

December 2020

Karachi Water & Sewerage Services Improvement Project [KWSSIP]

Project Implementation Unit, Karachi Water & Sewerage Board

Room No. 10, Block-C, 9th Mile KW&SB Office, Shahra-e-Faisal, Karachi

Request for Expression of Interest

For

Environment & Social Assessment Studies of

Group - 1 for SOP 2 of KWSSIP

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**REQUEST FOR EXPRESSION OF INTEREST**

(CONSULTING SERVICES – FIRMS SELECTION)

**Islamic Republic of Pakistan**

**Karachi Water and Sewerage Services Improvement Project-2 (KWSSIP-2)**

**AIIB Special Fund (AIIB – SF) Grant No. S0404A**

**Assignment Title:** Environmental and Social Assessment Studies of Group 01 for SOP-II KWSSIP

**Reference No**. (As per Procurement Plan): 1

The Karachi Water and Sewerage Board (KWSB) has applied for financing as Grant in Aid from the Asian Infrastructure Investment Bank (AIIB) toward the cost of the consulting services for the preparation of sub-projects of KWSSIP-2.

The consulting services (“the Services”) for the Group 01 Sub-Projects for KWSSIP-2 consist of Environmental and Social Assessment Studies for (i) Additional Bulk Water Supply Investment ; (ii) K-IV Augmentation (Connection of K-IV Treatment Plants to the existing networks) and ES audit of the ongoing associated K-IV project; and (iii) update of the existing Environmental and Social Frameworks for the proposed KWSSIP-2. The Services include level of effort of relevant professionals, with implementation period of **06 months**, expected start date shall not be later than March, 2021, ensuring full consistency with the TORs attached to this REOI.

The detailed Terms of Reference (TOR) for the assignment can be obtained from the address given below during the office hours, i.e. 0900 – 1700 Hours on working days, Monday to Friday or downloaded from KW&SB website.

The KWSB now invites eligible consulting firms (“Consultants”) to indicate their interest in providing the Services. Interested Consultants should provide information demonstrating that they have the required qualifications and relevant experience to perform the Services.

The shortlisting criteria i.e. experience in providing services in the areas of Environmental and Social Assessment Studies for three (03) infrastructure development works undertaken during the last ten (10) years, as detailed in the Section 03 (Shortlisting Criteria) of this document.

The attention of interested Consultants is drawn to Section II, paragraph 4.4, and paragraph 4.9 of the AIIB’s “Procurement Instructions for Recipients” June 2, 2016, setting forth the AIIB’s policy on conflict of interest and eligibility.

Consultants may associate with other firms to enhance their qualifications, but should indicate clearly whether the association is in the form of a joint venture and/or a sub-consultancy. In the case of a joint venture, all the partners in the joint venture shall be jointly and severally liable for the entire contract, if selected.

A Consultant will be selected in accordance with the Quality and Cost Based Selection method set out in the Procurement Instructions for Recipients.

Further information can be obtained at the address below during office hours 0900 – 1700 Hours on working days, Monday to Friday

Expressions of interest must be delivered in a written form to the address below (in person, or by mail) latest by **20th January 2021.**

**The Project Director**

**Project Implementation Unit (PIU)**

**Karachi Water & Sewerage Services Improvement Project (KWSSIP)**

**Karachi Water & Sewerage Board**

**Room No. 10, Block-C, 9th Mile KW&SB Office,**

**Shahra-e-Faisal, Karachi.**

**Tel No. +92-21-99245134**

# Instructions to Consultants

## **General Instructions**

While expressing the interest, consultants have to consider the following:

1. The Project Implementation Unit (PIU) invites eligible consulting firms/ Joint Venture(s) with specific and proven competence and experience to indicate their interest in providing the services. Eligible firm(s) / JV’s should submit Expression of Interest (EOI) in English language along with the required relevant complete details of the qualification and experience requested in Item 3 – Shortlisting Criteria.
2. Interested consulting firm(s) / Joint Venture(s) must provide information indicating that they are qualified to perform above services (e.g. description of similar assignments, value of previous assignments, experience under similar conditions, availability of appropriate professionals etc.).
3. Association of consultants can either be in the form of joint venture (JV) or a sub-consultancy. Therefore, the consultant submitting their Expression of Interest in association should clearly mention whether the association is a Joint Venture or Sub-consultancy. The experience of all the firms in the JV will be considered for evaluation and each partner must meet the shortlisting criteria as defined under Section 3. In case of Sub consultancy, the experience of the sub-consultant will not be considered in qualification.
4. The maximum numbers of entities allowed in joint venture are three [03].
5. An applicant can express only one interest either as a single entity or in joint venture, however, a sub-consultant can associate with more than one applicant.
6. A firm that applied either as single entity or JV member cannot be a sub-consultant to another entity or JV. In such a case, all the applications in which the firm is involved shall be disqualified and rejected. While selecting a sub-consultant, applicants are advised to check this requirement.
7. A consulting firm / Joint Venture will be shortlisted in accordance with AIIB Procurement Policy, January 2016, and Interim Operational Directive: Procurement Instructions for Recipients, June 2016.
8. The attention of interested Consultants is drawn to Section II, paragraphs, 4.4 and 4.4.2 of the AIIB’s Interim Operational Directives on Procurement Instruction for Recipient (PIR) June 2016, setting forth the AIIB’s policy on conflict of interest that can be seen at <https://www.aiib.org/cms/en/search/index.html?query=procurement%20instructitons%20for%20recipient>
9. it is expected that the interested firm(s)/ joint venture(s) will have expertise in the areas of environmental and social management, all related public and donor-funded development projects / affairs of the city of Karachi in these areas including but not limited to management frameworks of these, dealing with relevant public sector governing authorities and coordination with, roles of civil societies, impacts of new projects, environmental and social safeguards, resettlement action plans, collection of data, field surveys, public campaigning, public hearings, specific problems of urban informal settlements [katchi abadi], land use patterns, village setup and system in rural areas etc.
10. The consultant(s) should ensure that the submitted information is correct. An EOI containing significant omissions / errors shall not be considered. A firm / JV qualifying on the grounds of misrepresentation of facts shall be disqualified at any stage even after the award of contract and the sanctions / penalties may also be imposed on the firm as per AIIB / World Bank’s rules and regulations.
11. The information need to be presented in a clear and comprehensive manner free of ambiguities. The copies of documents attached should be clean and legible.
12. If the EOI consists of more than one volume, the applicant must clearly number the volumes constituting the EOI and include a table of contents for each volume. **All documents should be securely bound**.
13. Consultant selection as a result of this REOI shall be in accordance with the Quality and Cost Based Selection Method. Both, local and international consulting firms can express interest.
14. Once your team is shortlisted and invited for submission of the Proposal, it is not permissible to transfer the invitation to any other firm, such as Consultant’s parent or sister companies, subsidiaries and affiliates.
15. The procuring agency will reject a Proposal if the Consultant drops a JV member without the Client’s prior consent, which is given only in exceptional circumstances, such as debarment of the JV partner or occurrence of Force Majeure.
16. Submit one original and two copies of EOI in hard format and soft copy of complete EOI on USB device. Documents related to qualification / generated docs have to be either in Word and Excel. Only attachments like certificates, company registration and financial documents are acceptable in scanned / pdf form.

# Information Needed for EOI

## Basic Information – Part A

1. Name of the Company, Phone, Fax, E-mail address, postal address of the head office and name of Contact Person. In case of JV, provide information of all JV members.
2. Certificate of Registration of the firm as Legal Entity. In case of JV, provide information of all JV members.
3. Firm(s)/ joint venture(s) name, address, copy of the Registration Certificate with relevant professional bodies of the concerned Government, supported by latest/ updated renewal, Country of Operations (if the firm is registered and operating in several countries). Memorandum/ Article of Association/ Partnership Deed or Joint Venture Agreement Or a letter of intent to form a joint venture (as applicable).
4. National Tax Number of the firm/joint venture;
5. List of other works similar to indicated in General and Specific Experience above completed in last ten (10) years or in progress of the firm / joint venture members indicating the following:
6. Name of the Project;
7. Name and address of the Client;
8. Value of the contract in US$.
9. Start and Completion Date
10. Whether worked as Consultant, Sub-consultant or JV Member. In case of JV Member indicate the share in the JV.
11. If worked as sub-consultant or JV member, provide details / component of works performed.
12. Any additional document(s) to support relevant experience of firm(s)/ Joint Venture(s);
13. List of the litigation/arbitration during last ten (10) years, if any, in which the company has been involved and the current status.
14. An Affidavit from firm / all the participating partners of the association / JV confirming that: (a) applicant firm has never been blacklisted by any International, Government / Semi Government Organization and (b) All the information provided by the applicant firm in this EOI is correct.

## Basic Information – Part B

**Expression of Interest (EOI) Consulting Firms**

Table 2.1: EOI for Assignment

|  |  |
| --- | --- |
| Assignment Name |  |
| Project Name |  |
| Project Country |  |

**I. Consulting Firm Information**

Table 2.2: Firm Information

|  |  |
| --- | --- |
| Date: | Country of Incorporation: |
| Consultant Name: | Acronym: |
| EOI Submission Authorized by: | Position |

**Associations (Joint Venture or Sub-consultancy)**

Table 2.3: Information of Association

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Consultant | Acronym | Country of  Incorporation1 | Joint Venture  (JV) or Sub- consultant | EOI  Submission  Authorized By | Position |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |
|  |  |  |  |  |  |

**II. Assignment Specific Qualifications and Experience**

**A. Project References**

Please select three post relevant projects completed in last 10 years to demonstrate the firm’s technical qualifications and geographical experience where similar studies related to environmental and social safeguard assessment have been performed for the MDB’s financed projects for water supply systems which include bulk transmission, water trunk mains and interconnection provisions. The completion date of each project must be within last 10 years and the total construction value of each shall not be less than US$10 million. The services must include relevant environmental and social assessment studies. Minor studies for small scale projects will not be considered. The completion certificates shall be attached as per details below.

