chlorination units operational under the project (Number)		0.00	12.00
Kilometers of sewerage network rehabilitated (Text)		0 Kilometers	160 kilometers
Bulk accounts metered (Percentage)		40.00	100.00
Improvement in Energy Efficiency (Text)		368,714,889 kilowatt hours	To be established
Non Revenue Water Reduction (Cubic meters/year)		0.00	32,000,000.00



Monitoring & Evaluation Plan: PDO Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
Persons provided with access to drinking water uncontaminated by fecal coliforms under the project	Number of persons receiving water in compliance with WHO standards on fecal coliform contamination of water under the project (measured prior to private storage).	Annually	KWSB Laboratory	Test of KWSB provided water for total and fecal coliforms (E.Coli). Water to be measured prior to private storage facilities, which may also contaminate water but are out of the direct influence of KWSB.	KWSB
Coverage of Operation & Maintenance Costs	Total annual collected revenue of KWSB divided by KWSB annual operating costs.	Annual	KWSB Financial Department	Collections from sale of KWSB services. Costs defined as variable operational and maintenance costs of Water and Sewerage Sales.	KWSB / Auditor.
KWSB Act amended to increase KWSB's financial and operational autonomy	Changes in the KWSB Act as outlined in the Commitment of Cooperation and to be detailed by the appointed Reform Working Group. This is expected to include (i) the right of the MD/CEO to recruit staff without	Annual	Laws of the Province of Sindh	Review of amended KWSB act by the World Bank.	KWSB.



	interference from the KWSB Board of Directors or the Government, (ii) changing the service rules following principles of diversity, accountability and transparency, (iii) establishing tariff setting rules based on affordability and O&M cost recovery, and (vi) allowing the KWSB Board of Directors to approve tariffs at its sole discretion based on the new tariff setting rules and public consultations.				
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Monitoring & Evaluation Plan: Intermediate Results Indicators

Indicator Name	Definition/Description	Frequency	Datasource	Methodology for Data Collection	Responsibility for Data Collection
New customer service centers opened that are adequately staffed including a separate desk for women	New service centers opened and fully staffed and equipped	Annually	Supervision Engineer Reports	Field inspections by supervisory engineer, including test submissions of service requests.	KWSB
Wastewater Tariff Re-established	Prior wastewater tariff re-established and actively charged.	Annually	KWSB Notification and relevant financial	KWSB Notification and relevant financial statements to confirm re-establishment and	KWSB



			statements.	collection of wastewater tariff.	
Percentage of grievances redressed within stipulated time	Percentage of grievances received at customer care centers or through online / telephone complaint mechanism that have been responded to within KWSB stipulated time frames. Baseline to be confirmed through baseline audit of existing grievance system.	Annual	KWSB GRM system	Extract of data from KWSB GRM system	KWSB
Percentage of females of all newly recruited staff grade 16 and below	Percentage of females of all newly recruited staff grade 16 and below	Annual	KWSB HR Reporting	KWSB HR Reporting	KWSB
Percentage of females of all newly recruited staff grade 17 or above	Percentage of females of all newly recruited staff grade 17 or above	Annual	KWSB HR Reports	KWSB HR Reporting	KWSB
Informal settlements provided with improved water and sewer services by KWSB under the project	Informal settlements with project financed improvements in water quality (compliance with WHO standards on fecal coliform contamination) and water reliability (at least daily for two hours with 1.5 bar pressure), and a functioning sewer system.	Annual	Project Documentation and Supervisory Engineer Reports	KWSB's laboratory to test water quality. Reliability will be measured with pressure monitors.	KWSB
Asset Management Program Implemented	A plan developed and implemented for the management of KWSB	Annual	KWSB Reporting	Asset Management Program Completion Report	KWSB



	infrastructure assets that combines multi-disciplinary management techniques (including technical and financial) over the life cycle of the assets to provide the necessary levels of service in the most cost effective manner				
KWSB Master Plan Updated	KWSB Masterplan updated	Annual	Published KWSB Masterplan	Review of published KWSB Masterplan	KWSB
Collected revenues of KWSB	Collected Revenues of KWSB during the past fiscal year.	Annual	KWSB Financial Reporting	Revenue collection of KWSB from sales of services (water, sewer) and other related income.	KWSB
Piped household water connections affected by rehabilitation works undertaken under the project	Household connections benefiting from access to drinking water uncontaminated by fecal coliforms under the project (in network chlorination), and connections in District Metered Areas receiving 24 hour water supply under the project	Annually	KWSB Laboratory results, supervisory engineer reports, and pressure monitoring in DMAs	KWSB Laboratory results on water quality (total coliforms and E. Coli) and supervisory engineer reports and pressure monitor data.	KWSB
Number of in-network chlorination units operational under the project	Number of in-network chlorination units installed and functional to improve	Annually	Supervisory Engineer Reports	Field inspections by supervisory engineer	KWSB



	the quality of KWSB supplied water				
Kilometers of sewerage network rehabilitated	Kilometers of sewerage network rehabilitated	Annually	Supervisory engineer reports	Field inspections by supervisory engineer	KWSB
Bulk accounts metered	Meters installed for bulk customers and read regularly	Annually	Supervisory Engineer Reports	Annual update of the customer identification survey for bulk customers	KWSB
Improvement in Energy Efficiency	Kilowatt Hours per year of energy use in existing KWSB system. Target to be established by Energy Audit in first year of implementation.	Annual	Energy Audit and subsequently reports of supervision consultancy firms	Measurement of energy use in existing KWSB infrastructure.	KWSB
Non Revenue Water Reduction	Reduction of NRW by 32,000,000 cubic meters per year by project end (equivalent to three percent of current production capacity of 650 million gallons per day)	Annual	KWSB reporting (production, bulk meters, billing)	Measured reductions in technical losses and billing of previously unbilled commercial losses will be counted towards the overall reduction target.	KWSB





