

Project Administration Manual

Project Number: 48158
Loan and Grant Numbers:{LXXXX; GXXXX}
November 2017

Kingdom of Cambodia: Provincial Water Supply and
Sanitation Project

ABBREVIATIONS

ADB	–	Asian Development Bank
AFD	–	Agence Française de Développement
AIF	–	Asia Investment Facility
DDR	–	due diligence report
DED	–	detailed engineering design
DPWT	–	Department of Public Works and Transport
EIRR	–	economic internal rates of return
EMP	–	environmental management plan
FHH	–	female headed household
FIRR	–	financial internal rate of return
GDPW	–	General Department of Public Works
GDPWS	–	General Department of Potable Water Supply
RGC	–	Royal Government of Cambodia
HH	–	Household
IEE	–	initial environmental examination
JICA	–	Japan International Cooperation Agency
JFJCM	–	Japan Fund for the Joint Crediting Mechanism
km	–	Kilometer
KPI	–	key performance indicators
m ³ /day	–	cubic meter per day
MEF	–	Ministry of Economy and Finance
MIH	–	Ministry of Industry and Handicraft
MPWT	–	Ministry of Public Works and Transport
NRW	–	nonrevenue water
NSDP	–	National Socio-economic Development Plan (2014-2018)
O&M	–	operation and maintenance
PAM	–	project administration manual
PIAC	–	project implementation assistance consultant
PIU	–	project implementation unit
PMU	–	project management unit
PPWSA	–	Phnom Penh Water Supply Authority
PWW	–	provincial waterworks
PWU	-	provincial wastewater units
SDR	–	special drawing right
SPS	–	Safeguard Policy Statement
SRWSA	–	Siem Reap Water Supply Authority
TA	–	technical assistance
UWSP	–	urban water supply project

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PROJECT ADMINISTRATION MANUAL PURPOSE AND PROCESS

The project administration manual (PAM) describes the essential administrative and management requirements to implement the project on time, within budget, and in accordance with Government and Asian Development Bank (ADB) policies and procedures. The PAM should include references to all available templates and instructions either through linkages to relevant URLs or directly incorporated in the PAM.

The executing and implementing agencies are wholly responsible for the implementation of ADB financed projects, as agreed jointly between the borrower and ADB, and in accordance with Government and ADB's policies and procedures. ADB staff is responsible to support implementation including compliance by executing and implementing agencies of their obligations and responsibilities for project implementation in accordance with ADB's policies and procedures.

At Loan Negotiations the borrower and ADB shall agree to the PAM and ensure consistency with the Legal agreements. Such agreement shall be reflected in the minutes of the Loan Negotiations. In the event of any discrepancy or contradiction between the PAM and the Legal Agreements, the provisions of the Legal Agreements shall prevail.

After ADB Board approval of the project's report and recommendations of the President (RRP) changes in implementation arrangements are subject to agreement and approval pursuant to relevant Government and ADB administrative procedures (including the Project Administration Instructions) and upon such approval they will be subsequently incorporated in the PAM.

I. PROJECT DESCRIPTION

A. Rationale

1. **Macro-economic context.** Cambodia's population was estimated at 15.2 million in 2016, spread across 24 provinces, 26 cities, and numerous district towns.¹ While Cambodia remains almost 80% rural, urbanization is accelerating and the urban population is expected to reach 30% of the national total by 2030. This urban growth has been centered mostly in and around the capital, Phnom Penh. Since 2000, provincial cities and towns have been impacted by the increasing urbanization and have played an increasingly important role in the country's economy. This is the case in the cities of Battambang, Kampong Cham, Siem Reap, and Sihanoukville, which have grown to become important secondary cities, commercial and connectivity hubs, and tourism centers.² Rapid economic development and urban migration in the cities highlighted the importance of basic urban services, especially WSS, and the necessity to upgrade and expand the infrastructure and improve service quality.

2. **Access to Services.** Countrywide, population access to improved water supply in urban areas (excluding Phnom Penh) is 69.7%, while access to piped water supply is low at only 42.2%. Rapid expansion of the infrastructure is required to meet the government's 2025 target of 100% access to potable water for the entire population. Access to improved sanitation in urban areas is 80.2%, while access to sewerage and wastewater treatment is only 10.7%; a large proportion (69.3%) have individual systems (septic tanks). Open defecation in urban areas remains unacceptably high at 17.3%.³ The low sanitation coverage across the country has led to widespread pollution, affecting rivers, coastal areas, and tourist areas. Except for Phnom Penh, the government has been able to invest adequately in urban WSS since the mid-1990s resulting in significant service delivery gaps due to (i) inadequate funds for capital investment and operation, (ii) weak regulatory framework and sector planning, and (iii) weak institutional capacity to implement and provide sustainable services.⁴

3. **Policy Framework.** Cambodia's National Water and Sanitation Policy⁵ laid basic principles for urban and rural WSS service delivery in the country, including duties and responsibilities for planning and implementation, standards, oversight, and evaluation. For urban areas, the National Strategic Development Plan (NSDP), 2014–2018 provides key actions for water supply, but actions

¹ Government of Cambodia. 2014. Cambodia Inter-Censal Survey (CHDS) 2014. Phnom Penh.

² Estimated populations in 2015: Battambang (257,600), Kampong Cham (86,100), Siem Reap (200,000), and Sihanoukville (78,250).

³ Improved urban water supply includes piped water to households, public tap and/or standpipe, bore holes, protected wells, and improved rainwater collection. Improved sanitation includes flush and/or pour flush to piped sewers, septic tanks, and pit latrines with slab. Government of Cambodia, Ministry of Planning. 2014. *Cambodia Socio-Economic Survey*. Phnom Penh (Tables 9 and 11).

⁴ Urban water supply investments were mostly centered on Phnom Penh. The Phnom Penh Water Supply Authority (PPWSA) is recognized as one of the most efficient water utilities in Asia. Nationwide sanitation is lagging significantly.