Table 2.4: Most Relevant Projects during Last 10 Years

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| SN | Project | Period | Client | Country | Firm |
| 1 |  |  |  |  |  |
| 2 |  |  |  |  |  |
| 3 |  |  |  |  |  |
| 4 |  |  |  |  |  |
| 5 |  |  |  |  |  |

Project Summary

**Project 1 of**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ● Project Name |  | | | | | |
| ● Name of Client |  | | | | | |
| ● Country |  | | | Project location  Country | |  |
| ● Participation |  | As lead firm  As associate firm | | | | |
| ● Value of Services |  | | (US$) | | | |
| ● Source of Financing |  | | | | | |
| • Consultancy Services | | | | | | |
| (i) No. of staff |  | | | | | |
| (ii) No. of person months |  | | | | | |
| • Length of Consultancy Assignment | | | | | | |
| ● Start Date |  | | | | (dd/mm/yyyy) | |
| ● Scheduled date of Completion |  | | | | (dd/mm/yyyy) | |
| ● Actual Date of Completion |  | | | | (dd/mm/yyyy) | |
| ● Continuous / Intermittent |  | | | |  | |
| • Name of Associate Firms (if any) | | | | | | |
|  | | | | | | |
| • No. of Person-Months of Professional Staff Provided by Associated Firm(s) | | | | | | |
| • Name of Senior Staff (Project Director/Coordinator, Team Leader) Involved and Functions  Performed | | | | | | |
|  | | | | | | |
| • Detailed Narrative Description of the Project with total cost | | | | | | |
|  | | | | | | |
| • Detailed Description of the Actual Services Provided by your Firm | | | | | | |
|  | | | | | | |

(Please insert more tables as necessary)

**III. Comments on Terms of Reference**

|  |
| --- |
|  |

**VI. EOI Attachments**

Table 2.5: Attachments

|  |  |
| --- | --- |
| SN | Description |
| 1 | Certificate of Incorporation of the lead member |
| 2 | Certificate of Incorporation of the JV member (for each member) |
| 3 | Certificate of Incorporation of the Sub-Consultant (for each sub-consultant) |
| 4 | Letter of Association/letter of intent to form a JV/Association |
| 5 |  |

(Please insert more rows as necessary)

**VI. Eligibility Declaration**

We, the undersigned, certify to the best of our knowledge and belief [Eligibility refers to AIIB’s Procurement Policy, Clause 5.8 and 7.0 on Prohibited Practice and Integrity].

Table 2.6: Eligibility Declarations

|  |  |  | Indicate  Yes / No |
| --- | --- | --- | --- |
| We have read the advertisement, including the terms of reference (TOR), for this assignment. | | |  |
| Neither the consulting firm nor its JV member or sub-consultant or any of its experts prepared the TOR for this activity. | | |  |
| We confirm that the project references submitted as part of this EOI accurately reflect the experience of the specified firm/consortium. | | |  |
| We further confirm that, if any of our experts is engaged to prepare the TOR for any ensuing assignment resulting from our work product under this assignment, our firm, JV member or sub-consultant, and the expert(s) will be disqualified from short-listing and participation in the assignment. | | |  |
| All consulting entities and experts proposed in this EOI are eligible to participate in AIIB-funded, supported and administered activities. | | |  |
| The lead entity and JV member or sub-consultant are NOT currently sanctioned by AIIB or other MDBs. Neither the consulting firm nor the JV member or sub- consultant has ever been convicted of an integrity-related offense or crime related to theft, corruption, fraud, collusion or coercion. | | |  |
| We understand that it is our obligation to notify AIIB should any member of the consortium become ineligible to work with AIIB or other MDBs or be convicted of an integrity-related offense or crime as described above. | | |  |
| JV member or sub-consultant, including all proposed experts named in this EOI, confirmed their interest in this activity in writing. | | |  |
| JV member or sub-consultant, including all proposed experts named in this EOI, authorized us in writing to represent them in expressing interest in this activity. | | |  |
| None of the proposed consortiums are subsidiaries of and/or dependent on the Executing Agency or the Implementing Agency or individuals related to them. | | |  |
| We understand that any misrepresentations that knowingly or recklessly mislead or attempt to mislead may lead to the automatic rejection of the proposal or cancellation of the contract, if awarded, and may result in further remedial action, in accordance with AIIB’s Prohibited Practice. | | |  |

# Shortlisting Criteria

## Shortlisting Criteria

The shortlisting criteria is as under:

Table 3.1: Shortlisting Criteria

| **No.** | **Criterion** |
| --- | --- |
|  | **General Experience**  Provide services in the areas of Environmental and Social Assessment Studies for three (03) infrastructure development works undertaken during the last ten (10) years.  List the project name, name of the Client, location and type of facility / development for that works were performed.  Single Entity: Must Meet.  Joint Venture:  The Lead Member must have done two [02] projects  Other Members: must have done minimum one [01] project of above nature |
|  | **Specific Experience of Bulk Water Supply and Augmentation (Large Diameter Interconnection) Works:**   1. Experience of at least three (03) Bulk water supply schemes including canals, conduits, and large diameter pipeline network completed in the last ten (10) years for Environmental and Social Assessment studies of contracts value equivalent to US$ 0.2 million, are required. 2. All above consultancy assignments should have been for the projects having construction value of US$ 10 million, are required.   Single Entity / Firm: Must Meet  Joint Venture:   1. The lead member must have done at least two [02] Bulk water supply project including canals, conduits, and large diameter pipeline network of value as defined above.   Other members: must have done either one [01] Bulk water supply or one [01] Large diameter network project.  The projects listed here and in Item 2 above:   * Must be a completed project with a completion certificate issued by the Client. Attach the Completion Certificate and letter of award indicating the contract value for each reference project. * If the work(s) have been performed in a joint venture, indicate share in the JV to work out the number of projects required for the qualification of this assignment. |
|  | Overall **Managerial Capacity** (Core Managerial and Technical Staff) |

Appendices

|  |
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| [Appendix A. Terms Of Reference](#_Toc56524253) |

**Appendix-A**

# **Terms of Reference for Environmental and Social Assessment Studies of Group-01 for SOP-2 of KWSSIP**

1. **BACKGROUND**

Karachi, a megacity, is the economic capital of Pakistan. According to the recently released provisional 2017 National Census data, the population of Karachi is reported to be 14.9 million, however this is largely contested, and final results are still pending.[[1]](#footnote-1) It is Pakistan’s main seaport and international trade hub and contributes about 15 percent to the national Gross Domestic Product (GDP).[[2]](#footnote-2)

However, Karachi is also among the world’s least livable cities. The city ranks in the bottom ten cities (out of 140) in the 2017 Global Livability Index,[[3]](#footnote-3) performing poorly in the dimensions of livability, health, environment, safety and education. Green and open spaces, as a share of the city’s land area, are declining and high-density luxury apartments are perceived as displacing public spaces for the middle and lower classes. The city is also very dense, with more than 20,000 persons per square km. From 2001 to 2013, the urban footprint expanded by more than a quarter with signs of sprawl, without the accompanying investments in services and infrastructure. Migration is the primary growth factor, and the city is characterized by pockets of ethnically homogenous zones within a heterogeneous city.

Karachi, like all megacities, has grown so quickly that it struggles to deliver basic infrastructure services, including potable water and wastewater collection and treatment. The water and sewerage utility, Karachi Water and Sewerage Board (KWSB), is no longer equipped or empowered to deal with the challenging reality on the ground. There is a huge unmet demand for water (550 million gallons per day ‑ MGD current capacity versus an estimated demand of 1200 MGD); a high non-revenue water percentage (50-60 percent); very large financial losses (estimated at PKR 569 million/US$5.4 million per month); and significant outstanding arrears (estimated at PRK 32 billion/US$305 million). Most of KWSB’s 1.1 million customers get water through the piped network on an irregular basis, and some just 2-4 hours every other day. There is currently no sewerage treatment, as the city’s sewage treatment facilities are dilapidated and not working, resulting in an estimated 475 MG of sewage/day being discharged into the Arabian Sea via the storm water network. The utility has not had significant capital investment for more than a decade, and the last investment project financed by an international financing institution (IFI) dates to the mid-1990s. Most of its infrastructure is worn out and operating far below its rated capacity.

1. **PROJECT OVERVIEW**

The proposed Project’s Development objectives are to: (i) raise KWSB’s operational capacity to deliver to all of its customers safe and reliable water service on a sustainable and predictable basis; (ii) restore KWSB’s operation to financial stability; and (iii) establish an enabling environment for future private sector investments in water supply and wastewater treatment.

The World Bank (WB) and Asian Infrastructure Investment Bank (AIIB) have joined hands with the Government of Sindh under programmatic engagement spread over a period of 12 years. The investment program (Karachi Water and Sewerage Services Improvement Project **-** KWSSIP) is divided into four parts called Series of Projects (SOPs). Under the WB and AIIB investments, KWSB’s performance will be improved to make it a turn-around utility through the development of technical and customer response capacity to meet its mandate of reliably delivering water and wastewater services to one of the world’s most populous metropolitan areas. WB and AIIB have approved loans for KWSSIP-SOP 1. This assignment is for the environmental and social assessment studies for KWSSIP- SOP 2.

1. **PROJECT COMPONENTS AND SAFEGUARD WORKS**

The proposed KWSSIP has three inter-related components: (i) Reform; (ii) Securing Sustainable Water Supply and Sewerage; and (iii) Project Management and Studies. All selected project activities will support the following five goals identified as priority for KWSB: (i) 24/7 safe and reliable water supply for all customers; (ii) majority of wastewater is collected and safely disposed; (iii) KWSB’s operations become financially sustainable; (iv) KWSB operates under a modern and effective governance framework; and (v) KWSB improves the enabling environment for private sector investments. ***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.

During the preparation of KWSSIP- SOP1, an Environmental Management Framework (EMF) and a Social Management Framework (SMF) including a Resettlement Policy Framework (RPF) have been prepared for KWSSIP- SOP1, in accordance with WB’s Operational Policies.

1. **INVESTMENT PLAN FOR SOP-2**

The project activities of SOP-2 (or KWSSIP-2) under its component 2 related to infrastructure investments have been grouped in line with the project components as descried below.

KWSB will implement subprojects (works) for infrastructure in their mandate, as per screening criteria and other procedures. KWSB is responsible for design and implementation of subprojects in compliance with the World Bank’s policies on social and environmental management. 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 Anti Encroachment Drive (AED), and ensure compliance with the World Bank’s Environmental and Social Framework (ESF) and relevant Environmental and Social Standards, specifically the Environmental and Social Standards -5 (ESS5) (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement).

The activities listed below have been included under Component-2 of the SOP-2. The proposed infrastructure investment plan for KWSSIP-2 addresses three interlinked structural problems in Karachi’s water and sewerage system – the overall supply shortfall; the low water quality; and the lack of sewage treatment capacity. The environmental and social assessment studies have been divided into two groups. The KWSSIP-2 activities are grouped accordingly in the table below. The present ToRs are for the Group 1 studies.

| **Table-1: KWSSIP-2 Subprojects under Component 2** | | |
| --- | --- | --- |
| **Component 2 - Securing Sustainable Water Supply and Sewerage Services** | | |
| Group 1 | 1 | Additional Bulk Water Supply Investment |
| 2 | K-IV Augmentation (Connection of K-IV Treatment plants to the network) |
| Group 2 | 3 | Improved Water Supply and Sewerage in Additional Low Income Communities (*KatchiAbadis*) |
| 4 | Priority Sewer Network Rehabilitation and Extension and Rehabilitation of Wastewater Pumping Stations |
| 5 | Priority Water Network Rehabilitation and Extension incl. Meters and DMAs to Reduce NRW and additional chlorination facilities to improve the water quality |
| 6 | Reducing Energy Consumption |
| 7 | Malir basin wastewater interceptors and treatment plant (S-3 Phase 2) |
| 8 | Rehabilitation of Existing and Construction of New Filtration Plants to assure treatment of all water currently produced (Additional treatment capacity for new sources would be part of component 1). |

A brief description of proposed subprojects, for which safeguard studies will be carried out under the present ToRs, is provided below (further details would be available once the detailed design of these subprojects have been completed).