ANNEX 1: Implementation Arrangements and Support Plan

COUNTRY: Pakistan

Karachi Water and Sewerage Services Improvement Project (KWSSIP)

A. Project Institutional and Implementation Arrangements

1. **The implementation agency of this project will be GoS through KWSB and a Project Implementation Unit (PIU) has been established within KWSB to manage SOP-1 and subsequent projects.** To build KWSB's long-term capacity to plan and manage major, externally financed interventions, the PIU is to consist of existing, permanent KWSB staff with the exception of a limited number of specialist roles (e.g. procurement). The PIU may thus become the core of a Planning and Investment Management Department, which the utility currently lacks. The PIU consists of two departments: one dedicated to implementing the reform program and studies (Component 1 and 3), and one in charge of developing and implementing capital investments (Component 2). This arrangement aims to ensure sufficient implementation capacity for the reform components, as pressure in past projects to progress infrastructure components has reduced the attention on reforms, ultimately undermining the value of infrastructure investments. KWSB will recruit selected consultants to the PIU to strengthen project implementation. A firm will be recruited to provide specialized contract management support. The PIU will report to KWSB management represented by the Managing Director. The PIU and associated consultants are expected to reach 50 percent women's participation over the project life. The PIU is expected to coordinate activities with related projects, in particular the proposed CLICK.

2. **A Project Steering Committee is being established to provide oversight and high-level coordination.** The Steering Committee is expected to include high level representatives of all agencies involved in the Project Committee. The Steering Committee shall, inter alia, 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 Steering Committee will have clearly defined responsibilities to minimize overlaps, mitigate potential disagreements with KWSB, and will be empowered to evolve its membership after the initial appointment in case of changing circumstances.

3. Pursuant to a Project Co-Lenders' Agreement with AIIB, the World Bank will supervise the Project and administer both the IBRD and the AIIB loans in accordance with the World Bank's policies and procedures. The co-lender agreement will be signed by the World Bank and the Asian Infrastructure Investment Bank (AIIB) in accordance with the 2016 Co-Financing Framework Agreement between World Bank and the AIIB (as amended in 2018). The AIIB and the World Bank will jointly finance the project in equal shares, with all components financed jointly by the partners. The GoS is expected to finance the project with US\$1 million in the first year, and then provide the remaining US\$19 million in counterpart funding in equal shares over the duration of the project through its annual budgeting process.

B. Financial Management and Disbursements

4. **The FM assessment finds that subject to the recommended mitigation measures and action plan**



being implemented in time, the project has a risk rating, before mitigation measures, of Moderate and has met the minimum FM requirement in accordance with the requirements of Bank Policy for Investment Project Financing effective October 1st, 2018. The FM arrangements provide reasonable assurance that the financing proceeds will be used for the intended purposes, with due attention to the principles of economy, efficiency, effectiveness, transparency, and accountability to support implementation and achieve the desired results. Further, this objective will be sustained by ensuring that strong financial management systems are maintained for the project throughout its duration. Detailed Financial Management reviews will also be carried out regularly, either within the proposed supervision plan or a more frequent schedule if needed, to ensure that expenditures incurred by the project remain eligible.

5. **Disbursements will be report-based with advance equivalent to six months forecast of expected payments.** A segregated designated account will be established following the procedures notified in August 2013 by the Finance Division, Government of Pakistan. Eligible expenditures will comprise: works, consulting and non-consulting services, goods, workshops and training, and incremental operating costs incurred for implementing the project.

6. **Risk Assessment and Mitigation:** The following are necessary features of a strong financial management system:

- an adequate number and mix of skilled and experienced staff in the accounting and internal audit units;
- the internal control system should ensure the conduct of an orderly and efficient payment and procurement process, and proper recording and safeguarding of assets and resources;
- the accounting system should support the project's requests for funding and meet its reporting obligations to fund providers including GoS, IBRD and other stakeholders;
- an independent, qualified auditor should be appointed to review the project's financial statements and internal controls.

7. **The table below identifies the key risks and required mitigation measures:**

Table A1: Risk Assessment and Mitigation

Risk	Risk Rating	Risk Mitigating Measures Incorporated into Project Design	Residual Risk Rating
Country Level	Substantial		Substantial
Entity Level	Substantial	PIU has been established to oversee project progress. KWSB as implementing agency lacks detailed knowledge of World Bank requirements. FM Specialist will be hired to support the finance function of KWSB.	Moderate
Project Level	Substantial	As above	Moderate
Control Risk			
Budgeting	Moderate	Adequate allocations and regular monitoring of utilization of funds. A detailed Project Plan with quarterly breakup of activities and estimated funds utilization will be prepared no later than one (1) month	Low



		after the Effective Date . The Bank will use the plan as a benchmark for periodic performance review. Annual budgets will be based on quarterly work plan and cash plan.	
Accounting	Moderate	FMS will be hired from open market to assist the finance function of KWSB. Activity wise expenditure will be recorded using the existing chart of accounts.	Moderate
Internal Control	Moderate	Project team will follow the KWSB rules and regulations along with the operations manual for conduct of activities. Internal Audit function of KWSB will conduct IA on regular bases.	Moderate
Fund Flow	Moderate	FM standard operating procedures to clearly define the funds flow arrangements and service standards for release of funds.	Low
Financial Reporting	Moderate	FM trainings to be imparted to staff to provide hand-holding and on-field technical support.	Moderate
Auditing	Low	AGP Carries out audit of the project implemented by government departments as per International Organisation of Supreme Audit Institutions (INTOSAI) Standards which are acceptable. Private chartered Accountant firm also conducts audit of KWSB on yearly basis.	Low