⁵ Government of Cambodia. 2003. *National Water and Sanitation Policy*. Phnom Penh.

for sanitation are not well-defined.⁶ Consequently, the project team prepared a draft sanitation roadmap⁷ under the technical assistance (TA) to support the subsector's development.⁸

4. Institutional Arrangements. Responsibility for the WSS sector is fragmented, requiring cooperation among ministries and overcoming structural and organizational weaknesses. Urban water supply falls under the responsibility of the Ministry of Industry and Handicraft (MIH), and service delivery is entrusted to the provincial waterworks (PWWs) under provincial administration. The Ministry of Public Works and Transport (MPWT) is responsible for urban sanitation, while the provincial wastewater units (PWUs) under the provincial administration are in charge of operation and maintenance. However, the PWWs and PWUs have limited autonomy—provincial waterworks operate using their revenues from water tariffs while PWUs operate with limited revenues as the recovery of sanitation tariffs is mixed with the provincial revenues. In late 2016, the government upgraded the Department of Potable Water Supply of MIH to a general department to better support the sector with increased staffing and improved organization of activities. While this change is significant for sector development, capacity development and training is required to support these expanded activities, which the project will support. The government created a dedicated Department for Urban Sanitation at MPWT with similar needs. Recent and continuing government reforms (para. 8) are transforming the sector and improving coordination between agencies, but additional support is needed to accelerate this work.

5. Service delivery through the private sector. In many cities and towns, small-scale private water operators have filled the gap, but these services generally only provide water to the more profitable core areas of the town and many households remain unconnected, particularly the poor.⁹ However, the infrastructure, water quality, and service standards of private water operators remain poor and they lack the technical expertise and financial capacity to support any form of private sector development. Given the low participation levels by the private sector, MIH continues to expand service delivery by the provincial waterworks where there is significant demand.

6. Sector reforms and improving financial performance. In 2014, MIH launched a sector reform program to improve urban water supply services and the financial performance of provincial waterworks, focusing on operational improvements and efficiency gains. The program is based on the reforms that made the Phnom Penh Water Supply Authority (PPWSA) one of the most efficient water utilities in Asia.¹⁰ The government introduced minor tariff increases where needed, as the law

⁶ Government of Cambodia. 2014. *National Strategic Development Plan, 2014–2018*. Phnom Penh. Key actions for water supply in the NSDP are (i) development of a legal framework for urban water supply; (ii) promotion of decentralization and deconcentration; (iii) transfer of full autonomy for service delivery to all provincial public waterworks; (iv) mobilization of urban water sector financing; (v) improvement of sector performance and public access to safe, affordable, and sustainable water supplies; and (vi) improvement in the protection of water sources and enforcement of regulations.

⁷ The draft 20-year sanitation roadmap (expected to be adopted by 2020) provides directions on (i) tariff setting and cost recovery, (ii) subsidies to encourage increased uptake of sanitation, and (iii) city-wide sanitation planning and implementation. It also presents common aims and standards for all departments of public works and transport to (i) reduce the differences in capacity, (ii) improve planning for increased sanitation coverage, and (iii) improve coordination between the WSS subsectors.

⁸ Technical assistance supported the development of prefeasibility studies and preliminary engineering designs for the project and a draft sanitation roadmap. ADB. 2013. *Technical Assistance for Supporting the Cities Development Initiative for Asia*. Manila.

⁹ Investment by the private sector has been hindered by the use of 3-year water licenses, limited access to finance, and poor capacity. In 2014, MIH issued a ministerial decree that provides more clarity about the licensing process and grants a 20-year license term for operators in a defined service area.

¹⁰ The success of PPWSA is characterized by strong and long-lasting leadership, autonomy to allow the freedom to operate on corporate principles, continuous staff development, performance-based bonus system, customer-oriented service, high-quality infrastructure and equipment, and a strong focus on nonrevenue water reduction, energy efficiency, and expansion of coverage.

only permits tariffs adjustments every 5 years. Based on MIH's reform program, in 2017 (i) all provincial waterworks are recording positive incomes, (ii) nonrevenue water is mostly below 20%, and (iii) service quality has improved. Tariffs are now at sustainable levels for financing operation and maintenance (O&M) but are insufficient to finance the capital costs required for system expansion. Support for capital investments to expand infrastructure coverage and increase the customer base is an urgent priority for the MIH and is crucial for provincial waterworks to achieve financial autonomy by 2019 in line with the NSDP, 2014–2018.

7. Supporting the sanitation subsector. Although the sanitation subsector has made positive steps in terms of coverage, overall, the wastewater (including collection and treatment) remains in the early stages of development. A new focus on sanitation has evolved through recent Asian Development Bank (ADB) urban development projects and good government support now exists to increase sanitation coverage, enhance sustainability through improving revenues for O&M, and reduce pollution of watercourses draining to the Tonle Sap lake and the sea.¹¹ Piped sewer systems and wastewater treatment plants (WWTPs) are present in only three provincial cities,¹² and expansion is needed for the environmental and health benefits to be realized. For other cities and towns, like Kampong Cham, formal sanitation services are absent, and septage management needs to be introduced as a first step in mainstreaming sanitation countrywide.

8. Project specific constraints. Given that the government's ongoing sector reform is showing good results, the immediate demand is for capital investment to support the expansion of services. The project will support ongoing water supply and sanitation service improvement in key economic growth centers that experience the following constraints:¹³

- (i) In Battambang, the population with access to piped water supply is about 31% and to sewerage is about 5%. The WWTP capacity is inadequate to treat and discharge the sewage.
- (ii) In Kampong Cham, the population with access to piped water supply is about 37% and there is no access to a formal sanitation system.
- (iii) In Sihanoukville, while other projects are expanding access to water supply, the population with access to sewerage is about 22% but WWTP capacity is inadequate and needs expansion together with the sewerage system.
- (iv) In Siem Reap, while other ongoing projects will expand access to water supply, the population with access to sewerage is about 50%. However, the trunk sewer is structurally and hydraulically inadequate, resulting in pollution of local watercourses.

9. ADB's assistance and lessons learned. ADB has supported the urban WSS sector since 1995, starting with support for water supply improvements in Phnom Penh. The project incorporates lessons learned in implementation: (i) improving specifications for materials and equipment to enhance project quality and sustainability; (ii) introducing energy efficiency measures to reduce O&M and capture carbon emissions; (iii) providing higher levels of project supervision to improve project deliverable quality; (iv) continuing provision of capacity building support to improve sector sustainability; and (v) considering the use of design–build contracts to promote design flexibility and expedite project delivery through private sector efficiency.

¹¹ Battambang, Kampong Cham, and Siem Reap are cities in the Tonle Sap basin whose drainage systems flow to the Tonle Sap lake. Sihanoukville is the main coastal city where drainage systems discharge to the sea.

¹² Battambang, Siem Reap, and Sihanoukville—all with support from previous ADB-financed projects.

¹³ The existing situation and proposed options in each town are included in the Pre-engineering Design Reports (accessible from the list of linked documents in Appendix 2).