* + 1. **Additional Bulk Water Supply Investments:**

Six additional potential bulk water investment options have been pre-identified. The proposed works will involve construction of conduits, inverted syphons, pumping stations, pressure or rising main(s) and interconnection works at different withdrawal points at the existing bulk water supply system of KWSB. KWSB currently has a sanctioned quota to withdraw 650 MGD from the Indus River, but is effectively only using 515 MDG of this allocation. The remaining quota (additional 135 MGD) could therefore be made available through the proposed investment. The project will determine the supply of water, i.e. Keenjhar Lake and/or Haleji Lake. An ESIA or an ESMP and a Resettlement Plan (RP) (if required) would need to be prepared for these works, in accordance with the screening criteria defined in the EMF and SMF. In addition, a separate ecological assessment for the wetlands will be needed for impacts on downstream-Indus.

* + 1. **K-IV Augmentation:**

This sub-project will involve the interconnection works of the government financed K-IV Treatment plants to the existing water network, to significantly improve water supply by up to 260 MGD. The Subproject may have large water pipelines to be laid at the identified different route(s) to feed the three different water service reservoirs, which will improve the reliability and quality of water supply to the targeted areas of Karachi. The final design of these works will have to be deferred until the revised routing of the K-IV Phase 1 works is known. An ESIA or an ESMP and a RP (if required) would need to be prepared for these works, in accordance with the screening criteria defined in the EMF and SMF. In addition, an Environmental and Social Review of on-going K-IV project (government project) will also be carried out.

1. **RELEVANT LAWS AND POLICIES**

The proposed subprojects and their assessments to be carried out under the present ToRs will have to comply with the national/provincial regulatory requirements relevant for environmental and social aspects as well as WB’s ESF. In case of any conflict or gap, more stringent of the two requirements/standards will be followed.

1. **Environmental and Social Assessment Studies and their Grouping**

In order to address the potentially adverse environmental and social impacts of the subprojects described under Section 4 and in compliance with the local laws and regulations as well as WB environmental and social standards, comprehensive assessments will need to be carried out and the associated environmental and social management documents will need to be prepared. These studies and documents have been divided in two groups primarily for ease and better flexibility during the procurement of these services; **the present ToRs cover the Group 1 studies**. These groups are listed below.

**Group 1 (covered under the present ToRs)**

1. A Stakeholder Engagement Plan (SEP) for the entire SOP-2
2. Labor Management Procedures (LMP) for the entire SOP-2
3. Revising, Updating and upgrading the Environmental Management Framework (EMF) that was prepared for SOP-1, and making it applicable to SOP-2
4. Revising, Updating and upgrading the Social Management Framework (SMF) including a Resettlement Framework (RF) that was prepared for SOP-1, and making it applicable to SOP-2
5. Environmental and Social Impact Assessment (ESIA)/Environmental and Social Management Plan (ESMP) and Resettlement Plan (RP) (if required) for K-IV Augmentation
6. ESIA/ESMP and RP (if required) for Bulk Water Supply Systems
7. Environmental and Social Review of on-going K-IV project
8. Ecological assessment for the wetlands/Ramsar sites for downstream-Indus impacts.

**Group 2 (not covered under the present ToRs)**

1. ESIA/ESMP and RP (if required) for Malir Basin Wastewater Interceptors and Treatment Plant (S-3, Phase 2)
2. ESIA/ESMP and RP (if required) for Improved Water Supply and Sewerage in Low Income Communities
3. ESIA/ESMP and RP (if required) for PrioritySewer Network Rehabilitation and Extension and Rehabilitation of Wastewater Pumping Stations, Priority Water Network Rehabilitation and Extension, and Rehabilitation of Existing and Construction of New Filtration Plants
4. ESIA/ESMP and RP (if required) for Reducing Energy Consumption.
5. **OBJECTIVES OF THESE TERMS OF REFERENCE**

The objective of the assignment under these ToRs is to ensure that the subprojects under SOP-2 are prepared and implemented in an environmentally and socially sustainable manner and with effective stakeholder involvement, and also compliant with the relevant laws and policies of the Islamic Republic of Pakistan, the Provincial Government of Sindh, the City of Karachi as well as the applicable WB ESSs.

1. **DETAILED SCOPE OF WORK**
   1. **Preparation of Inception Report**

The Consultant shall use the inception period to familiarize with the project details, in particular the subprojects covered under the present ToRs: Bulk Water Supply Systems, and K-IV Augmentation. The Consultant shall be cognizant of engineering studies being prepared in parallel. The Consultant should also recognize that due care and diligent planning during the inception stage helps in improving the timing and quality of the various reports to be prepared under the assignment.

During the inception period the Consultant shall (a) conduct a desk review of the project information to appreciate the context within which the various E&S studies should be carried-out; (b) identify the sources of secondary information on the project and on the project area; (c) conduct reconnaissance field visit(s) to understand environment and social settings, identify parameters for E&S screening, design and developing formats for field and design survey; (d) prepare preliminary estimation of impacts on private and community properties including impacts on non-titleholders; (e) carry out identification of stakeholders, plan consultations with stakeholders and likely project affected parties; and (e) study the various available surveys, techniques, models and software in order to determine the most appropriate options in the context of the project.

The Consultant will review and identify national/provincial regulations as well as WB ESS relevant to the present assignment. The Consultant will also identify any material differences between these two sets of requirements (in case of any conflict, the more stringent requirement would prevail).

The Consultant after appreciation of consultancy assignment scope and site conditions shall fine- tune the methodology (ies) that shall be used for carrying out various E&S studies for proposed interventions under **Group-1**.

As an outcome of this task, the Consultant will prepare the Inception Report of the entire assignment covered under the present ToRs. The Inception Report will provide among other methodologies and work plans of the studies to be carried out, their time schedule, and a summary of the applicable national/provincial regulation and WB ESF.

The Inception Report will also summarize the applicable national/provincial regulations and also identify their inconsistency or lack of clarity and aspects relevant to address subproject’s E&S risks and impacts; and deviations with respect to requirements described in WB ESSs. The Inception Report shall suggest actions to address E&S risks and impacts that may be implemented during project preparation and implementation. The Consultant shall assist the KWSB in preparing application and supplementary reports for obtaining requisite clearances or permits.

The Consultant shall interact with the Feasibility and Design Consultant to determine how the E&S studies / activities fit into the overall project preparation/ project cycle; and to appropriately plan the timing of the deliverables of the E&S studies. The Consultant will also interact with the Consultant for E&S studies under Group-2.

* 1. **UNDERTAKING ENVIRONMENTAL and SOCIAL SCREENING AND SCOPING FOR IDENTIFIED SUBPROJECTS UNDER SOP-2, Group-1**

Under this task, environmental and social screening and scoping will be carried out for the Bulk Water Supply and K-IV Augmentation subprojects, as described below.

1. **Screening of subprojects**

The Consultant shall carry out the screening as per the criteria and methodology defined in the EMF, SMF, and also set of criteria defined in the KWSSIP Project Risk Reducing Procedure (KWSSIP-RRP).

The outcome of the screening process would be to determine the type of assessment to be carried out and the associated document prepared for each subproject. In general, complex subprojects potentially causing significant and widespread adverse impacts would require an ESIA to be carried out, while subprojects causing less significant and localized adverse impacts would require an ESMP to be prepared. Similarly, subprojects potentially causing resettlement impacts would require an RP to be prepared.

1. **Define project’s ‘study area’ or project influence area**

The Consultant shall define the ‘study area’ of each subproject under SOP-2 (Group-1), considering different environmental and social settings, subproject activities and associated facilities[[4]](#footnote-4). Specify the boundaries of the study area for the assessment: watersheds, enhanced access to sensitive/remote areas such as parks/reserves/forests, in- migration and settlement, natural resource exploitation and commercial development.

1. **Conduct Preliminary Surveys**

The Consultant shall collect information on the existing environment and social scenario from authentic secondary sources, and identify gaps to be filled, relevant to the environmental screening needs from primary surveys. Reconnaissance site surveys will be conducted where possible/necessary (in continuation with the initial site visits carried out during the Inception stage described above).

1. **Planning for Baseline Data Collection**

The Consultant while planning baseline data collection shall ensure (a) relevance of baseline data to predict impact and design mitigation measures; (b) identify data gaps and uncertainties associated with prediction; (c) based on current information, assess the scope of the area to be studied based on physical, biological, and socioeconomic conditions; (d) take into account current and proposed development activities within the project area but not directly connected to the project.

1. **Scoping**

The Consultant shall define boundaries of the project E&S studies after careful consideration of the baseline scenario, likely potential environmental and social impacts and risks, and impacts on the identified sensitive receptors. The scoping shall include a listing of potential environment and social issues that do not deserve a detailed examination in the project E&S studies (such impacts will be scoped out) along with a justification. The scoping needs to identify potential environmental and social risks and impacts that should be studied during E&S studies (i.e., ‘scoped in’).

* 1. **Stakeholder Assessment and Consultation**

The Consultant shall develop the Stakeholder Engagement Plan (SEP) that shall be applicable throughout the project cycle and for all subprojects under SOP-2 (Groups 1 and 2). In preparing this plan, the Consultant shall carry out consultations with communities that are likely to be affected, NGOs, selected Government Agencies and other stakeholders to (a) collect baseline information; (b) obtain a better understanding of the potential risks and impacts; and (c) appreciate the perspectives/concerns of the stakeholders. Consultations shall be preceded by a systematic stakeholder analysis, which would (a) identify the individual or stakeholder groups relevant to the project and to environmental and social issues including affected parties, other interested parties, disadvantaged/vulnerable or groups; (b) include expert opinion and inputs; (c) determine the nature and scope of consultation with each type of stakeholders; (d) determine the tools to be used in contacting and consulting each type of the relevant stakeholders; (e) mode of consultation, time of consultation and type of information to be disseminated; (f) management functions and responsibilities; and (g) monitoring and reporting. Consultation with the stakeholders shall not be treated as a project information dissemination session, but be used to improve the plan and design of the project and shall continue through project implementation.

The SEP shall specify what is required for information disclosure and to achieve meaningful consultations throughout the project cycle. The plan will also include its implementation arrangements and its indicative budget for implementation. The plan will be such that it shall ensure appropriate project information is disclosed to stakeholders in a timely understandable, accessible and appropriate manner.[[5]](#footnote-5) The plan for continued consultations to be conducted during implementation stage of the project shall also be included. The SEP shall also include details for a Grievance Redress Mechanism (GRM) to be operationalized and maintained throughout the project life for stakeholders. An indicative outline of SEP is provided in **Annex A**.

The Consultant will maintain close coordination with the Group-2 Feasibility and Design Consultant since the SEP will cover the entire set of studies under both groups as stated earlier also.

The Consultant will update the nature/type, scope and frequency of stakeholder engagement required in the SEP proportionate to environmental and social risks and impacts identified during E&S screening of each subproject. The Consultant will conduct stakeholder engagement during ESIA/ ESMP/RP preparation as per the SEP. The Consultant will carry out engagement and consultations with various types of the stakeholders including local communities, directly affected people, subproject beneficiaries, relevant government departments and bodies, NGOs, and other groups. The feedbacks received shall be analyzed, and the Consultant shall determine how these can be addressed in the final ESIA/ESMP/RP and project designs. The ESIA/ESMP/RP will include the planning of the stakeholder engagement before and during the project implementation. In carrying out these activities, the Consultant will follow the provisions of WB ESF and ESS10.