8. The overall FM residual risk rating for this project is assessed as **Moderate**.

(i) Proposed FM Arrangements

9. **FM Staffing.** The Managing Director of KWSB in consultation with the Director Finance will assign a focal person at managerial level in the Finance Department with the overall responsibility of the FM arrangement in the project. The FM manager will be supported by the Financial Management Specialist (FMS) hired under the project. The Deputy Managing Director (DMD) Finance may allocate additional staff as per project requirements. A Projects Implementation Unit (PIU) will be created to manage the proposed KWSSI Project. Specialized staff will be hired by the PIU to manage project functions including safeguards, financial and procurement management. The PIU will report and coordinate directly with KWSB management through an overall PIU director.

10. **Budgeting & Planning.** The project is part of the Annual Development Program and is reflected in the Sindh government's budget. The annual budget for the project will be prepared by the budget section which will be responsible for the preparation of budgets for all the subprojects based on planned activities, identified in the procurement plan and will be timely communicated to the Finance Manager for the allocation of resources for counterpart funding and the annual budget of the project. The Budget Section will seek input from all relevant departments and Project Director for the preparation of the budget. The Finance Manager will submit the budget to the DMD Finance. The DMD Finance will review the annual budget before consolidation into the annual budget of KWSB.



11. **Accounting & Financial Reporting.** The project accounts will be maintained on cash basis as per KWSB's existing accounting policies and procedures and using existing Chart of Accounts which are comprehensive. Payment vouchers will be prepared for each transaction and the relevant accounting codes, disbursement category and project component will be mentioned on the payment vouchers.
12. For each quarter, KWSB will prepare an Interim Unaudited Financial Report (IUFR) that will be furnished to the Bank within 45 days of the close of the quarter. IUFR will report funds receipt and utilization during the quarter according to project components and disbursement categories. In addition, KWSB shall prepare annual project financial statements and submit audited project financial statements within six months of close of financial year.
13. **Internal controls.** Project documents describes standard processes, minimum documentation and approval limits for processing different types of payments and the same will be used for the project. Internal control activities at project will at minimum include:
- a. *Authorization and Approvals:* Financial authority to approve payments shall vest with the Project Director as delegated by Managing Director, KWSB.
 - b. *Verifications:* For each payment the FM section shall check that the payment claim is appropriately supported by documents, follows approved policies and has been approved by competent authority.
 - c. *Segregation of Duties:* FM function will be independent of procurement and administration. Project will have dual bank signatories, one of those will be Project Director.
 - d. *Physical Controls:* fixed assets register will be maintained for assets procured from loan proceeds and all assets will be tagged and periodically verified.
 - e. *Periodic Reporting:* Project will prepare Interim Financial Reports and Progress Reports on quarterly basis and Financial Statements on annual basis as per Cash basis (International Public Sector Accounting Standards). Interim Unaudited Financial Reports will include budget vs. actual statement.
 - f. *Internal Audit:* Internal Audit function of Board will conduct internal audit of the project activities on annual basis.
14. **Fund Flow Arrangements.** The project will mainly use the Advance and Direct Payment method of disbursements. For receipt of funds, the implementing agency will open and operate a segregated Designated Account (DA) in US Dollars at the National Bank of Pakistan. The DA will be operated in accordance with the provisions of "Revised Accounting Procedure for Revolving Fund Account (Foreign Aid Assignment Account)" dated August 02, 2013 issued by the Finance Division.
15. Disbursements will be report based and the project will mainly use the advance method of disbursement where the funds will be front-loaded into DA based on 6 months cash forecast. Initial advance into DA will be provided by the Bank on the basis of projections for the first 6 months. Subsequent advances will be based on forecast for the following quarter and the balance available with KWSB as reported in the Interim Unaudited Financial Reports (IUFR) prepared on quarterly basis. The expenditure incurred during a semester against advance will also be documented in the Bank's system on the basis of IUFR. Further details regarding disbursements are provided in the Disbursement and Financial Information Letter. At the end of the project, if any unspent funds are lying with the implementing agency, the same will be refunded to the World Bank. In addition to advance method, other methods of disbursement which



include, direct payment and reimbursement will be used as and when needed.

16. **Auditing.** Project financial statement will be audited by Auditor General of Pakistan through Director General Sindh. Audited Financial statements would be submitted to the Bank within 6 months of the close of each financial year.

Table A2: Auditing

<i>Audit Report Type</i>	<i>Due Date</i>
Audited Financial Statements for Financial Year ended June 30 each year	Dec 31, same year.

17. **Supervision Plan.** Annually, two field supervision missions will review the financial management arrangements at the PIU. Reports of internal auditor, external auditor as well as project's supervision reports would be the primary source of information about the financial management arrangements at KWSB.