10. **Development Coordination.** The project has been closely designed with the Japan International Cooperation Agency and the AFD, which are active in this sector. While the World Bank has been less active, coordination continues as it has plans to re-enter the sector. The Japan International Cooperation Agency is working in numerous provinces to increase urban water supply coverage in core areas, and is providing extensive capacity development support for provincial waterworks. AFD is financing a new water treatment plant in Phnom Penh, and has a parallel cofinanced project in Siem Reap for a water treatment plant to provide water for the distribution zone financed by ADB.

11. **Strategic Context.** The project is aligned with (i) phase 3 of the government's rectangular strategy for growth, employment, equity, and efficiency;¹⁴ (ii) Cambodia's NSDP, 2014–2018; (iii) the action plans of the MIH to strengthen the management of publicly owned waterworks and integrate urban water supply with urban environmental management; and (iv) MPWT requirements for improved and effective urban sanitation. The project is consistent with the three pillars of the ADB country partnership strategy, 2014–2018 for Cambodia and supports ADB's Water Operational Plan and ADB's Urban Operational Plan.¹⁵

12. **Value added by ADB assistance.** ADB's continued assistance to the government's sector development strategy is important to ensure access to equitable WSS services in Cambodia's towns and cities. It will provide the finance and capacity development required to implement the project as well as (i) incorporate high-level technologies addressing cost-effective wastewater treatment, energy efficiency, and advanced construction techniques (trenchless methods for pipe laying); (ii) use design–build procurement modalities to expedite design and construction and benefit from private sector experience and capacity; (iii) support provincial waterworks' progress toward financial autonomy by 2019 by expanding the customer base; and (iv) promote sustainability of the PWUs, through ring-fencing of revenues dedicated for O&M and development of a financially sustainable tariff policy.

B. Impact and Outcome

13. The project is aligned with the following impact: improved urban environments and quality of life for the urban residents. The project will have the following outcome: sustainable piped WSS services provided in selected provincial cities.

C. Outputs

14. **Output 1: Improved piped water supply.** The project will finance two water supply subprojects (in Battambang and Kampong Cham), including two new water treatment plants with a combined capacity of 61,600 cubic meters per day (m³/day) and new distribution networks with a combined length of 161 kilometers (km), which will also assist in reducing nonrevenue water. The expanded systems will serve an additional 209,000 people (about 40,000 connections) by 2022 (achieving a population coverage of about 90%), increasing revenues and reducing unit costs through increased economies of scale. The project will assist the government to develop a subsidized connection policy, similar to the PPWSA approach,¹⁶ to encourage connection by poor

¹⁴ Government of Cambodia. 2013. *Rectangular Strategy for Growth, Employment, Equity, and Efficiency, Phase III*. Phnom Penh.

¹⁵ ADB. 2014. *Country Partnership Strategy: Cambodia, 2014–2018*; Manila; ADB. 2011. *Water Operational Plan, 2011–2020*. Manila; and ADB. 2012. *Urban Operational Plan, 2012–2020*. Manila.

¹⁶ PPWSA approach provides subsidies of 100%, 70%, 50%, and 30% depending on household income and financial situation. The balance after the subsidy can be paid over a period of up to 24 months through water billing.

and disadvantaged households (covering about 15% of connections). New laboratory equipment will improve monitoring and water quality testing.

15. **Output 2: Improved sanitation.** The project will finance four sanitation subprojects, including (i) a new 10,625 m³/day capacity WWTP at Battambang and 15.4 km of new sewers; (ii) a septage management system (collection, treatment, and disposal) in Kampong Cham; (iii) expansion of the Sihanoukville WWTP from 6,900 m³/day to 20,500 m³/day and 32.1 km of new sewers; and (iv) a new 3.7 km trunk sewer in Siem Reap, constructed using trenchless technology to limit disturbance to business and tourism activities.

16. **Output 3: Improved institutional effectiveness.** The project will strengthen institutional effectiveness through improved coordination between MIH and MPWT, provide continued support to help provincial waterworks and PWUs achieve financial autonomy, and support the MIH to develop its regulatory role. It will improve staff capacity in project implementation of urban WSS projects and O&M through on-the-job training. The project will help develop a new master's program in water and wastewater engineering with the Institute of Technology of Cambodia to support future graduates in the sector.¹⁷

¹⁷ Further information is provided in the Project Administration Manual (accessible from the list of linked documents in Appendix 2).

II. IMPLEMENTATION PLANS

A. Project Readiness Activities

Indicative Activities	2017-2018									Responsible Party
	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Consultants recruitment			X	X	X	X	X	X	X	MIH/MPWT/ADB
Advance contracting for Siep Reap and two water supply subprojects		X	X	X	X	X	X	X	X	MIH/MPWT/ADB
Establish project implementation arrangements	X									MIH/PMU in cooperation with MPWT/PMU, already established
ADB Board approval						X				ADB
Loan signing							X			ADB and MEF
Government legal opinion provided								X		MIH/MPWT/MEF
Government budget inclusion								X		MIH in cooperation with MPWT and MEF
Loan effectiveness									X	ADB and MIH/MPWT

ADB = Asian Development Bank, MIH = Ministry of Industry and Handicrafts, MPWT = Ministry of Public Works and Transport, PMU = project management unit.

Source: Asian Development Bank.

B. Project Readiness Filters

Key Project Preparation Elements	Stage of Project Preparation					Current Status (31 October 2017)
	Identification/ Preparation	Loan Fact-Finding (Mar 2017)	Follow-up Loan Fact-Finding Mar 2017 and follow- up communications to Oct 2017	Negotiations (Oct 2017)	Effectiveness (Mar 2017)	
Governance risk plans, including Complaints Handling Mechanism	Drafted completed in Draft Final Report (PAM)	Discussed	Discussed and finalized	Completed and agreed. A Project staff member has been assigned as focal point person		<ul style="list-style-type: none"> Attached to LFF MOU
Procurement Capacity Assessment (PCA) of executing agencies (EAs) and implementing agencies (IAs)	Included in Draft Final Report	Final draft discussed and finalized			Start-up actions implemented	<ul style="list-style-type: none"> PCA completed General Procurement Assessment completed Includes EAs and IAs
Advance Actions (AA) for 1st year including Bidding Documents (BDs) for goods and works		MOU between DPs and GoC includes list of items, timetable and responsibilities for implementation of AA.	Bidding documents prepared by TA consultants.		BD No objection obtained by the DPs and issued Ready for signing.	<ul style="list-style-type: none"> Bidding documents under preparation for procurement of goods and works for subprojects (Battambang water supply, Kampong Cham water supply, and Siem Reap trunk sewer). Bidding documents ADB review/approval by Nov 2017.
Advance action for consultants	Outline Terms of Reference (TORs) for project implementation and assistance consultants (PIAC) drafted and part of Draft Final Report (PAM). TORs drafted by ADB and EA.		Detailed TOR for PIAC reviewed and finalized by ADB and approved by EA and AFD.	Request for Expressions of Interest advertised.	Shortlisted evaluation completed, plus <ol style="list-style-type: none"> Technical and financial proposals evaluated Contract negotiations planned. 	<ul style="list-style-type: none"> Draft Terms of Reference for the PIAC consultants included in the draft PAM to be used as the basis for commencement of consultant recruitment by the EA.
Financial Management Capacity Assessment of EAs/IAs	Drafted completed in Draft Final Report (PAM).		FMCA discussed and finalized	Start-up actions initiated	Start-up actions implemented including FM training within 2 months.	<ul style="list-style-type: none"> Draft FMCA completed