* 1. **UNDERTAKING ESIAs AND PREPARATION OF ESMPs FOR WATER SUPPLY SUBPROJECTS (Group-1)**

Based on the screening and scoping discussed earlier, the Consultant shall determine the scale and type of the assessment that will be conducted proportional to the E&S risks and impacts of the subproject. The intent of studies shall be to: (a) validate secondary data with latest baseline information; (b) collect primary baseline data; (c) carry out assessment of impacts and risks of the proposed activities on environment and people; d) facilitate the design and integration of appropriate management / mitigation measures; and (e) comply with the regulatory as well as WB requirements and to facilitate KWSB/ GoS (as applicable) to process relevant environmental clearances.

As already stated in **Section 8.2**, a full ESIA would be carried out for complex subprojects while an ESMP would be prepared for less complex and simpler subprojects. Furthermore, while collecting baseline data, carrying out the assessments and determining mitigation and control measures, the principle of proportionality will be followed and therefore the extent and depth of these studies would be congruent with the nature and significance of the potential risks and impacts on environment and people.

The key steps under this task are described below; many of these activities will be a continuation of the earlier planning and assessment work carried out under the earlier tasks described above.

1. **Baseline Surveys:**

Following the scoping and planning for data collection discussed under **Section 8.2** above, the Consultant will {a} collect information from secondary sources that are relevant to understand the baseline, as well as the design of mitigation measures pertaining to physical, biological and socio- economic environments; {b} carry out site visits, collect baseline data on key environmental and social parameters, and identify environmentally and social sensitive features/ locations within direct or indirect subproject area and document them on the base maps to identify conflict points with preliminary designs (including verification of these from authentic sources of information, such as from the revenue records); and {c} prepare detailed descriptions and specific maps showing details of candidate sites with opportunities to enhance positive impacts of subproject. The baseline data to be collected would be relevant to the subproject activities and the associated risks and impacts. Furthermore, while collecting baseline data for each ESIA, the proportionality principle would be followed as described earlier.

**Environmental data**. Existing basic documents (such as topographical and geological maps, technical documents on climate and meteorology, geology, hydrogeology, road characteristics, water quality/quantity, etc.) shall be collected, reviewed, synthesized, and analyzed. Relevant existing monitoring data for ambient environmental quality covering air, water and noise should also be collected and analyzed for project area and project areas of influence. Additional information shall be sought from various government agencies, academic or research institutions, and/or consulting firms. To the extent feasible residents and professionals shall be consulted to validate information from other sources and identify potential gaps in the technical data.

Field surveys shall also be conducted to collect primary data where existing site-specific information is expected to be inadequate or incomplete. Of special importance is data about the water quality and biodiversity of water bodies that are likely to be impacted by the subproject activities. The data to be collected should as a minimum include: flow, temperature, turbidity, fecal coliforms (and other relevant pathogens), oxygen concentration, BOD5, COD, salinity, ammonium, nitrate, nitrite and phosphate (all unfiltered). The water quality should be classified using chemical and benthic organism where relevant. The instream fauna such as fish, insects, reptiles and the flora should be described where relevant.

All surveys shall be carried out in compliance with the GoS and GoP standards/guidelines/norms as well as WB requirements. Wherever such guidelines/norms are not available, the techniques, tools and samples employed for the surveys shall conform to the international best practices. Whenever directly relevant secondary data is available, these should be used, while indirectly relevant data should be verified through primary survey. Environmental quality (air, water and noise) monitoring shall include an adequate number of samples, as established on a sampling network to provide a representative picture of pollution levels in all project sites. Additional data on sensitive environmental / ecological receptors, if any, shall be collected such as to analyze and predict the possible risks and impacts to a degree and precision of acceptable standards. The natural and critical habitats that could potentially be affected by the proposed activities would also be identified. The surveys shall necessarily cover as appropriate and relevant information on land form, inventory of trees, streams/rivers, historical/cultural sites, construction material sources, land use, sensitive receptors, etc., in subproject areas, including preparation of tree cutting schedules and forest land diversion case. Further, additional specialized surveys, such as biodiversity assessment survey, and hydrological surveys shall be conducted, if and when needed as part of environmental scoping.

The Consultant shall collect information on all relevant regionally or nationally recognized environmental resources and features within the subproject area, which shall be clearly identified and studied in relation to activities proposed under the subproject. These will include all protected areas (national parks, wildlife sanctuaries, reserved forests, biosphere reserves, wilderness zones), unprotected and community forests and forest patches, all wetlands, rivers, rivulets and other surface water bodies.

The Consultant shall consolidate all these information on maps of adequate scale (1:250,000 minimum), superimposed with the subproject areas.

**Social and Socioeconomic data**. The consultant should collect relevant socioeconomic baseline information related to the potential positive and negative impacts at each location of the investments including the potential subproject area of influence. The information would help to assess socio-economic benefits of the project and establish a set of indicators aimed at measuring the socio-economic impacts of the proposed intervention. Special attention should be paid to the needs and priorities of vulnerable and disadvantaged groups including but not limited to women, the poor, and disabled. The baseline information needs to be relevant to the subprojects and their impacts and can include but not be limited to the following with gender disaggregated data:

* Population and demography;
* Vulnerable groups and poverty profile;
* Gender aspects including information on Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH) and Gender Based Violence (GBV);
* Pattern of land use and natural resources including agriculture;
* Livestock, grazing, forestry;
* Land tenure system;
* Land use patterns
* Industry
* Occupational structure;
* Formal and informal occupations and structures; to access the level of encroachment within Right of Way (ROW) if any.
* household income and expenditure;
* Economic activities e.g. labor (industrial, daily-wage etc.); business; services; fisheries; trade; quarrying, tourism, transport etc.;
* Water supply and consumption data by source of supply, quality, cost;
* Status of sanitation services – wastewater disposal, collection of solid waste;
* Access to social services (education, health, communication); status of education, health, vaccination/immunization and social well-being (i.e. distance to schools, to primary health facility/nearest hospital);
* Transport facilities; (included upcoming BRTs corridors if intersecting the proposed KWSSIP interventions)
* Vehicular traffic on important road arteries connecting the project area;
* Law and order and security profile;
* Local government institutions;
* Public institutions
* Private institutions
* Community organizations and institutions (including for service delivery related complaints resolution);
* Active NGOs working in that specific areas and their area of services
* Recreational areas and public spaces, potential;
* Cultural heritage; archaeology; objects and places of special interest (e.g. graveyards and monuments; and others);
* Sensitive receptors

1. **Environmental and Social Risk and Impacts and Mitigation Measures:**

The consultant will assess all direct, indirect, induced and cumulative impacts and risks in both the short-term and the long-term resulting from both construction and operation stages activities of the proposed project. The analysis should follow the methodology(ies) proposed in the Inception Report and agreed with the KWSB and WB, to assign significance levels to each identified impact. The consultant should use both qualitative and quantitative (using analytical and mathematical means) approaches, as appropriate and relevant as well as congruent with the level and nature of risks, to assess the potential impacts, and should distinguish between significant positive and negative impacts, direct and indirect impacts, and immediate and longer-term impacts. The consultant should identify adverse impacts which are likely to be unavoidable or irreversible. The assessment of impacts is directly related to the definition of sensitive receptors. As such, the consultant shall identify sensitive receptors located on-site and its surroundings and assess each potential impact separately in the project areas and areas of influence of the proposed activities. As an example, for each possible adverse impact identified, the following information should be provided:

* A description of the impact and related major issues.
* cause and effect relationships with the planned project activities.
* Assessment of significance of predicted direct, indirect, and cumulative impacts, with their relative risks.
* Significance of the residual impacts (ie, impacts after the implementation of mitigation measures).

Particular attention should be paid to the impacts to ambient water and air quality as the result of the project’s construction and operation, but also the following issues are considered likely to be relevant as well.

**Water (ground and surface)**

The consultant shall assess the following impacts on water resources, as appropriate and relevant:

* Emissions/releases from construction activities.
* Emissions/releases from completed activities during operation and maintenance of the subprojects.
* Accidental leaks in the sewage collection and treatment system.
* Any direct discharge of wastewater through sewers or stormwater drains.
* Chemical contamination from wastes and accidental spills.
* Hydrology: describe any changes in the water drainage which may be introduced with the proposed activities.
* Erosion, runoff, and sedimentation from construction, and grading for access roads. Water balance analysis and sustainability of the water resources.

**Air quality**

The consultant shall assess at least the following air quality impacts, as appropriate and relevant:

* Emissions from construction activities
* Emissions from construction equipment and trucks
* Dust from during construction phase in all project areas and areas of influence, including access roads, disposal sites, for excavations, etc.
* Plant induced emissions including odor during the operations and maintenance phase.

**Noise**

The consultant shall assess at least the following noise impacts, as appropriate and relevant:

* Noise generated by powered mechanical equipment (PME) employed during the construction phase.
* Noise generate by low lift and high lift pumps during operations
* Other noise emissions during the operation and maintenance phases.

**Traffic**

The consultant shall assess at least the following traffic impacts, as appropriate and relevant:

* Increased traffic and congestion during the construction phase due to detours and slow movement of heavy construction vehicles
* Access roads during construction.

**Biodiversity**

The consultant shall assess at least the following biological impacts, as appropriate and relevant:

* Habitat and species impacts/loss in the project areas and areas of influence at all stages of the project.
* Identification of natural and critical habitats that could potentially be impacted by the subproject activities,
* Ecosystem fragmentation.

**Landscape**

The consultant shall assess at least the following impacts on landscape, as appropriate and relevant:

* Presence of equipment or material, soil heaps, and borrow pits during the construction phase
* Potential loss of trees and vegetation during construction and operations

**Spoil, sludge waste and wastewater generation, management and disposal**

The consultant shall assess at least the following impacts, as appropriate and relevant:

* Solid waste, spoil, sludge and wastewater generation linked with construction and operation activities

**Resource efficiency use**

The consultant shall assess at least the following resource use impacts, as appropriate and relevant:

* Source of construction material and its transport to the project area
* Energy use and cost saving requirements for pumps, filtration systems and other mechanical plants during operations

**Cultural and religious heritage**

The consultant shall assess at least the following cultural heritage impacts, as appropriate and relevant:

* Field-based survey will be conducted to define physical cultural resources and the potential impacts of the proposed works on such areas will be evaluated.

**Health and safety**

The consultant shall assess at least the following health and safety aspects, as appropriate and relevant:

* Occupational health and safety (OHS) risks such as improper handling and storage of fuels, oils, chemicals, construction materials as well as accidents occurring with the operation of moving equipment and with trucks moving on-site
* Traffic and other site accidents during both construction and operation phases
* Pipeline and/or storage tanks fracturing, leakage, as well as explosion and fire hazards
* Worker camps and their impacts on host communities, especially on women and girls.
* Potential sabotage: risk assessment and emergency response.
* Adequateness of response mechanism and time in case of accidents.