18. **Agreed Actions: The following actions have been agreed to address the outstanding FM issues :**

Table A3: Agreed FM Mitigation Actions

No	Agreed action	Completed by
1	Appointment and placement of FM Specialist as per ToRs agreed with the Bank	Three months of effectiveness
2.	Preparation and approval of Standard Operating Procedures for Financial Management	No later than one (1) months after the Effective Date
3.	Preparation of Plan to strengthen internal audit	Three months of effectiveness
4.	Quarterly Interim Financial Reports (IFRs), including cash forecasts for two quarters in a format agreed with the Bank will be prepared for disbursement of funds and monitoring by the Bank.	These reports will be submitted to the Bank within forty-five (45) days of the end of each semester.
5.	The audited financial statements, prepared in compliance with INTOSAI Standards, will be submitted to the Bank within six months after the close of the fiscal year ending June 30.	December 31, six months after the close of each fiscal year.

C. Procurement

19. The PPSD provides the details of the capacity assessments, market analysis, SWOT analysis, risks and mitigations measures, which form the basis of the procurement plan. KWSB conducts procurements as a core business component, with defined delegation of authority, approval procedures and defined regulatory framework. However, there is a need to make these processes efficient with identified service standards. Robust contract management is an area requiring attention. The project has so far identified 15 consultancy contracts (US \$2.5 million to 0.5 million), 3 works contract (US \$20 million to 5 million) , one supply and install contract (US \$20 million), one IT procurement (US \$2 million) and one goods contract US



\$10 million). Almost all consultancies shall be awarded in the first 18 months, and works would commence in the second year. This pace requires readiness of market as well robust capacity of the PIU. A Project Implementation Unit (PIU) is established within KWSB. The PIU will consist of two departments, one dedicated to implementing the reform program (component 1 and the studies under component 3), and one in charge of developing and implementing the capital investment framework (component 2). This organizational structure seeks to safeguard sufficient implementation capacity for the reform component as in past projects pressure to focus on infrastructure components has led to reduced attention to reform components, which ultimately undermines the value of the infrastructure investments. KWSB will recruit individual consultants to the PIU to supplement project preparation and implementation capacity. Consultancy firm(s) will be recruited to provide specialized contract management support, with one focusing on water and sewer infrastructure, including the investments in *Katchi Abadis*, and the other on coordinating soft project components. The PIU will report to KWSB Management represented by the Managing Director KWSB. The PIU will hire one procurement and contract management staff at the project office. Procurement risk of the project is identified as Moderate. A summarized risk identification and mitigation measures table is provided below:

Table A4: Procurement Risks and Mitigation Measures

Risk Area	Description of Mitigation	Risk Owner	Timeline
Efficiency of decision making	Decision making for procurement and contract award devolved to the PD. Arrangements to be documented in the PPSD	GoS /MD KWSB	Before any procurement commences. PIU has already been notified
Realistic cost estimates	Consulting firms are required to prepare estimated cost based on the market rates.	PIU	Continuous
Participation of bidders: Some potential bidders may shy away from participation given the perception of delays in payments and completion.	Potential bidders/ firms will be called in for an awareness session regarding the Bank procurement procedures and contracts. the Bank may also participate in the session	PD PIU	Before publishing SPNs
Contract management competency	Added procurement and technical staff at PIU, project implantation support firm to be hired	PD PIU DUPSP/PIU	Before any procurement commences
Awareness of Bank's Procurement Framework	Training to relevant PIU staff	WB	One session done on March 26. Follow up as soon as staff is hired.



Summary of identified procurements is as follows:

SN	Ref No	Activity	Est cost USD m	Procurement Approach	Risk	Review Type
Component 1						
1	1a & 1b	Design of and HR plan and trainings to KWSB staff, Software and hardware of HR system	1.2	Consultancy QCBS	Substantial	Prior
2	2a,b	Design and impl. of communication and customer relation strategy programs	0.2	Consultancy QCBS	Moderate	Post
3	2c	Construction of six service centers	0.75	Works NCB	Low	Post
4	2b	Design and Superv. Firm for above	0.05	Consultancy CQS	Low	Post
5	3a	Development of a GIS	1	IT contract	Moderate	Post
6	3b	Design and Implementation of an Asset Management Program	0.4	Consultancy QCBS	Moderate	Post
7	4a & 4b	Customer survey, tariff review, revised billing system	0.75	Consultancy QCBS	Moderate	Post
8	5a & 5b	Design of NRW program and metering system	1.65	Consultancy QCBS	Substantial	Prior
9	6a & 6b	Strategy for Katchi abadi cell and gender action program	0.5	Consultancy QCBS	Moderate	Prior
10	7a	Monitoring industrial discharge into sewerage and storm water; Drafting of indirect (industrial) discharge regulations into the sewerage; Priority sewer lines condition survey and rehabilitation design (incl. trenchless)	0.4	Consultancy QCBS	Moderate	Post
11	8	Study on FM best practices	0.1	Consultancy CQS	Low	Post
Component 2						
12	1	Rehabilitating water supply and/or sewerage in three	5	Works NCB	Low	Post