Key Project Preparation Elements	Stage of Project Preparation					Current Status (31 October 2017)
	Identification/ Preparation	Loan Fact-Finding (Mar 2017)	Follow-up Loan Fact-Finding Mar 2017 and follow-up communications to Oct 2017	Negotiations (Oct 2017)	Effectiveness (Mar 2017)	
Auditing arrangements including TOR	Drafted completed in Draft Final Report (PAM)		Audit arrangements discussed and agreed with EAs	Confirmed		<ul style="list-style-type: none"> Draft included in the PAM
Environment assessments and plans, social assessment and plans, including Indigenous People and Gender assessments and plans (where applicable)	Drafted completed and discussed in the Draft Final Report (PAM)	Environment and Social assessments and plans reviewed, refined, discussed and agreed. Safeguard drafts to be disclosed once endorsement/ approval is received.	IEEs being finalized for approval by MOE and disclosure prior to SRM		Action plans initiated and ongoing.	<ul style="list-style-type: none"> 2 IEEs completed and 4 DDRs. Endorsement of IEEs by the EAs Category B
Implementation of Resettlement Plans with attention to sufficient budget for compensation and income restoration. Coordination with IRC and EA resettlement Units. Updating of Resettlement Plans	Provincial town RPs and replacement costs study prepared and upgraded and reviewed with EAs/IAs.	Resettlement Plans reviewed and refined with the EAs and (IRC/MEF) for confirmation with MIH/MPWT.	<p>DDRs with MIH/MPWT</p> <p><i>Draft DDRs to be uploaded to ADB website following endorsement and approval from MIH and MPWT.</i></p>		<p>Start implementation recruiting resettlement specialists to PMUs within 3 months.</p> <p>Conducting detailed measurement surveys within 3months of any plan review.</p>	<ul style="list-style-type: none"> RF endorsed by government (GDR and EA) for disclosure. 2 subproject Draft RPs endorsed by the the government (GDR and EA) for disclosure. 4 DDRs completed and endorsed by the EA. Category B
Identification of Project Director and EA/IA project management teams to be responsible for project implementation.	MIH and MPWT to identify and assign staff to lead project preparation implementation arrangements defined in Draft Final Report (PAM).	PMU compositions reviewed, refined, discussed and agreement to staffing requirements.	PMU compositions confirmed. Selection conducted	Issuance of formal appointment of project management and implementation teams.		<ul style="list-style-type: none"> Composition of PMUs for Prakas confirmed with MIH and MPWT At loan negotiations staff assignments included in the draft Prakas finalized by Sep 2017
Identification of staff at provincial level.	MIH and MPWT to identify and assign staff to lead project preparation implementation arrangements defined in Draft Final Report (PAM).	PIU compositions reviewed, refined, discussed and agreement to the staffing requirements	PIU compositions confirmed. Selection conducted.	Issuance of formal appointment for project management and implementation teams.		<ul style="list-style-type: none"> Composition of PIUs confirmed with MIH and MPWT At loan negotiations staff assignments included in the draft Prakas finalized by Sep 2017

Key Project Preparation Elements	Stage of Project Preparation					Current Status (31 October 2017)
	Identification/ Preparation	Loan Fact-Finding (Mar 2017)	Follow-up Loan Fact-Finding Mar 2017 and follow- up communications to Oct 2017	Negotiations (Oct 2017)	Effectiveness (Mar 2017)	
Budget and funding from DP and GOC for the 1st year of project implementation.	Needs defined and budget proposed in the Draft Final Report (PAM)	Reviewed, refined, discussed and agreed.	Reviewed, refined, discussed and agreed. Government includes in national budget for 2017/2018.	Confirmed	Available	<ul style="list-style-type: none"> Discussed with MIH, MPWT and MEF.
M&E baselines	Defined in the DMF as part of the Draft Final Report (PAM).	Baselines and indicators reviewed, refined, discussed and agreed.	Baseline and indicators confirmed, .	Confirmed		<ul style="list-style-type: none"> DMF finalized

Source: Asian Development Bank.

Ref	Activity	2017				2018				2019				2020				2021				2022			
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
4.3	Wastewater networks – detailed engineering design						■	■	■																
4.3.1	Bidding documents approval									■	■														
4.3.2	Safeguard approval									■	■														
4.3.3	Bidding, evaluation and contract award										■	■	■												
4.3.4	Civil works and construction													■	■	■	■	■	■	■	■	■	■	■	■
4.3.5	Commissioning																					■	■	■	■
4.3.6	Defects liability period																								■
5	Output 3: Improved institutional effectiveness									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5.1	Recruitment of PIAC consultant				■	■	■	■	■																
5.2	Consultancy project support & advisory services									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
5.3	Recruitment/appointment of PIAC gender specialists and PMU/PIU focal persons							■	■																
5.4	Gender awareness/training on GAP implementation and monitoring								■																
5.5	Scholarships water supply, waste water engineering; Curriculum development, accreditation									■	■	■	■												
	Scholarships, 80 (50% female 50% male) 20 per year													■	■	■	■	■	■	■	■	■	■	■	■
5.6	Forty English language training placements Appoint training institute, determine eligibility etc.									■	■	■	■												
	40 persons equally to WS, WW - 10 each per year													■	■	■	■	■	■	■	■	■	■	■	■
5.7	Gender staff targets for GDPWS/PWW, GDPW/DPWT									▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬
5.8	Employment targets for women – civil works contracts									▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬	▬
5.9	Six-monthly gender monitoring and reporting									▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼

17. During/following detailed engineering design the project management units (PMUs) and project implementation assistance consultants (PIAC) will (i) update the initial environment examinations (IEEs), resettlement plans (RPs) and due diligence reports (DDR) and submit to GDR for approval, before submission to ADB; (ii) prepare the applicable environmental report for submission to the Ministry of Environment (MOE) for review and approval; (iii) review the circumstances concerning any potential unexploded ordnance (UXO) (if any); and (iv) ensure that the necessary land is acquired before subproject bids are placed to bid. The PIAC will provide project technical, safeguards, accounting and management assistance on a daily basis as well as support the project implementation units (PIU) with project implementation.