**Social and socioeconomic aspects**

The consultant shall assess at least the following social and socioeconomic impacts, as appropriate and relevant:

* Land acquisition and resettlement
* Public health and safety issues
* Issues related with influx of labor, conflict between labor and local residents
* Encroaching the privacy of people particularly women
* Blocked access
* SEA/SH issues
* Impacts on vulnerable groups
* Impacts on livelihood and income generation
* Impacts on agriculture, livestock and irrigation
* Impacts on public infrastructure
* Land use change
* Aesthetic aspects of the area.

Additionally, the Consultant shall (a) identify feasible measures for resource efficiency i.e. energy use, water usage and management, and raw materials so as to minimize project’s foot prints on finite natural resources; (b) estimate carbon and GHG emissions due to implementation of project, identify feasible measures for reducing such emissions, creating carbon sink, and climate resilient measures to suite local needs and challenges, and by possible use of alternative technologies. The Consultant shall be responsible to validate project boundary, baseline data, tools and methods that shall be used for estimating GHG emission and designing mitigation measures.

The Consultant for identified environmental and social risks and impacts shall identify appropriate mitigation and control measures, in accordance to ‘mitigation hierarchy’, which will (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.

The Consultant will assist the Consultant for the Group-2 E&S studies in carrying out Cumulative Impact Assessment (CIA) and also assess the induced effects of the construction and operational activities of the subprojects along with other existing and planned development activities in the project area. A single CIA will be carried out for all the subprojects under the SOP-2 (Groups 1 and 2), as a standalone document. The main purpose of the CIA would be to determine any potential combined impacts of the SOP-2 subprojects and any other development works existing, on-going or planned, in the SOP-2 project area. Such impacts are generally not addressed in the EIAs/ESIAs of the individual projects/subprojects and hence there is a need to carry out a high level assessment to determine the cumulative and induced impacts of all the known relevant infrastructure development activities in the area. In particular, the SOP-2 itself comprises a number of water supply and sewerage interventions that may have cumulative impacts. Similarly, the under implementation K-IV water supply project shares the project area with some of the subprojects under SOP-2.

For the CIA, the Consultant will work with the Consultant of Group-2 studies in identifying Valued Environmental Components specifically relevant to the Cumulative Impact Assessment based on inputs from stakeholders, and will assess the potential impacts of multiple development activities on the consumers. For this purpose, some standard methodology should be used such as the one prepared by the International Finance Corporation (IFC).[[6]](#footnote-6) This methodology proposes a six-step procedure to address the cumulative impacts: i) determine spatial and temporal boundaries; ii) identify VECs in consultation with affected communities and stakeholders and identify all developments and external natural and social stressors affecting the VECs; iii) determine present conditions of VEC; iv) Assess cumulative impacts; v) evaluate their significance over VECs’ predicted future conditions; and vi) design and implement: (a) adequate strategies, plans, and procedures to manage cumulative impacts, (b) appropriate monitoring indicators, and (c) effective supervision mechanisms. This methodology should be proposed in the Inception Report and its approval obtained from KWSB and WB.

While carrying out the impact assessment and determining mitigation measures as described above, the Consultant will follow the provisions of the WB ESF and applicable standards, particularly ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, and ESS8. In addition, the Consultant will follow the WBG Environment, Health and Safety (EHS) Guidelines.

1. **Analysis of Alternatives**

The Consultant while doing analysis of alternatives shall compares at least three feasible alternatives where applicable to the proposed subproject sites/alignment, technology, design, and operation—including environmental and social risks and impacts “with project” and “without project” scenarios. The Consultant shall quantify and provide estimated budget for the alternative mitigation measures; and suggest institutional, training and monitoring requirements for implementation. This analysis will be carried out for subprojects potentially causing significant and widespread impacts.

The consultant shall review the earlier studies concerning alternative options if available for the subproject options including the non- implementation of the Project which would meet the objectives of the project but result in optimum resource efficiency use, protection of surface water, fewer adverse impacts on people and the environment. Other potential project alternatives might include engineering design alternatives, technology changes including for compliance with discharge standards, sludge disposal management, construction techniques and phasing, and operating and maintenance procedures.

1. **Environment and Social Management Plan**

Based on the environmental and social impact assessment, ESMPs separate for each identified subproject shall be prepared. ESMPs will consist of a set of mitigation, monitoring, and institutional measures required to reduce if not eliminate adverse environmental and social risks and impacts. The ESMP shall be prepared as per the requirements of WB’s ESSs and should identify responses to potentially adverse impacts; determine requirements for ensuring timely responses; and describe the means for meeting those requirements. The technical details for each mitigation measure shall include the type of impact to which it relates, the conditions under which it is required (e.g., continuously or in the event of contingencies), as well as preliminary design, equipment descriptions, and operating procedures, as appropriate.

Estimate the impacts and costs of the mitigation measures for each of the activities separately and of the institutional and training requirements to implement them. Assess compensation to affected parties for impacts that cannot be mitigated.

The Consultant shall recommend feasible and cost-effective measures to prevent or reduce significant negative impacts to acceptable levels. Apart from mitigation of the potential adverse impacts on the environmental and social components, the ESMP shall identify opportunities that exist to induce positive impacts of subproject. This shall include but not limited to the enhancement of specific locations as water bodies; micro-watershed; innovative storm water management practices - like rain water harvesting and bio-retention apart from preventing water logging conditions in the adjoining settlements of the water and sewage network; enhancement of scenic areas along the corridor; enhancement of community and cultural assets, etc. Residual impacts from the environmental and social measures shall also be clearly identified. Include measures for emergency response to accidental events (land slips during construction or operation.), as appropriate

The ESMP shall include sample plans (ie, guidelines for construction contractors to prepare the Contractor’s ESMP), such as for management and redevelopment of borrow areas and construction camps, waste management plan, traffic management plan, working conditions and management of workers, management of chemical, hazardous and non-hazardous material/waste, noise, occupational health and safety of workers and community, SEA/SH, labor influx (workers accommodation, COVID-19 and HIV/AIDS prevention etc.), and other key impacts under contractors’ control. The actual plans will need to be prepared by the construction contractors with the help of these sample plans. In addition, the ESMP shall include good practice guidelines, related to construction and upkeep of plant and machinery. .

Responsibilities for execution and supervision of each of the mitigation and enhancement measures shall be specified in the ESMP. ESMP will also have a detailed organogram showing all actors to be involved in ESMP implementation, monitoring, reporting, independent supervision and auditing, their relationship to overall project construction and operational management teams and contractors, and points of interface with independent oversight entities. Organogram should indicate entry points for local citizen engagement and NGO participation in monitoring and reporting.

To monitor implementation of ESMP, for different stage of project (pre-construction, construction, post construction), the Consultant shall identify the performance indicators, approach of monitoring, and frequency. The performance indicators should include both quantitative and qualitative types, but the Consultant shall consider practicality aspect and provide approach for monitoring each identified indicator.

The Consultant for unanticipated incidents arising from both natural and man-made hazards, shall prepare Emergency Response Plan (ERP) particularly for the construction stage.

The ESMP shall specify the environmental supervision, monitoring and auditing requirements. The monitoring program shall specify performance indicators, monitoring parameters (air, water, noise, and soil), reference standards, monitoring method, frequency, duration, location, and reporting on progress and results of mitigation. All environmental lab testing shall be conducted by an approved environmental lab by EPA-GoS. In addition, the program will specify what action should be taken and by whom in the event that the proposed mitigation measures fail, either partially or totally, to achieve the level of environmental and social protection expected. An outline of the contents of the ESMP to be included in the project’s Operational Manual should be provided along with environmental/social protection clauses for contracts and specifications.

The ESMP will also include a grievance redress mechanism (GRM) to provide an easy to access, efficient as well as effective means of resolving subproject-related grievances and complaints in a timely and amicable manner.

The ESMP shall highlight the special environmental clauses (SECs) to be included in the Tender Document under General/Particular Specification. These clauses are aimed at ensuring that the Contractor carries out his responsibility of implementing the ESMP and other environmental and safety measures.

The Consultant shall provide assessment on existing institutional/organizational status to support timely and effective of environmental and social aspects of the subproject. The findings shall be basis to identify measures and actions to strengthen environmental and social management capability in KWSB. The ESMPs shall describe the implementation arrangement needed for the subproject, especially the capacity building proposals including the staffing of the environment and social unit adequate to implement the environmental and social mitigation and enhancement measures. For each staff position recommended to be created, detailed job responsibilities shall be defined. Equipment and resources required for the environment and social unit, training plan and modules shall be specified, and bill of quantities prepared.

The Consultant shall provide implementation schedule for measures that must be carried out as part of the subproject, showing phasing and coordination with overall project implementation plans; and estimated cost and sources of funds for implementing the ESMP (integrated into the total project cost tables).

The Consultant shall ensure implementation costs of mitigation measures and actions are integrated into the project’s overall planning, design, budget, and implementation.

* 1. **REVISING, UPDATING AND UPGRADING OF ENVIRONMENTAL MANAGEMENT FRAMEWORK (SOP-2, Groups 1 and 2)**

The Consultant will revise the existing Environmental Management Framework (EMF) prepared for SOP-1, to cover all sub-projects under SOP-2. The EMF is required to include a framework that will guide the preparation of future ESIAs/ESMPs for these proposed sub-projects. The EMF prepared for SOP-1 will be reviewed and upgraded/modified to prepare EMF for SOP-2 (Groups 1 and 2).

The objective of the EMF is to set out the policies, principles, institutional arrangements, schedules and indicative budget that will take care of anticipated environmental impacts. These arrangements will also to ensure that there is a systematic process (instead of an ad hoc one) for implementation of the framework that assures: collection of baseline data, analysis of alternatives, assessment of environmental impacts, participation of affected persons; involvement of relevant institutions and stakeholders; adherence to both World Bank and Government of Pakistan procedures and requirements; and identification of mitigation of assessed impacts. The EMF will provide the framework within which an ESIAs/ESMPs will be carried out/developed when the subproject determined the locations and specific impacts of the project.

* 1. **REVISING, UPDATING AND UPGRADING SOCIAL MANAGEMENT FRAMEWORK AND RESETTLEMENT FRAMEWORK (RF):**

The Consultant will revise the existing Social Management Framework (SMF) including a Resettlement Framework (RF) that was prepared for SOP-1 subprojects, to cover all sub-projects under Groups 1 and 2. The RF is required to develop a framework that will guide the preparation of future ARP/RPs for these proposed sub-projects. The SMF/RPF prepared for SOP-1 will be reviewed and upgraded/modified to prepare SMF including aRF for SOP-2.

The objective of the RF is to set out the policies, principles, institutional arrangements, schedules and indicative budget that will take care of anticipated land acquisition and resettlement. These arrangements will also ensure that there is a systematic process (instead of an ad hoc one) for implementation of the framework that assures: participation of affected persons; involvement of relevant institutions and stakeholders; adherence to both World Bank and Government of Pakistan procedures and requirements; and compensation for affected persons. The RF will provide the framework within which a RP will be developed when the project determined the locations and specific impacts of the project.

* 1. **PREPARE RPs FOR WATER SUPPLY SUBPROJECTS (Group 1)**

The scope and level of detail of the resettlement plans vary with the magnitude and complexity of resettlement impacts. The plans shall be prepared based on social assessment survey and should cover the impacts on the community and other adversely affected groups and mitigation measures. (See **Annex F** for indicative contents of RP).