		low income communities				
13	2	Priority sewer network rehabilitation	22	Works NCB	Moderate	Prior
14	3	Priority Water Network Rehabilitation including meters & DMAs to reduce NRW	20	Works NCB	Moderate	Prior
15	4	Reducing energy consumption	20	Supply & install ICB	Moderate	Prior
16	5	Sewage Suction and Jetting Trucks	10	Goods ICB	Moderate	Prior
Component 3						
17	1	Preparing specific safeguard documents for SOP 2	1.5	Consultancy QCBS	Moderate	Prior
18	2, 3	Project Management Consultant; Design & Tender Documents and supervision for SOP-1	4.9	Consultancy QCBS	Substantial	Prior
19	4	Conduct Energy Audit	0.5	Consultancy QCBS	Low	Post
20	5, 6	PPP Options Study for NRW Reduction; Options Study and/or transaction advice for PPP operation and investment for desalination and/or wastewater reuse	1.0	Consultancy QCBS	Substantial	Prior
21	7	Rapid Groundwater Protection Assessment	0.5	Consultancy QCBS	Moderate	Post
22	8	Updating of KWSB's Masterplan	4.0	Consultancy QCBS	Moderate	Prior
23	9	Feasibility & Tender Documents for selected investments under SOP 2	1.5	Consultancy QCBS	Substantial	Prior
24		PIU staff for FM; procurement and contract management; technical support; social env; communications	2	Individual Consultants	Moderate	Post
		(Front End Fee)	(0.1)			

D. Implementation Support Strategy and Resource Requirements

20. Bank support will prioritize procurement processes to ensure equipment and key consultancies



are procured without delay, and that infrastructure investments under the selection criteria are carried out in due time and to the highest quality standards, a critical condition for the project to stay on track.

21. Once infrastructure works and key studies commence, the World Bank's implementation support will focus on monitoring construction processes, contract management, safeguards, disbursements, and effectiveness of capacity building and technical assistance activities. The Bank team will include staff and consultants, complemented with specialized expertise as required. As an ongoing concern, particular attention will be paid to the following aspects:

- a. **Safeguards:** Enforcing safeguards requirements will be a particular concern in light of the high risk and low capacity, and sensitive developments with respect to the ongoing anti-encroachment drive. The Bank safeguards team will provide implementation support for (i) safeguards requirements through regular supervision missions, including visits to the project sites; (ii) review of grievances submitted through the grievance redress mechanism, and not resolved directly; (iii) review of environmental monitoring reports and following up on any safeguards issues that may arise during project implementation with the relevant government authorities; (iv) provision of safeguard's training to the PIU and other relevant stakeholders, as needed. The environmental and social specialist will pay specific attention to the identified risk and mitigation measures and will regularly report on safeguard compliance to the task team leader and management, bringing to attention any issues in a timely manner.
- b. **Procurement and technical support:** The Bank will provide implementation support for reviewing procurement documents, including technical specifications, and providing timely feedback and 'no objection'; monitoring procurement progress against the procurement plan developed by the PIU; moreover, the Bank will provide procurement training on Bank guidelines and processes to the PIU as needed. During the regular implementation support missions, the procurement plans will be updated at least once each year (or more often as required to reflect the actual project implementation needs) and post-procurement reviews will be carried out regularly.
- c. **Financial Management (FM):** The Bank team will provide implementation support for reviewing the project's FM system, including but not limited to accounting, reporting, and internal controls. In particular, the FM supervision will review quarterly progress and financial audits. The Bank's project team will closely monitor FM activities to identify in advance potential delays in the preparation of the financial and audit reports and undertake corrective measures.



ANNEX 2: Project (SOP-1) Investment Selection Criteria

The selection criteria outlined in this section apply to and will guide the selection of infrastructure investments in SOP-1 of this SOP, and are the following:

A. General Criteria

1. Selected infrastructure investments must be within Sindh Province, Pakistan and benefit the area of Karachi Municipality;
2. Selected investments must directly improve water supply, access to safely managed sanitation and/or the financial sustainability of KWSB or be otherwise in line with the project development objective;
3. Selected investments which may *indirectly* lead to improvements in water supply, access to safely managed sanitation and/or the financial sustainability of KWSB may be eligible if the linkages with such improvements are convincingly demonstrated;
4. Selected investments must follow all social-, environmental-, procurement- and financial management requirements of the World Bank and the Government of Pakistan and GoS, and obtain all required environmental and regulatory clearances;
5. Selected investments must comply with the set of criteria defined in the KWSSIP Project Risk Reducing Procedure (KWSSIP-RRP) as outlined in Annex 3 of this document, and in detail in the Social Management Framework; Furthermore, investments and preparatory studies of any kind for investments that would either be risk rated EA Category A under Environmental Assessment OP4.01 or High under Environmental and Social Standards 1 (ESS1), will NOT be eligible for financing under this project (i.e. SOP1).
6. Investment will not be prepared for, or take place in, areas where the standards and conditions of the Bank's operational policy on involuntary resettlement (OP 4.12), and/or Environmental and Social Standard 5 (ESS5 of the Bank's Environmental and Social Framework (ESF)) on land acquisition, restrictions on land use, and involuntary resettlement cannot be ensured. OP 4.12 and ESS5, among other stipulations, require compensation and (if applicable) rehabilitation of affected people including persons without land title, squatters, vendors, hawkers etc.
7. *Ceteris paribus*, priority shall be given to infrastructure investments that align with the reform program of Component 1 of SOP-1;
8. Cost effectiveness and cost efficiency shall be key criteria for selected investments. *Ceteris paribus*, interventions with higher expected return shall be given priority.
9. Selected investments shall not adversely change the quality or quantity of water flows to other riparian(s), and will not be adversely affected by the other riparian states possible water use;

B. Appraisal Criteria and Standards of Preparation

10. A detailed Project Implementation Plan must be prepared for each selected investment with realistic timelines for each stage of preparation and implementation;



11. Adequate consideration is to be given to operations and maintenance costs and arrangements to ensure investments are sustainable from a financial and institutional point of view;

12. Where possible, selected investments should use local labor and include suitable provisions for improving the working conditions of local workers;

C. Selection and Approval Cycle

13. Stage 1 - Annual Planning Meeting: An annual planning meeting will be organized by the Project Implementation Unit with participation of KWSB management, the Project Steering Committee and other relevant stakeholders. At this meeting, the PIU will update stakeholders on project progress and present a draft action plan with a proposed long-list of investments to be undertaken in the next planning period.