18. During the Inception phase of the PIAC contract the PMUs and the PIAC will re-assess the capacity and readiness of each concerned province to implement the project, and make appropriate plans for training in procurement and administration (organized by ADB). In this regard and in compliance with the Cambodian Procurement Manual (updated May 2012) for all external financed projects/programs in Cambodia, provincial governments and PWWs/DPWTs might be required to undertake the following actions prior to the start of project implementation: (i) establish the PIUs, with qualified, competent staff suitably trained in project management, project accounting, ADB procedures, community development, computers and equipment and English language capabilities; and (ii) formulate and implement a detailed plan to ensure that the PIU has the capacity to manage, operate and maintain the proposed water supply and/or wastewater/septage systems, including appropriate staffing, training, technical and management support.

III. PROJECT MANAGEMENT ARRANGEMENTS

A. Project Implementation Organizations: Roles and Responsibilities

19. The project is scheduled for implementation over 5 years from January 2018 to December 2022. MIH will be the Executing Agency, and the MPWT will be the Implementing Agency. A Coordinating Committee will be established for project and sector coordination between MIH and MPWT. MIH will have responsibility for the coordination and consolidation of reports to MEF and ADB.

20. Two PMUs will be established in (i) the General Department of Potable Water Supply within MIH for the water supply subprojects, and the General Department of Public Works within MPWT for the wastewater/septage subprojects, with full-time staff to execute and manage the Project. An English-speaking project coordinator will be assigned to each PMU. PIUs will be established in the PWWs at Battambang and Kampong Cham, and the DPWTs at Battambang, Kampong Cham, Sihanoukville and Siem Reap, with responsibility for daily oversight and supervision of subproject implementation. MIH and MPWT will recruit the Project Implementation Assistance Consultants (PIAC) to assist the PMUs and PIUs. ADB will assist the government to arrange consultants to assist with technical and procurement procedures prior to loan effectiveness. Procurement of goods, works, and related services will be undertaken in accordance with ADB's Procurement Guidelines (2015, as amended from time to time), and recruitment of consulting services will comply with ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The implementation arrangements are summarized in Table 3 and described in detail in the following sections of this project administration manual (PAM).¹⁸ Withdrawal applications will be prepared by the PMUs (GDPWS and GDPW) and approved by the EAs, pooled together by MIH and approved by the Ministry of Economy and Finance (MEF).

¹⁸ Project Administration Manual (accessible from the list of linked documents in Appendix 2).

Implementation Arrangements

21. The implementation arrangements are summarized in Table 3 and presented in detail in the Project Administration Manual (PAM). The proposed project is subject to universal procurement.¹⁹

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	January 2018–December 2022		
Estimated completion date	31 December 2022 (loan and grant closing: 30 June 2023)		
Management			
(i) Oversight body	Coordinating committee - representatives from MIH, MPWT, and MEF		
(ii) Executing agency	MIH		
(iii) Implementing agency	MPWT for sanitation		
(iv) Implementation units	PWWs for water supply subprojects. PWUs for sanitation subprojects		
Procurement	International competitive bidding	MIH: 2 contracts MPWT: 3 contracts	\$45,407,000 \$46,680,000
	National competitive bidding	MIH: 1 contract MPWT: 2 contracts	\$175,000 \$1,030,000
	Shopping	MIH: 2 contracts MPWT: 3 contracts	\$65,000 \$113,000
Consulting services	Quality and cost-based selection	581 person-months	\$5,032,000
		JFJCM package	\$1,480,000
Advance contracting	Advanced action for consulting services and procurement of three works packages. ^a		
Disbursement	The loan proceeds will be disbursed in accordance with ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank, DPWT = Department of Public Works and Transport, GDPWS = General Department of Potable Water Supply, GDPW = General Department of Public Works, MEF = Ministry of Economy and Finance, MIH = Ministry of Industry and Handicrafts, MPWT = Ministry of Public Works and Transport, PWU = provincial wastewater unit, PWW = provincial waterworks.

^a Recruitment of consultants commenced in November 2017 together with procurement of design–build contracts for (i) the Siem Reap trunk sewer, (ii) Kampong Cham water supply, and (iii) Battambang water supply.

Source: Asian Development Bank.

Project implementation organizations	Management Roles and Responsibilities
Coordination Committee	➤ Will be established with senior MIH and MPWT representation to ensure project and sector coordination and resolution of cross ministry considerations. The committee will convene as required and at least six monthly during the project's duration.
Ministry of Industry and Handicrafts (MIH) Executing Agency	➤ will perform the roles of the executing agency (EA) and be responsible for the overall conduct of the Project and for the consolidation of all reports and project financial statement to MEF and ADB, MIH will form a project management unit (PMU) for the day-to-day management of the water supply components of the project. Membership of the PMU will require about 15 staff in the following positions: (i) project director; (ii) project manager; (iii) accountant; (iv) technical officer (3); (v) procurement officer (2); (vi) administration officer; (vii) social and environmental safeguards officer; (viii) gender officer; and (ix) cashier; and (ix) three drivers (contract).

¹⁹ ADB. 2013. *Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources*. Manila.