**Scope of Work for Preparation of RPs**

The RPs will identify and provide a description of the area in which the intervention will take place. It will identify subproject impacts, including the impacts on livelihoods; the project activities that give rise to resettlement and/or loss of livelihood; the zone of impact of such activities; the alternatives considered to avoid or minimize resettlement; the alternatives considered to avoid or minimize loss of livelihood; and the mechanisms established to minimize resettlement and loss of livelihood, to the extent possible, during subproject implementation.

The RP preparation shall follow the requirements of the World Bank’s ESF and ESS5. The RPs shall also refer to Government of Pakistan’s legal and institutional requirements related to land acquisition. Any gaps between these two requirements are to be clearly identified, explaining how these gaps will be filled, and which should take precedence and why.

The following tasks will be undertaken by the Consultant for each RP:

* Identify the key social impacts that will be associated with the involuntary resettlement, the magnitude of such impacts, and the main categories of project affected persons (PAPs), men and women, that will experience these impacts;
* Prepare a socioeconomic inventory and census of the PAPs to establish a basis for the design of the resettlement program and to exclude subsequent inflows of people from eligibility, compensation and resettlement assistance. This would include, among other things, identifying and quantifying different categories of PAPs who require some form of assistance, compensation, rehabilitation or relocation. Information on vulnerable groups or persons (e.g. the poor, widows, women headed households, ethnic/religious minorities, displaced persons, disabled persons, elderly, etc.) for whom special provisions may be needed should be provided;
* Adopt/customize the entitlements matrix given in RF based on a detailed measurement survey listing all likely effects as per relevant typologies to be developed on assets and resources;
* Prepare a compensation and restoration package for each category of PAPs aimed at replacing/compensating for all types of losses, including loss of livelihood, as appropriate;
* Develop a clear timeline and schedule for RP implementation linking the various steps to project components and execution plan, including institutional responsibilities, and monitoring requirements/parameters;
* Document the various consultation activities to be conducted as part of the RP preparation and ensuring that information has been shared transparently through an active and informative consultation process;
* Develop a communication and consultation plan to be adopted by the subproject for consulting and maintaining information flow with the PAPs;
* Identify the institutional responsibility for implementation and procedures for grievance redress, arrangements for monitoring of RP implementation. For this purpose, the GRM described under **Section 8.4** can be used/adopted. The GRM should be simple, easily accessible (for different categories of PAPs), robust, transparent, and multi-tiered. The GRM should also consider the local or societal systems and mechanisms for addressing and resolving governance related grievances. Ideally, the GRM should be linked to or be in synergy with the grievance redress mechanism of KWSB;
* Consult the staff responsible for land acquisition within KWSB and other institutions participating in the arrangement of resettlement activities and clearly define their roles and activities in RP implementation;
* Provide a detailed budget for resettlement compensation, and livelihood compensation and restoration measures proposed in the RP;

The Consultant should employ a participatory, bottom-up, transparent approach in the preparation of the RP. Various qualitative and quantitative data collection tools should be used to engage various categories of PAPs.

**Consultation for the Draft RPs**

The Consultant will employ a consultative and participatory approach that allows stakeholder feedback and facilitates a process of endorsement of the information collected by the PAPs. A consultation meeting for presenting the RPs findings will be planned. This will aim to engage local key stakeholders and involve them in the revision of the draft findings of the RP. This step is very important and a key disclosure requirement for the World Bank. The requirements for arranging a public consultation include but are not limited to:

* Identification and invitation of various groups of stakeholders and ensure balanced representation (according to affiliation, gender, interests, etc.) for all the groups including those who will be encountering various types of adverse impacts;
* Selecting a venue which is neutral and convenient, and provide transportation (if required) to encourage women and marginalized groups to participate;
* Preparation and dissemination of a non-technical executive summary in Urdu/local languages before the consultation, and ensuring its circulation and dissemination well before the public consultation;
* Preparation and delivering of a presentation of the findings of the RP; and
* Recording and addressing the comments and concerns that the participants will raise during the Consultation and ensure proper documentation of the event to feature as an Annex in the final RP.
  1. **PREPARE LABOR MANAGEMENT PROCEDURES (LMP):**

Consultant will identify types and characteristics of project workers (direct, contracted, primary supply and community workers), assess the applicability of labor laws, non-discrimination and equal opportunity, potential labor-related risks associated with occupational health and safety (OHS), risks of child labor, forced labor, gender based violence and sexual exploitation and abuse and sexual harassment (SEA/SH). The assessment will assess impact and absorptive capacity on host communities to address risks that arises from labor influx which need to be incorporated in the bid documents for the civil works contractor. As an outcome of this assessment, Labor Management Procedures will be formulated describing labor management requirements to be fulfilled by KWSB and its contractors for the SOP-2 (Groups 1 and 2) implementation. The LMP will provide details for contractor management, code of conduct and grievance redress mechanism for project workers.

The Consultant will maintain close coordination with the Group-2 Feasibility and Design Consultant since the LMP will cover the entire SOP-2 subprojects.

* 1. **CONDUCTING ENVIRONMENTAL AND SOCIAL REVIEW OF ON-GOING K-IV PROJECT**

**Background**.

The K-IV Phase- 1 Bulk Water Conveyance System, which has been constructed using GoS funds, is an associated facility of the proposed augmentation of K-IV under this project, and as such will be subject to WB ESS.[[7]](#footnote-7)

The K-IV corridor is located in Karachi and Thatta Districts. It is approximately 124 km long which falls in the north of the existing K-II and K-III corridors. It extends in east-west direction from Kinjhar Lake to Karachi. It starts from Kohistan Chak No. 2 (Thatta) and terminates at Deh Allah Phihai and Goth Khairo Barohi (Gadap Town, Karachi) near Norther Bypass. It includes 94 km long canal, 18km long siphons, 773 meters long intake and 81 culverts. The corridor is parallel to the National Highway with a distance of 7km at initial stage. The total land that will be occupied for K-IV in Karachi and Thatta Districts is approximately 13,313 acres. It includes about 300 m (1000 feet) wide right of way (ROW) (9,340 acres), reservoirs and filter plants (450 acres), and pumping stations and intake areas (350 acres).

The project is based on two-stage pumping of water with a system of pumping stations, rising main and canals. In the initial phase of the project acquisition of about 300 m wide ROW is planned. Ample space shall be reserved to undertake all the phases of K-IV system with supply of 650 MGD. The corridor will have two pumping stations. Each pumping station contains four pumps having capacity of 33 MGD each, plus two standby pumps.

**Objective**

The E&S Review of the on-going K-IV project will review and critically assess the compliance status of civil works conducted so far with the WB ESF. The E&S review will also review the E&S instruments and management plans prepared for the remaining sections of K-IV with respect to the WB ESF and propose gap filling measures. If the alignment of K-IV would be changed from the original alignment, update of ESIA/RP would be required for the revised alignment.

The environmental and social review has the following main objectives:

* 1. identify the main environmental and social issues related to the construction, operation and maintenance of K-IV project;
  2. Critically assess E&S instruments and management plans prepared and being implemented for K-IV project (ESIA, RF, RP etc.) with respect to compliance with World Bank ESSs including:
     1. Appropriateness of E&S instruments and tools prepared
     2. Mitigation measures and plans for resource efficiency, pollution control and biodiversity conservation during construction and operations
     3. Labor and working conditions including occupational health and safety (OHS), contractor management, condition of labor camps, any incidence of SEA/SH, grievance redress mechanism for project workers
     4. Community health and safety during construction and operations including SEA/SH and inclusion of disadvantaged and vulnerable groups
     5. Land acquisition, restrictions on land use and involuntary resettlement including identification of PAPs, resettlement procedures followed and compensations provided. Special focus on any evidence or affectees of Anti-Encroachment Drive
     6. Stakeholder engagement during project design, construction and operations including identification of stakeholders, engagement methods used, inclusion of vulnerable and disadvantaged groups, and establishment and operation of an effective and accessible Grievance Redress Mechanism.
  3. Assess the gaps between the management of environmental and social issues as described above and the requirements of the WB ESSs;
  4. Recommend additional steps, activities and gap filling measures to bring the project into compliance with World Bank ESF and the estimation of approximate associated cost;
  5. Identify any additional environmental and social impacts and issues that will need to be assessed to fulfill the requirements of the environmental and social standards of the World Bank.

**Main Tasks**

The main tasks will include but not limited to the following:

1. **Desk review**: review relevant documents including (but not limited to) project feasibility studies, technical design, bidding documents, environmental and social impacts assessment, resettlement framework/plans, records of identified PAPs, details about land acquisition (also including total amount of land expropriated, number of people affected); compensation status and records, legacy issues/litigation regarding land acquisition, E&S management plans (OHS plans, community health and safety plan, GBV plan), E&S monitoring and supervision reports, labor contracts, codes of conduct, complaints registers and records of GRM systems in place, accident reports and any other project documentation to assess compliance with WB ESSs. Also review media reports, and analyses/studies/articles, if any, done by civil society organizations and research institutes;
2. **Field visit and stakeholder consultations**: carry out field visit(s) along the corridor and to any site where construction is underway/has been completed; carry out consultations with stakeholders concerned, including relevant officials (e.g. EPA staff), workers, local community members, people affected; relevant civil society organizations, and others. Conduct interviews with PAPs, with a special focus on resettlement compensations provided and anti-encroachment drive impacts (if any).
3. **Gap Analysis**: Carry out gap analysis between the documents prepared (most importantly, ESIA/EIA of the project, ESMP, RF/RP) and the environmental and social performance of the project (in particular ESMP implementation) on one hand and the WB’s environmental and social standards on the other. Recommend measures and actions, i.e. a Corrective Action Plan, to be undertaken by KWSB and its contractors to fill these gaps
4. **Report preparation**: prepare the report based on the findings of the desk review, field visit and stakeholder consultations with relevant stakeholders, and the gap analysis carried out. The report will present the gap filling measures and include a retrospective-RP and ESIA/ESMP covering their budgets and implementation arrangements.
   1. **CONDUCTING ECOLOGICAL ASSESSMENT FOR THE WETLANDS/RAMSAR SITES FOR DOWNSTREAM-INDUS IMPACTS**

Ecological assessment will be undertaken to evaluate the potential impacts on aquatic and terrestrial ecosystems of Keenjar Lake (and/or Haleji Lake if the water for bulk water option will be supplied from Haleji Lake), especially on waterbirds, and downstream Indus (including coastal mangroves) due to the additional water supply supported under the project, i.e. bulk water option and K-IV phase 1. It will be also good to assess the cumulative impacts as the result of implementation of all K-IV phases.