14. Any proposed investments are to comply with the General and Appraisal Criteria outlined above. Taking into account feedback received at the meeting, the PIU will then submit a finalized action plan to the World Bank for comments, review and no objection.

15. Stage 2 – Preparation and Evaluation of Detailed Project Reports: The PIU will prepare Detailed Project Reports for investments contained in the approved action plan. This will involve compiling feasibility reports with detailed engineering designs, cost projections and the environment and social assessments as needed in line with the Environment & Social Management framework of the project.

16. The PIU with support of KWSB will conduct consultations with the local community on all aspects of the proposed investment(s), while making available all relevant information to the public. Evidence of consultations and community agreement are to be integrated into the DPR.

17. Finalized DPRs will be submitted to KWSB management for approval, and subsequently to the World Bank for review and consent.

18. Stage 3 – Bid Documents and Bidding: The Project Implementation Unit will be responsible for managing the tendering processes associated with approved DPRs in line with World Bank procurement regulations and financial management rules.

19. Stage 4 – Construction Supervision, Quality Assurance, Monitoring and Evaluation: The PIU would be responsible for putting in place arrangements for supervision of all contracts. All civil and mechanical works investments would require comprehensive on-site construction supervision, in accordance with international best practice.

20. If required, the PIUs may procure and manage supervision consultants to address any capacity gap for effective construction supervision. Based on quarterly monitoring reports, the Project Steering Committee will also help monitor the implementation of investments.



ANNEX 3: KWSSIP Project Risk Reduction Procedure (KWSSIP-PRRP)

1. This PRRP includes a set of screening criteria for the selection, design and implementation of subprojects to be financed by the Bank. Each subproject will first be assessed to determine if it is located in an area affected by AED. The assessment will also determine if and the extent to which surrounding areas of the proposed subproject were also affected by AED. Only subprojects whose construction sites plus associated zones of impact are located in areas that have not been impacted by the AED will be eligible for financing. Zones of impact for different typologies of subprojects will be determined, on a case by case basis, following procedures outlined in the project's SMF / RPF. These screening criteria are summarized below as a step-wise process and are described in detail in the project's SMF and RPF.
 - a. Step 1: KWSB has prepared a long list of subprojects for renewal, rehabilitation, and replacement of the sewerage networks in Karachi and will prepare the long list for water supply network rehabilitation during early project implementation. These lists of subprojects will be matched with the lists of areas where the AED activities have taken place in Karachi – available with the Commissioner Karachi Division - to identify if any of the subprojects lie in any of these areas. This 'matching' will enable the current AED status of each subproject to be identified. Only subprojects with no AED will be eligible for Bank financing and their preparation will continue in accordance with safeguards frameworks and other Bank policies.
 - b. Step 2: While KWSSIP will ensure exclusion of areas where AED has already happened in the past (under Step 1), there may be unforeseen cases in which government agencies need to carry out AED activities, under Supreme Court orders, in KWSSIP subproject areas while construction is underway. In order to address such unforeseen cases, KWSB will develop a working arrangement with the Commissioner Karachi Division (the office tasked by the GoS to co-ordinate AED activities in Karachi) to ensure compliance with the KWSSIP RPF during subproject construction.
 - c. Step 3: KWSB will prepare a screening report for each subproject- including evidence of no AED in the subproject area; photographic record and baseline information documentation for each subproject; letter of agreement with the Commissioner Karachi Division – and share it with the third-party monitor for verification. The verified report will be submitted to the Bank for clearance and no objection.
2. All subprojects proposed for financing will be reviewed and approved by the Bank for safeguards requirements (including a review of compliance with the screening criteria) before KWSB can commence any civil works on the subproject.
3. In addition to the screening mechanism and the Bank's prior review requirements described above, the following additional measures are included in the KWSSIP PRRP to promote effective implementation of subprojects to be financed under the project, in accordance to the Bank land acquisition and resettlement policies.
 - a. Public disclosure and dissemination of information about subproject sites proposed for financing, to allow any potentially affected persons to submit grievances.
 - b. Support to coordination mechanisms by the proposed Bank financed CLICK project, at the GoS level, for monitoring the implementation of the AED.



- c. A communication campaign designed on the basis of an agreed stakeholder engagement strategy, to raise awareness of the scope and impacts of the project.
 - d. Third party monitoring, reporting to the Bank, to confirm that subproject sites being proposed for the project have not been subjected to AED activities, and to monitor progress of subproject implementation (including compliance with KWSSIP-PRRP and with safeguards instruments).
 - e. A multi-level Grievance Redress Mechanism for the project and for all services provided by KWSB, as described in SMF and RPF.
 - f. Extensive capacity building for KWSB on social and environmental safeguards management, investment planning, citizen engagement and access to information.
4. Management of social issues under KWSSIP will also benefit from technical assistance being provided under the proposed Bank financed CLICK to formally recognize, regulate and register the street economy and mobile vendors across the city, including digital platform for registration of mobile vendors, as well as additional support for a city-wide approach of addressing resettlement and rehabilitation issues.