- General Department of Potable Water Supply (GDPWS), MIH
- will be assisted by the PIAC on project technical, safeguards, accounting and management on a daily basis as well as support the PIUs with project implementation and the PMU will be responsible for the following: (i) project management; (ii) assistance with bid preparation; (iii) assistance with technical designs for extended water supply networks; (iv) coordinating with other agencies and relevant projects; (v) procurement; (vi) contract supervision; (vii) project monitoring; (viii) project reporting; (ix) supervision of training activities; (x) managing of workshops; (xi) supervision of PIAC; (xii) financial management of Project; (xiii) supervision of PIUs; (xiv) communication with all stakeholders.
- Provincial Waterworks (PWWs)
- will be formed in the project towns, and will be responsible for (i) monitoring and reporting monthly to PMU on project progress; (ii) contract supervision; (iii) liaison with PIAC and PMU in implementation of capacity development plan and training programs; (iv) coordinating with other provincial agencies; and (v) community communication.
 - the PIUs will have the following membership: (i) project manager; (ii) provincial Department of Industry and Handicrafts (DIH) representative; (iii) accountant; (iv) technical officer; (v) administration officer; and (vi) social and environmental safeguards officer. Additional part-time staff may include (i) community coordinator or community awareness officer; and (ii) secretary, as most of these tasks will be carried out by the PMU. A DIH representative will a member of the PIU team, and where possible will hold the position of Project Manager with the Provincial Waterworks Director becoming the Technical Officer of the PIU.
- Ministry of Public Works and Transport (MPWT): wastewater/septage subprojects
- will form a project management unit (PMU) for the day-to-day management of the wastewater/septage components of the project. Membership of the PMU will require about 15 staff in the following positions: (i) project director; (ii) project manager; (iii) accountant; (iv) technical officer (3); (v) procurement officer (2); (vi) administration officer; (vii) social safeguards officer, and environmental safeguards officer; (viii) gender officer; and (ix) cashier; and (ix) three drivers (contract).
- General Department of Public Works (GDPW), MPWT
- will be assisted by the PIAC on project technical, safeguards, accounting and management on a daily basis as well as support the PIUs with project implementation and the PMU will be responsible for the following: (i) project management; (ii) assistance with bid preparation; (iii) assistance with technical designs for extended water supply networks; (iv) coordinating with other agencies and relevant projects; (v) procurement; (vi) contract supervision; (vii) project monitoring; (viii) project reporting; (ix) supervision of training activities; (x) managing of workshops; (xi) supervision of PIAC; (xii) financial management of Project; (xiii) supervision of PIUs; (xiv) communication with all stakeholders.
- Provincial Departments of Public Works (DPWTs)
- will be formed in the project towns, and will be responsible for (i) monitoring and reporting monthly to PMU on project progress; (ii) contract supervision; (iii) liaison with PIAC and PMU in implementation of training programs; (iv) coordinating with other provincial agencies; and (v) community communication.
 - the PIUs will have the following membership: (i) project manager; (ii) provincial department of public works and transport (DPWT) representative; (iii) accountant; (iv) technical officer; (v) administration officer; and (vi) social and environmental safeguards officer. Additional part-time staff may include (i) community coordinator or community awareness officer; and

(ii) secretary, as most of these tasks will be carried out by the PMU. A DPWT representative will a member of the PIU team, and where possible will hold the position of Project Manager with the Provincial Wastewater/Sanitation Director becoming the Technical Officer of the PIU

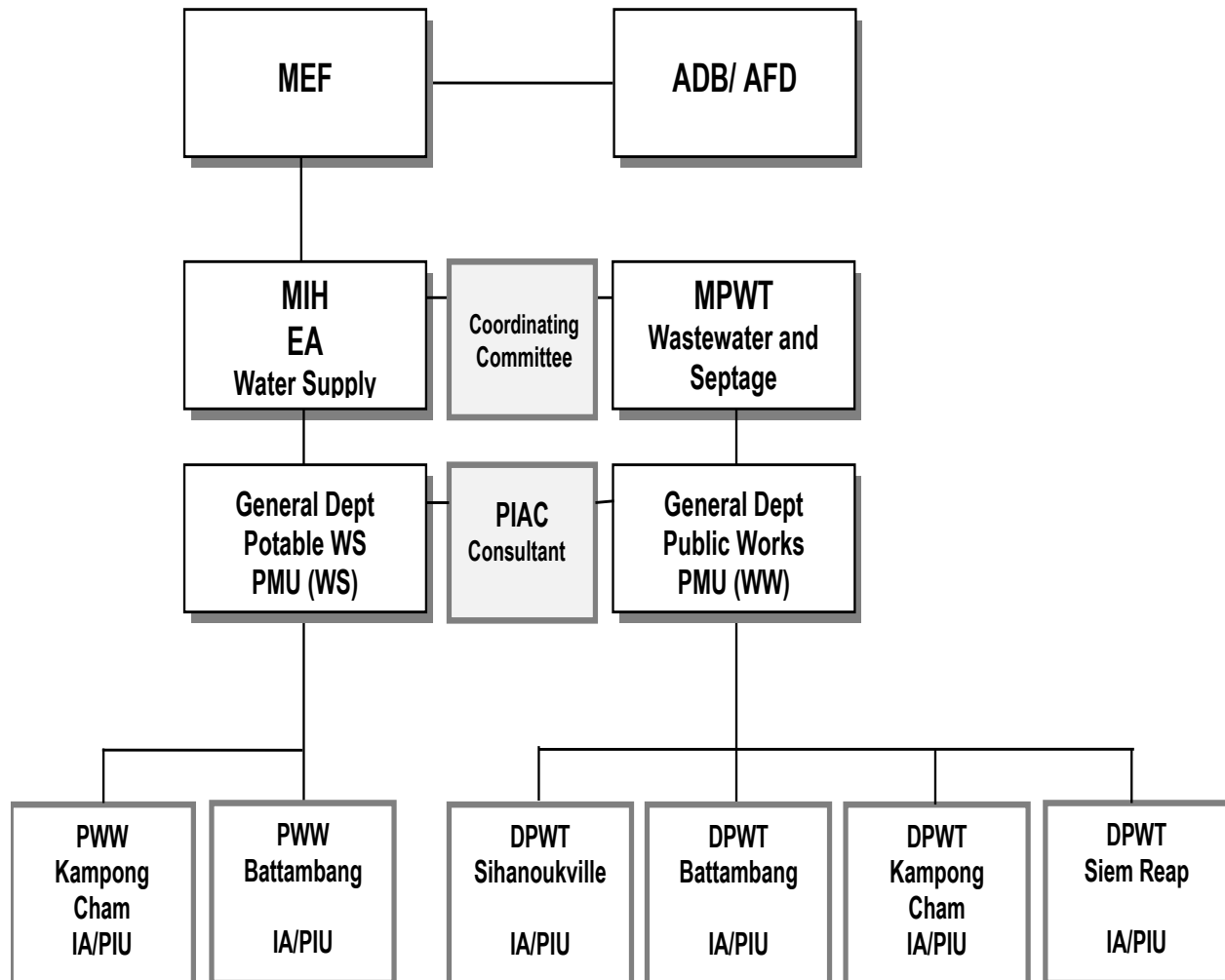
ADB

- Review and approve procurement and disbursement documents.
- conduct semi-annual reviews to assess; (i) overall project implementation; (ii) land acquisition and resettlement; (iii) environmental management; (iv) project expenditures, disbursements, and counterpart funding; (v) procurement and contract awards; (vi) compliance with the loan covenants; and (vii) likelihood of attaining the project's outputs and outcome.
- regularly update the project performance review reports with the assistance of executing agencies.
- ensure the compliance of financial audits recommendations
- regularly post on ADB web the updated project information documents for public disclosure, and also the safeguards documents as per disclosure provision of the ADB safeguards policy statement
- conduct a mid-term review to (i) assess need to restructure or reformulate the project, (ii) update the project's design and monitoring framework, and (iii) examine the need to extend the loan closing date.
- conduct a project completion mission to (i) evaluate the overall performance of project implementation, and (ii) assess whether the project has achieved the outcome anticipated at appraisal.