**Background**

KWSB is considering a bulk water supply option to withdraw additional water from Keenjar Lake/Haleji Lake up to 135MGD through the project. In addition, KWSB is planning to withdraw 230 MGD through the government financed associated bulk water scheme (K-IV Phase 1) . Total 365 MGD constitutes only 0.027 percent of the lowest observed minimum flow of the Indus River at the point where it supplies Keenjhar Lake which was 5 MAF (million acre feet) per day which is equivalent to 1,356,640 MGD. Both Keenjar Lake and Haleji Lake are Ramsar wetlands which are important breeding, staging and wintering habitats for waterbirds in southern Pakistan. Water withdrawal would affect water level, quality and surrounding lake ecosystems. Hence it is important to assess the ecological impacts on the habitat and species due to the construction of these bulk water schemes and associated water withdrawal. In addition, mangrove forests located Indus delta is under the severe stress because of the historical significant decrease of flow of freshwater from Indus River and its tributaries, saline water intrusion and loss of sediment in addition to water pollution. While the additional water flow reduction in Indus River and its tributaries would be limited, such reduction would still have particularly important ecological implication to the mangrove forests in the coastal area which have been already exposed to high levels of threat. Furthermore, K-IV has two more phases, Phase 2 and 3 which are planning to withdraw 260MGD and 130MGD respectively upon completion, and there would be other development plans for additional water withdrawal from these two lakes and Indus River. Therefore, it is highly important to assess the cumulative effects on the ecosystems and biodiversity in Keenjar Lake and Haleji Lake, and in Indus River downstream including coastal mangrove forests so that irreversible ecological impacts beyond critical threshold can be avoided.

**Objectives**

This assignment should be undertaken to identify and evaluate 1) the potential ecological impacts of bulk water supply option proposed by the project and associate K-IV Phase 1, 2) the potential cumulative ecological impacts in the zone of influence of 1) as the result of planned development projects including K-IV Phase 2 and 3 within the same areas of influence, with particular focus on the ecosystems in Keenjar Lake, Haleji Lake and downstream Indus including waterbird, fish, amphibian, reptiles, mammal and mangrove forests in Indus Delta.

**Scope of Work**

**1) Scoping**

The scoping should be carried out at the earliest stage of this task to ensure sufficient time is allowed to adequately inform the assessment process. Scoping requires literature review, consultation, field visit and the use of professional judgement to collate existing information and to determine the sites, species, ecosystems and habitats that are likely to assess likely issues and concerns and to identify designated sites, habitats and species populations which may be exposed to change as a result of the proposed activities. In the case of this project, the particular attention should be given to the important ecological features in the zones of influence of the project, namely waterbirds, endangered/endemic fish, mammal, amphibian and reptile species and mangrove forests which are already identified in Keenjar Lake, Haleji Lake and Indus River downstream. Defining the project and all associated activities and other development within the zone of influence is important to take all the potential impacts into consideration. To do so, obtaining information about the project from the project proposer or their engineers/designers is essential. During scoping, it is important to collect scoping opinions such as important ecological features which could be affected and assessment methodologies from relevant stakeholders including government authority (Sindh Forest and Wildlife Department, SEPA, Sindh Irrigation Department, and Sindh Coastal Development Authority etc.), NGOs (WWF, IUCN etc.), local communities, academia and other professionals, in accordance with the project’s Stakeholder Engagement Plan. Through above process, data gaps should be identified and details of proposed survey and research methodologies, including temporal and spatial considerations should be agreed.

Once the likely impacts have been identified, it is necessary to undertake a systematic assessment of important ecological features that could be significantly affected. To ensure clarity, the rationale and criteria used to select, or exclude, certain features for detailed assessment should be agreed with relevant stakeholders and documented during scoping. Ecologists undertaking EcIAs should determine whether an ecological feature within the zone of influence of a development should be ‘scoped out’ (excluded) and justify the reasons for doing so. The outcomes of the scoping process should be:

* + - A description of the zone(s) of influence of the project
    - The identification of key ecological impacts which could be addressed through changes to project design, including consideration of alternatives
    - A list of the ecological features to be given detailed consideration in the Ecological Impact Assessment
    - A description of the surveys to be undertaken to provide the necessary data to inform the assessment, including methods and timing
    - A list of relevant ecological features that will not be given detailed consideration in the Ecological Impact Assessment and a justification for their exclusion

**2) Establishing the baseline**

An ecological assessment requires the identification of the likely baseline conditions at some point in the future, based on data collected in the past. In the majority of cases, ecological data are likely to have been collected within one or two years prior to the assessment and development activities may take place one or two years after. In these cases the survey data may represent a reliable indication of the baseline conditions. If the sufficient baseline information does not exist, it will be important to establish trends based on historical desk study information and/or field survey over more than one season.

Data used to establish baseline conditions can be obtained from a range of sources, including desk study and surveys. These surveys may have been carried out during scoping, or scoping may have identified the need for further baseline survey to address gaps. Standard survey methods should be used to ensure that the data collected are robust and results can be easily interpreted and compared with those from other investigations. Details of how methods have been tailored to meet the needs of the study should be included. If survey methods vary from accepted good practice this should be explained and justified, and reliability of the results discussed.

Any limitations of surveys, such as information, access or seasonal constraints, should be outlined. However, the seasonal constraints are critical for the assessment of ecological impacts, additional survey should be undertaken in the different season (e.g. rainy season) to collect and analyze the seasonal variation in baseline, and additional survey results should be retrofitted in the final report. All surveys should be carried out by suitably skilled and experienced staff.

**3) Identifying Important ecological features**

The Ecological Impact Assessment should identify the important ecological features that need to be considered in the assessment including ecologically important sites, habitats and species. These can be Protected Areas, Wildlife Reserve, Ramsar Sites, Red listed, Rare, Legally Protected Species. Ecologists may identify ecological features that are not included in lists of important sites or features, but considered important on the basis of expert judgment. e.g. local rarity, endemic species, habitats and species in decline, rich assemblages of plants and animals.

For the assessment of ecological importance of Keenjar Lake and Haleji Lake, importance should reflect the geographical context. Since these two lakes has multiple designations, i.e. Ramsar Sites and Wildlife Sanctuary, the assessment should consider the impacts of the development in respect of each of the features of each of the designations. Indus delta mangrove areas have been degraded and under the stress but the area is an important habitat. It is essential not to under-estimate the importance of habitats in sub-optimal condition where there is potential for restoration.

Ecologically important species population should be identified. When determining the importance of a species population, contextual information about distribution and abundance is fundamental, including trends based on historical records. For example, a species could be considered particularly important if it is rare and its population is in decline. Consideration should also be given to ensuring that the project and associate activities do not result in increase of non-native/invasive plant and animal species.

The Ecological Impact Assessment can provide ecological information to support the assessment of ecosystem services. It is important to recognize cases where ecosystem service provision might be affected as a result of a project’s ecological effects.

**4) Impact Assessment**

The impact assessment process involves:

* + - identifying and characterizing impacts and their effects
    - incorporating measures to avoid and mitigate negative impacts and effects
    - assessing the significance of any residual effects after mitigation
    - identifying appropriate compensation measures to offset significant residual effects
    - identifying opportunities for ecological enhancement.

The assessment should include potential impacts on each ecological feature determined as ‘important’ from all phases of the project, e.g. construction, operation and decommissioning. Impacts should be characterized, through consideration of their magnitude and/or extent, the route through which they occur (whether direct, indirect, secondary or cumulative) and their duration and their reversibility. Positive impacts should be assessed as well as negative ones.

The assessment of impacts should take into account the baseline conditions to allow: 1) a description of how the baseline conditions will change as a result of the project and associated activities, and 2) the identification of cumulative impacts arising from the proposal and other relevant developments. The significant effects must be assessed in the context of the predicted baseline conditions within the zone(s) of influence during the lifetime of the development. Information may be required from other specialists as impacts may relate to noise, air quality, hydrology, water quality, coastal processes etc. Liaison with other disciplines will enable more robust predictions for project-related bio-physical changes and assessment of their ecological implications. Cross-reference should be made to other assessments submitted with the project proposal.

The process of predicting ecological impacts and effects should take account of relevant aspects of ecosystem structure and function – available resources (food, water, territory, etc.) environmental process (flooding, drought wind blow etc.), ecological process and relationship (population dynamics, vegetation dynamics, food webs etc.) , human influences (agriculture, fishery, water supply, sewerage, industries etc.), historical context, ecosystem properties (connectivity, fragility and stability, degree of fragmentation etc.) and other environmental influences (air and water quality, nutrient etc.) . There could be any number of possible impacts on important ecological features arising from a development. However, it is only necessary to describe in detail the impacts that are likely to be significant. Impacts that are either unlikely to occur, or if they did occur are unlikely to be significant, can be scoped out. For transparency, justification for scoping out any ecological impact should be provided.

When describing ecological impacts and effects, reference should be made to the following characteristics as required:

* + - positive or negative
    - extent
    - magnitude
    - duration
    - frequency and timing
    - reversibility.

The assessment only needs to describe those characteristics relevant to understanding the ecological effect of the impacts and determining its significance.

Cumulative effects should be assessed in this assignment. Cumulative effects are particularly important in the Ecological Impact Assessment as ecological features such as Keenjar Lake, Haleji Lake and coastal mangrove forests should have been already exposed to background levels of threat or pressure and may be close to critical thresholds where further impact could cause irreversible decline of such features. The effects of K-IV Phase 2 and 3 should be considered for the cumulative impact assessment. Other activities to be considered would include the following types of future development within the same zone of influence:

* + - proposals for which consent has been applied which are awaiting determination in any regulatory process (not necessarily limited to planning permission)
    - projects which have been granted consent (not limited to planning permissions) but which have not yet been started or which have been started but are not yet completed (i.e. under construction)
    - proposals which have been refused permission but which are subject to appeal and the appeal is undetermined
    - to the extent that their details are in the public domain, proposed projects that will be implemented by a public body but for which no consent is needed from a competent authority.

After assessing the impacts of the proposal, all attempts should be made to avoid and mitigate ecological impacts. Once measures to avoid and mitigate ecological impacts have been finalized, assessment of the residual impacts should be undertaken to determine the significance of their effects on ecological features. ‘Significant effect’ is an effect that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general. A significant effect is a positive or negative ecological effect that should be given weight in judging whether to authorize a project: it can influence whether permission is given or refused and, if given, whether the effect is important enough to warrant conditions, restrictions or further requirements such as monitoring. Significant effects should be qualified with reference to an appropriate geographic scale. When seeking mitigation or compensation solutions, efforts should be consistent with the geographical scale at which an effect is significant. For example, mitigation and compensation for effects on a species population significant at provincial scale should ensure no net loss of the population at provincial scale.

For determining ecologically significant effects, the following should be considered:

* For designated sites – is the project and associated activities likely to undermine the conservation objectives of the site, or positively or negatively affect the conservation status of species or habitats for which the site is designated, or may it have positive or negative effects on the condition of the site or its interest/qualifying features?
* For ecosystems – is the project likely to result in a change in ecosystem structure and function?
* For habitat and species - Consideration of conservation status is important for evaluating the effects of impacts on individual habitats and species and assessing their significance. When assessing potential effects on conservation status, the known or likely background trends and variations in status should be taken into account. The level of ecological resilience or likely level of ecological conditions that would allow the population of a species or area of habitat to continue to exist at a given level, or continue to increase along an existing trend or reduce a decreasing trend, should also be estimated.