ANNEX 4: Draft Attachment to the Commitment of Cooperation (Reform Roadmap)

Strategy to Improve Service Delivery and Financial Viability of the Karachi Water and Sewerage Board

By 2021

Service Delivery:

- Water demand and supply studies completed that cover the next 5, 10 and 20 years.
- Policy developed, implemented and monitored to outsource the Water Hydrants of Karachi.
- Minimum effluent standards and a monitoring system are established in consultation with GoS for discharging effluent into its sewerage network.
- Katchi Abadi Cell to improve services to the poor established and fully functional.
- All customer service requests and complaints are resolved with 30 days.
- A water loss reduction programme introduced to plug the leakages and stem non-revenue water restricted to 40 percent or less

Institutional Development

- A market-based Chief Executive Officer appointed by the Government for a term of 4 years to run KWSB as a large business on corporate pattern, within three months of signing of COC.
- Amendments made to the KWSB Act to increase its operational and financial autonomy.
- Re-composition of the Board of Directors to better represent its customers, introduce technocrats of relevance and modernize its functions and responsibilities.
- KWSB Directors appointed in the key areas of Finance, Information and Technology, Engineering, Human Resources, Legal Affairs, Customer Service and Planning.
- Human Resource Strategy in place that emphasizes diversity, accountability and transparency.
- Percentage of female employees newly recruited significantly increased.

Financial Viability

- KWSB shall charge every customer a rationale, equitable and affordable tariff for all its services.
- Federal, provincial and local government customers will be treated exactly the same as every other customer with regard to service priority, billing and collection policies.
- Metered customers shall be charged a volumetric tariff based on modern meter technology and monthly billing.
- Based on a cost of service analysis, separate water and wastewater charges shall be established and KWSB shall introduce separate cost accounting for water supply and wastewater.
- A qualified external audit firm appointed to prepare an annual audit and management letter. The external audit firm shall be changed every four years. The annual audit report from the external audit firm shall be available to public.
- Investment financing cell established within the KWSB Planning Department to develop and implement a financing strategy with partners and reflecting the overall KSWB budget.
- GoS (with or without assistance from international finance institutions) shall finance 100 percent of all large capital improvement projects for KWSB.



- Efforts shall be made to incentivize the recovery of long-standing payables from bulk and retail customers. A dispute resolution unit shall be established, equipped with legal assistance.
- An asset management study shall be conducted to acquire the position, valuation and administrative status of movable and immovable assets of KWSB. Where ever needed, transfer of titles and acquisition of ownership shall be initiated from KMC, KDA and other government departments.

Private Sector Participation

- The KWSB MD shall develop a detailed O&M outsourcing strategy covering a five-year period, which will then be submitted to the KWSB Board of Directors for approval.
- KWSB will pursue private sector financing where possible for selected infrastructure. All infrastructure investment will be subject to rigorous upfront study that takes into account the comparative advantage, the economic efficiency and long-term debt implications.
- When required, and as circumstances permit, the GoS will provide guarantees to promote private sector investments in KWSB's infrastructure assets.

By 2025

Service Delivery:

- At least 60 percent of wastewater collected shall be safely treated and disposed of.
- All KWSB customers will be connected to the formal sewerage network if they are not more than 10 meters away from the sewer network.
- At least 15 percent of KWSB's annual capital investment program dedicated to expanding the sewage collection and treatment systems.

Institutional Development

- Legal framework strengthened (utility and resource regulation, monitoring and compliance, consumer protection and redress).
- Percentage of female employees in management positions significantly increased.
- KWSB to become a paperless organization, entirely relying on smart communication and IT technologies.

Financial Viability

- KWSB to cover from its own revenues 100 percent of operation and maintenance (O&M) costs, with a minimum of 5 percent of depreciated asset value used as the maintenance amount.
- GoS shall finance 90 of all capital improvement projects, with KWSB supplying 10 percent.
- 100 percent of illegal connections will be regularized where legally possible and, if they cannot be regularized, disconnected.
- The KWSB Managing Director proposes the water and sewer tariffs to the KWSB Board of Directors at least every two years. The KWSB Board of Directors may approve the proposed tariffs at its sole discretion.
- Strategic subsidy in the form of lifeline tariff slab shall be created for the lowest category of service users.



Private Sector:

- Private sector out-sourcing strategy operational and bi-annually reviewed and, if appropriate, revised.
- A KWSB Board approved strategy is in place to promote and enable the private sector provision of potable water and/or water for industrial use for KWSB.

By 2030:

Service Delivery:

- Water supply service (house connections, water ATMs etc.) available everywhere in KWSB's service area, including Katchi Abadis.
- All customers have Automatic Meter Read technology meters.
- At least 95 percent of all customers receive a bill every month, and customer receivables system wide are below 60 days.
- Non-revenue water (commercial plus physical losses) does not exceed 25 percent system wide.

Institutional Development

- At least 10 percent of employees are female.

Financial Viability

- KWSB shall cover 100 percent of O&M costs, plus 100 percent coverage for debts incurred after March 31, 2019.
- GoS shall 100 percent finance, on a grant basis, projects costing over PKR 500 million. Projects below PKR500 million to be financed 100 percent by KWSB.
- A cost-effective energy savings program developed and implemented.

Private Sector

- Private sector contracts in place for provision of potable water and/or water for industrial use for KWSB with a combined value of at least PKR 1 billion.