B. Key Persons Involved in Implementation

Executing Agency Ministry of Industry and Handicrafts	Officer's Name Position Telephone No. Email address Office Address	H.E. Ek Sonn Chan Secretary of State +855 23 213985 eksonnchan@hotmail.com 45 Norodom Boulevard Khan Daun Penh Phnom Penh
Implementing Agency Ministry of Public Works and Transport	Officer's Name Position Telephone No. Email address Office Address	H. E. Vong Pisith Deputy Director General +855 12 833 411 Vong_pisith@yahoo.com Cnr Norodom Boulevard and Street 108 Khan Daun Penh Phnom Penh
ADB Southeast Asia Department	Officer's Name Position Telephone No. Email address	Vijay Padmanabhan Director Urban Development and Water Division +632 632-6379 vpadmanabhan@adb.org
Mission Leader	Officer's Name Position Telephone No. Email address	Michael White Development Specialist (Water Supply and Sanitation) +632 632 579 mewwhite@adb.org

C. Project Organization Structure Add IA under MPWT.



ADB = Asian Development Bank, AFD = Agence Française de Développement, DPWT = department of public works and transport, EA = executing agency, IA = implementing agency, MEF = Ministry of Economy and Finance, MIH = Ministry of Industry and Handicrafts, MPWT = Ministry of Public Works and Transport, PIA = project implementation assistance (consultant), PIU = project implementation unit, PMU = project management unit.
Source: Asian Development Bank.

IV. COSTS AND FINANCING

22. The project is estimated to cost \$119.17 million (Table 1).

Table 1: Summary Cost Estimates (\$ million)

Item	Amount ^a
A. Base Costs^b	
1. Improved piped water supply	45.70
2. Improved sanitation	46.41
3. Improved institutional effectiveness	11.77
Subtotal (A)	103.88
B. Contingencies^c	13.91
C. Financing Charges During Implementation^d	1.38
Total (A+B+C)	119.17

^a Includes taxes and duties of about \$9.45 million, though exemption and cash. The government will pay value-added tax on civil works of about \$8.44 million in cash. The Agence Française de Développement loan, Asia Investment Facility grant, and the Japan Fund for the Joint Crediting Mechanism grant will not finance taxes and duties.

^b Prices as of August 2017.

^c Physical contingencies computed at 10% for civil works including field research and development, training, surveys, and studies. Price contingencies computed at 1.5% on foreign exchange costs and 3.5% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

^d Includes interest during construction computed at 1% per year on the Asian Development Bank loan and zero on the Agence Française de Développement loan.

Source: Asian Development Bank.

23. The government has requested (i) a concessional loan of \$50 million from ADB's ordinary capital resources, and (ii) a grant of \$10 million from JFJCM, funded by the Government of Japan and fully administered by ADB, to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan agreement. The summary financing plan is in Table 2.

Table 2: Summary Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank ordinary capital resources (concessional loan)	50.00	41.96
AFD (loan) ^a	43.54	36.54
JFJCM grant ^b	10.00	8.39
Government	10.54	8.84
EU–AIF grant ^c	5.09	4.27
Total	119.17	100.00

AFD = Agence Française de Développement, AIF = Asia Investment Facility, EU = European Union, JFJCM = Japan Fund for the Joint Crediting Mechanism

^a €40 million loan amount excludes administration fees and other charges as may be deducted pursuant to the cofinancing agreement. Partial administration by the Asian Development Bank (ADB).

^b ADB will provide procurement and disbursement services only.

^c €4.67 million grant, parallel collaborative cofinancing to be administered by AFD, which is integral to the delivery of the project outputs.

Source: Asian Development Bank.

24. ADB will finance the expenditures in relation to civil works, equipment, and capacity development. The AFD will provide loan cofinancing of €40 million, which is partially administered (procurement and disbursement) by ADB. The AFD loan will have a 20-year term, including a grace

period of 7 years; a tentative interest rate of 1.33% per year for the entire period of the loan.²⁰ The European Union (EU)–Asia Investment Facility (AIF) will provide a grant of €4.67 million, which is fully administered by the AFD.

25. Climate adaptation is estimated to cost \$1.73 million and the ADB loan will fully finance the adaptation costs. The adaptation measures will cover protection of subprojects from rains and floods, adoption of water safety plans for the design of water supply subprojects, and provision of public awareness and O&M training to manage water shortages during drought events. Climate mitigation is estimated to cost \$8.33 million and the JFJCM and EU–AIF grants will finance the mitigation costs. The mitigation measures will comprise installation of energy-efficient equipment in the WWTPs.

A. Cost Estimates Preparation and Revisions

26. The cost estimates were prepared by the Cities Development Initiatives for Asia technical assistance study team (TA 8556–REG: Pre-feasibility Studies and Preliminary Engineering – Provincial Water Supply and Sanitation Project). Project staff and implementation assistance consultants will revise costs in accordance with the detailed final designs.

B. Key Assumptions

27. The following key assumptions underpin the cost estimates and financing plan:

- (i) Exchange rate: KR4,000 = \$1.00 (as of 16 October 2017).
- (ii) Price contingencies based on expected cumulative inflation over the implementation period are as follows:

Table 4: Escalation Rates for Price Contingency Calculation

Item	2017	2018	2019	2020	2021	Average
Foreign rate of price inflation	1.4%	1.5%	1.5%	1.5%	1.5%	1.5%
Domestic rate of price inflation	3.4%	3.5%	3.5%	3.5%	3.5%	3.5%

Source: Asian Development Bank.

28. In-kind contributions were calculated based on current prevailing rates for salaries of project management staff and taxes and duties.

²⁰ Tentative interest rate provided by AFD, final figure may vary based on AFD's negotiations with the government.