**5) Management Plan and Monitoring**

A sequential process should be adopted to avoid, mitigate and compensate negative ecological impacts and effects, i.e. mitigation hierarchy. The description of mitigation, compensation and enhancement measures within the Ecological Impact Assessment should be presented as a management plan and must be sufficient to allow the competent authority and relevant stakeholders to see clearly how effects will be addressed. The management plan should include quantity, location, timing, techniques, responsibility, timeline and resources of each measure. It is helpful to set out how a project has evolved in response to ecological considerations and to indicate how mitigation that has been incorporated into the scheme design has avoided or minimized negative impacts. Presenting the results of the assessment ‘with’ and ‘without’ mitigation allows the need for mitigation and/or compensation to be clearly identified. Where mitigation is fully integrated into the project and there is high confidence that it will be implemented, it may be appropriate simply to assess the significance of effects of the mitigated project, with this assessment reflecting the likelihood of the incorporated measures being successful. Where there is any uncertainty, then the with/without mitigation approach to assessment described above should be used to ensure transparency.

The Ecological Assessment should set out the ecological monitoring required to review predicted impacts and effects against the actual situation. This will enable any necessary remedial action to be taken, including adjustment to the activity generating the impacts and adjustment to the mitigation or compensation measures. The Ecological Impact Assessment should identify where monitoring is required for mitigation, compensation and enhancement measures. It should set out the methods to be used, the criteria for determining success/failure, appropriate timing, responsibility, mechanisms for implementation, frequency and duration of monitoring, and frequency of reporting. It is vital that monitoring has clear indicators of success or failure, set against a suitable baseline. Monitoring needs to have clear aims and objectives to specifically determine the success of the measures, both in the short-term and longer-term.

**6) Consultation**

At least two stages consultation should be taken place: 1) during scoping and 2) when the draft assessment report becomes available. The broad stakeholders should be invited for the consultation and at least one week prior notice and disclosure of relevant documents to be used for consultation should be made through diverse communication channels such as letters, e-mails, websites, phone and public spaces etc. Stakeholder identification and consultation should be carried out according to Stakeholder Engagement Plan of the project. Stakeholder should include but not limited to: government authority (Sindh Forest and Wildlife Department, SEPA, Sindh Irrigation Department, and Sindh Coastal Development Authority etc.), NGOs (WWF, IUCN etc.), local communities, academia and other professionals.

**7) Reporting**

The consultants will prepare the following documents specified in English. The final Executive Summary of the Ecological Impact Assessment report should be prepared after incorporating KWSB and stakeholder feedback after disclosure. After acceptance of the documents, the executive summary should be translated into Urdu and Sindhi.

- Scoping report: should be provided within one month from the date of contract.

- Draft report: should be provided within three months from the date of contract

- Final report: should be provided within four months from the date of contract. When the seasonal data collection is required to evaluate the impact on the important ecological features, the final report should be supplemented with the collected seasonal data within one year from the start of the assignment.

**Implementation Schedule**

**Duration of the contract will be for four months after the mobilization of the consultants**. When the seasonal data collection is required, the final report should be supplemented with the collected seasonal data within one year from the start of the assignment.

* 1. **OTHER ASSISTANCE TO THE KWSB**

The Consultant shall support the client to furnish any relevant information required for obtaining clearance from various government agencies. This may include {a} assisting the client in the submission of application for the Clearance of Reserved or Protected Forests to the Forest Department, {b} completion and submission of the EPA requirements for ESIA/EIA and public hearing (the costs of such hearing to be borne by KWSB) {c} assistance in public hearing process {d} assistance in submission for any other clearance requirements with respect to the environmental and social components relevant to the project; {e} to prepare presentation, brochures, pamphlets for any kind of stakeholder consultation and disclosure; {f} consultation with WB and AIIB Missions as and when required upon instruction of KWSB; {g} to attend all progress review meetings with Team Leader as and when called by the KWSB as well as to prepare progress review reports.

* 1. **PUBLIC DISCLOSURE**

The Consultant will assist KWSB for in-country disclosure of E&S documents, specifying the timing and locations; translate the key documents, such as the executive summary of ESIA, ESMP, RP or any other documents in local language and draft advertisement for the newspaper announcements for disclosure; and help the KWSB to place all the related E&S reports on the KWSB’s website. The E&S documents should also be available in a public place accessible to affected groups and local NGOs*.*

Relevant materials, i.e., informative leaflets, broachers and E&S documents executive summary, etc., will be provided to affected groups in a timely manner prior to consultation and in a form and language that is understandable and accessible to the groups being consulted. The Consultant should maintain a record of the public consultation and the records should indicate: means other than consultations (e.g., surveys) used to seek the views of affected stakeholders; the date and location of the consultation meetings, a list of the attendees and their affiliation and contact address; a video of the consultation workshop and summary minutes.

* 1. **TRAINING OF KWSB STAFF**

The Consultant shall develop a plan for training the KWSB staff. The plan should specify the types of training, the participants for each training type, the number of sessions required, the duration of each session and when it should be conducted. The training should be focused on: (a) borrowers’ responsibilities and ESSs requirements of the World Bank and (b) preparation and implementation of ESMPs, RPs and other E&S documents and their implementation. As part of the implementation of this Plan, the Consultant shall develop two training modules for ‘a’ and ‘b’ above and conduct two sessions each of these training for the KWSB at various levels. The modules should be complete with power point presentations, reading materials, handouts, evaluation forms and reporting format. In addition, the Consultant will conduct training of trainer (ToT) session for the PMU personnel. The training should as far as possible be conducted in the KWSB office. This is to ensure that the knowledge, skills and perspectives gained by the Consultant is transferred to the KWSB so that these can be utilized effectively during project implementation. At the end of the training, a brief report shall be prepared for the training conducted and observations relevant for future training, if any.

1. **DELIVERABLES**

By way of illustrations, and not limitation, the reports to be submitted by the Consultants to KWSSIP as part of deliverables under consultancy services will include the following. A common Inception Report for all the assignments will be submitted within given timelines.

**Inception Report and Common SOP-2 Documents ( SEP, LMP, EMF, and SMF)**

| **#** | **TASK** |
| --- | --- |
| 1 | Inception report comprising of work plan, timelines, and methodology. |
| 2 | Public disclosure and consultation workshop with stakeholders |
| 3 | Submission of first draft of SEP, LMP, EMF, and SMF for SOP-2 (Groups 1 and 2) |
| 4 | Review by KWSB, WB, and AIIB |
| 5 | Conduct public consultations meeting(s) on draft reports |
| 6 | Submission of final draft SEP, LMP, EMF, and SMF including summary of public consultations, executive summary and incorporating comments. |
| 7 | KWSB, WB, and AIIB will provide clearance for disclosure of final draft report in about two weeks (if report is of sufficient quality). |

**ESIA/ ESMP and RP for K-IV Augmentation**

| **#** | **TASK** |
| --- | --- |
| 1 | Submission of first draft ESIA and RP including the Draft Executive summary in sufficient quality to be disclosed. |
| 2 | KWSB, WB, and AIIB will review and provide comments and clearance for disclosure of first draft report in not more than two weeks (if report is of sufficient quality). |
| 3 | Conduct public consultations meeting(s) on draft reports |
| 4 | Submission of final draft ESIA and RP including summary of public consultations, executive summary and incorporating comments. |
| 5 | KWSB, WB, and AIIB will provide clearance for disclosure of final draft report in about two weeks (if report is of sufficient quality). |

**ESIA/ESMP and RP for Bulk Water Supply Systems**

| **#** | **TASK** |
| --- | --- |
| 1 | Submission of first draft ESIA and RP including the Draft Executive summary in sufficient quality to be disclosed. |
| 2 | KWSB, WB, and AIIB will review and provide comments and clearance for disclosure of first draft report in not more than two weeks (if report is of sufficient quality). |
| 3 | Conduct public consultations meeting(s) on draft reports |
| 4 | Submission of final draft ESIA and RP including summary of public consultations, executive summary and incorporating comments. |
| 5 | KWSB, WB, and AIIB will provide clearance for disclosure of final draft report in about two weeks (if report is of sufficient quality). |

**Environmental and Social Review of on-going K-IV project**

| **#** | **TASK** |
| --- | --- |
| 1 | Submission of first draft Review report |
| 2 | KWSB, WB, and AIIB will review and provide comments on first draft report |
| 3 | Submission of follow-up reports (RP, ESMP) |
| 4 | KWSB, WB, and AIIB will review and provide comments on draft RP and ESMP |
| 5 | Conduct public consultations meeting(s) on draft reports |
| 6 | Submission of final draft ESMP and RP including summary of public consultations, executive summary and incorporating comments. |
| 7 | KWSB, WB, and AIIB will provide clearance for disclosure of final draft report in about two weeks (if report is of sufficient quality). |

**Ecological assessment for the wetlands/Ramsar sites for downstream-Indus impacts.**

| **#** | **TASK** |
| --- | --- |
| 1 | Submission of Scoping Report |
| 2 | Review of Scoping report by KWSB, WB and AIIB |
| 3 | Consultations on Scoping Report |
| 4 | Submission of first draft report |
| 5 | KWSB, WB, and AIIB will review and provide comments and clearance for disclosure of first draft report in not more than two weeks (if report is of sufficient quality). |
| 6 | Conduct public consultations meeting(s) on draft reports |
| 7 | Submission of final draft report including summary of public consultations, executive summary and incorporating comments. |
| 8 | Report Addendum covering seasonal data |
| 9 | KWSB, WB, and AIIB will provide clearance for disclosure of final draft report in about two weeks (if report is of sufficient quality). |

1. During the past 19 years, Karachi’s population increased from 9.339 million (1998 Census) to 14.91 million (preliminary 2017 Census results) – a net addition of 5.56 million people. When we look at the recent literature from World Bank and the World Health Organization’s estimates which place Karachi’s population at around 23 million against the figure of 14.9 million as reported in the preliminary census results. These results have not been accepted by GoS (<https://www.dawn.com/news/amp/1354567>; <https://www.thenews.com.pk/print/228657-Karachis-census-results-are-all-terribly-wrong>; https://tribune.com.pk/story/1494020/mqm-p-rejects-fake-census-results/). [↑](#footnote-ref-1)
2. According to World Bank (2016), “Karachi City Diagnostic Report”, unpublished draft – the population figures for Karachi range around 24 million [↑](#footnote-ref-2)
3. Economist Intelligence Unit - http://www.smh.com.au/cqstatic/gxx1l4/LiveabilityReport2017.pdf [↑](#footnote-ref-3)
4. Refer ESF of the World Bank [↑](#footnote-ref-4)
5. refer to WB site for template on preparing SEP at <http://pubdocs.worldbank.org/en/909361530209278896/ESF-Template-ESS10-SEP-June-2018.pdf> [↑](#footnote-ref-5)
6. IFC Good Practice Note on Cumulative Impact Assessment can be found at: <https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_cumulativeimpactassessment> [↑](#footnote-ref-6)
7. *Associated Facilities* means facilities or activities that are not funded as part of the project and, in the judgment of the Bank, are: (a) directly and significantly related to the project; (b) carried out, or planned to be carried out, contemporaneously with the project; and (c) necessary for the project to be viable and (d) would not have been constructed, expanded or conducted if the project did not exist. [↑](#footnote-ref-7)