ANNEX 5: Investment Plan – All Proposed Projects under the Series of Projects

Project 1 (SOP-1)		US\$m
Component 1 - Reform in Karachi Water and Sewerage Board		7
1	Institutional Reforms and Capacity Building in HR	
1a	Design and provide Technical Assistance and Training to KWSB	0.5
1b	Design and Implementation of an HR reform program	0.2
1c	Upgrading of HR System including Software & Hardware	0.5
2	Communication Strategy and Capacity Building in Development	
2a	Design and Implementation of a Communication Program	0.2
2b	Develop & implement customer relation strategy/training; construction of 6 service centers	0.8
3	GIS and Capacity Building in Asset Management	
3a	Implementation of a GIS system	1.0
3b	Design and Implementation of an Asset Management Program	0.4
4	Revenue Improvement and Customer Care	
4a	Conduct Customer Identification and Tariff Basis Survey	0.5
4b	Improve billing and collection system including tariff study	0.25
5	NRW Reduction and Metering best practices	
5a	Design and Implementation of a NRW Control Program	1.4
5b	Design and Implementation of a Meter Maintenance Program	0.25
6	Social Sector Policy and Informal Settlements (<i>Katchi Abadis</i>)	
6a	Strategy for and Strengthening of the <i>Katchi Abadis</i> Cell and <i>Katchi Abadi</i> NGOs/CBOs	0.4
6b	Implementation Support for the Gender Action Plan	0.1
7	Sewerage Improvement Program	
7a	Monitoring of Industrial Discharge into the Sewerage and Stormwater System	0.1
	Drafting of indirect (industrial) discharge regulations into the sewerage	0.1
7b	Priority sewer lines condition survey and rehabilitation design (incl. trenchless)	0.2
8	Study on Financial Management best practices	0.1
Component 2 - Securing Sustainable Water Supply & Sewerage		77.0
1	Rehabilitating water supply and/or sewerage in three low income communities	5
2	Priority sewer network rehabilitation	22
3	Priority Water Network Rehabilitation including O&M equipment, meters and DMAs to reduce	20
4	Reducing energy consumption	20
5	Sewage Suction and Jetting Trucks	10
Component 3 - Project Management & Studies		16
1	Preparing specific safeguard documents for Project 2	1.5
2	Contract Management Consultant	1.5
3	Feasibility, Design & Tender Documents for SOP-1	3.4
4	Conduct Energy Audit	0.5
5	PPP Options Study for NRW Reduction	0.5
6	Options Study/transaction advice for PPP & investment for desal. and/or wastewater reuse	0.5
7	Rapid Groundwater Protection Assessment	0.5
8	Updating of KWSB's Masterplan	4.0
9	Feasibility, Design & Tender Documents for Project 2	1.5
10	Project Management Cost for KWSB	2
11	Front End Fee	0.1
Total Project 1 (SOP-1)		100.0



Proposed Project 2 (SOP-2)		US\$m
Component 1 - Reform Karachi Water and Sewerage Board		20.0
(to be detailed prior to approval of Project 2 based on progress of prior projects)		
Component 2 - Securing Sustainable Water Supply & Sewerage		460.0
1	Malir basin wastewater interceptors and treatment plant	150.0
3	Rehabilitation of all 20 Wastewater Pumping Stations	20.0
4	Improve water supply and sewerage in additional low income communities (<i>Katchi Abadis</i>)	30.0
5	Priority Sewer Network Rehabilitation & Extension	20.0
6	Priority Water Network Rehabilitation incl. meters & DMAs to reduce NRW	50.0
7	Reducing Energy Consumption	25.0
8	K4 Augmentation and downstream works (Part 1)	160.0
9	Rehabilitation and Extensions of workshops & offices incl. NRW and <i>Katchi Abadi</i> Cell	5.0
Component 3 - Project Management & Studies		20.0
Total Proposed Project 2 (SOP-2)		500.0

Proposed Project 3 (SOP-3)		US\$m
Component 1 - Reform Karachi Water and Sewerage Board		30.0
(to be detailed prior to approval based on progress of prior projects)		
Component 2 - Securing Sustainable Water Supply & Sewerage		460.0
1	Improve water supply in additional low income communities (<i>Katchi Abadis</i>)	70.0
2	Priority Sewer Network Rehabilitation and Extension	65.0
3	Priority Water Network Rehabilitation incl. meters & DMAs to reduce NRW	85.0
4	Viability Gap financing for PPP in desalination, wastewater reuse or other field	40.0
5	S IV Phase 1 (Wastewater collection and treatment)	200.0
Component 3 - Project Management & Studies		10.0
Total Proposed Project 3 (SOP-3)		500.0

Proposed Project 4 (SOP-4)		US\$m
Component 1 - Reform Karachi Water and Sewerage Board		5.0
(to be detailed prior to approval based on progress of prior projects)		
Component 2 - Securing Sustainable Water Supply & Sewerage		490.0
1	Improve water supply in additional low income communities (<i>Katchi Abadis</i>)	155.0
2	Sewer Network Rehabilitation	125.0
3	S IV Phase 2 (Additional Wastewater collection and treatment capacity)	80.0
4	Priority Water Network Rehabilitation including meters & DMAs to reduce NRW	130.0
Component 3 - Project Management & Studies		5.0
Total Proposed Project 4 (SOP-4)		500.0

Grand Total – Proposed Series of Projects		1,600
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