C. DETAILED COST ESTIMATES BY EXPENDITURE CATEGORY

	(KR Million)			(US\$ '000)			% Total Base Costs
	Foreign	Local	Total	Foreign	Local	Total	
I. Investment Cost							
1. Plant and Civil Works							
1.1 Water Supply							
a. Battambang water supply	54,141	80,512	134,653	13,535	20,128	33,663	32
b. Kampong Cham water supply	19,806	28,344	48,151	4,952	7,086	12,038	12
Subtotal	73,947	108,856	182,804	18,487	27,214	45,701	44
1.2 Wastewater and Sanitation							
a. Battambang wastewater and sanitation	41,883	32,996	74,879	10,471	8,249	18,720	18
b. Sihanoukville wastewater and sanitation	20,454	30,681	51,135	5,114	7,670	12,784	12
c. Kampong Cham sanitation	703	1,054	1,757	176	263	439	0
d. Siem Reap wastewater	38,223	19,637	57,860	9,556	4,909	14,465	14
Subtotal	101,263	84,369	185,632	25,316	21,092	46,408	45
Subtotal	175,211	193,225	368,435	43,803	48,306	92,109	89
2. Land Acquisition and Resettlement	0	1,366	1,366	0	342	342	0
3. Vehicles and Equipment							
3.1 Battambang wastewater and sanitation	885	295	1,180	221	74	295	0
3.2 Sihanoukville wastewater and sanitation	885	295	1,180	221	74	295	0
3.3 Kampong Cham sanitation	690	230	920	173	58	230	0
3.4 Project implementation management	1,539	513	2,052	385	128	513	0
Subtotal	3,999	1,333	5,332	1,000	333	1,333	1
4. Capacity Building	1,777	2,665	4,442	444	666	1,110	1
5. Community Behaviour Change Communication	685	1,028	1,714	171	257	428	0
6. Consulting Services							
6.1 Consultants to support Battambang WWTP (JFJCM)	2,193	3,290	5,484	548	823	1,371	1
6.2 Project implementation assistance consultant	7,454	11,182	18,636	1,864	2,795	4,659	4
6.3 Consultants to support AFD Initiatives (AIF)	942	1,414	2,356	236	353	589	1
Subtotal	10,590	15,885	26,476	2,648	3,971	6,619	6
7. Project Implementation Management							
7.1 Salary	0	3,578	3,578	0	895	895	1
7.2 Office running costs	0	1,924	1,924	0	481	481	0
7.3 Vehicle running costs	1,673	596	2,268	418	149	567	1
Subtotal	1,673	6,098	7,770	418	1,524	1,943	2
Total BASE COSTS	193,935	221,600	415,535	48,484	55,400	103,884	100
II. Contingencies							
Physical Contingencies	18,811	21,107	39,919	4,703	5,277	9,980	10
Price Contingencies	6,999	8,716	15,714	1,750	2,179	3,929	4
Subtotal	25,810	29,823	55,633	6,452	7,456	13,908	13
Totals including Contingencies ((I) + (II))	219,744	251,423	471,168	54,936	62,856	117,792	113
Interest During Implementation	5,522	0	5,522	1,380	0	1,380	1
Total Disbursements	225,266	251,423	476,689	56,317	62,856	119,173	115

Notes: Base costs in August 2017 prices.

Physical contingencies computed at 10%; price contingencies computed at 1.4% in 2017, 1.5% in 2018 and thereafter for foreign currency costs; 3.4% in 2017, 3.5% in 2018 and thereafter for local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Source: Asian Development Bank estimates.

D. ALLOCATION AND WITHDRAWAL OF LOAN AND GRANT PROCEEDS

ALLOCATION AND WITHDRAWAL OF ADB LOAN PROCEEDS

Number	Item	Total Amount Allocated for ADB Financing (\$)		Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1	Water Supply	21,895,000		47.91% of total expenditure claimed
2	Wastewater and Sanitation	16,951,000		
2a	Battambang		4,594,000	24.54% of total expenditure claimed
2b	Sihanoukville		5,223,000	40.86% of total expenditure claimed
2c	Kampong Cham		199,000	45.40% of total expenditure claimed
2d	Siem Reap		6,935,000	47.94% of total expenditure claimed
3	Equipment and Consulting Services	2,871,000		52.70% of total expenditure claimed *
4	Project Administration	597,000		57.00% of total expenditure claimed
5	Interest Charge	1,381,000		100% of amounts due
6	Unallocated	6,305,000		
	Total	50,000,000		

* Excluding taxes and duties imposed within the territory of the Borrower

ALLOCATION AND WITHDRAWAL OF JFJCM GRANT PROCEEDS

Number	Item	Total Amount Allocated for JFJCM Financing (\$)		Basis for Withdrawal from the Grant Account
		Category	bcategory	
1	Wastewater and Sanitation (Battambang)	7,457,000		39.84% of total expenditure claimed
2	Consulting Services	1,246,000		100% of total expenditure claimed *
3	Unallocated	1,297,000		
	Total	10,000,000		

* Excluding taxes and duties imposed within the territory of the Borrower

ALLOCATION AND WITHDRAWAL OF AFD LOAN PROCEEDS

Number	Item	Total Amount Allocated for ADB Financing (\$)		Basis for Withdrawal from the Loan Account
		Category	Subcategory	
1	Water Supply	19,651,000		43.00% of total expenditure claimed
2	Wastewater and Sanitation	15,214,000		
2a	Battambang		4,123,000	22.02% of total expenditure claimed
2b	Sihanoukville		4,688,000	36.67% of total expenditure claimed
2c	Kampong Cham		179,000	40.75% of total expenditure claimed
2d	Siem Reap		6,224,000	43.03% of total expenditure claimed 43.03
3	Equipment and Consulting Services	2,576,000		47.30% of total expenditure claimed *
4	Project Administration	451,000		43.00% of total expenditure claimed
5	Unallocated	5,647,000		
	Total	43,539,000		

* Excluding taxes and duties imposed within the territory of the Borrower

E. Detailed Cost Estimates by Financier

(US\$ '000)	ADB Loan		AFD Loan		AIF Grant		JFJCM Grant		The Government		Total		Duties & Taxes
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
I. Investment Cost													
1. Plant and Civil Works													
1.1 Water Supply													
a. Battambang water supply	16,128	47.91	14,475	43.00	0	0.00	0	0.00	3,060	9.09	33,663	28.25	3,060
b. Kampong Cham water supply	5,767	47.91	5,176	43.00	0	0.00	0	0.00	1,094	9.09	12,038	10.10	1,094
Subtotal	21,895	47.91	19,651	43.00	0	0.00	0	0.00	4,155	9.09	45,701	38.35	4,155
1.2 Wastewater and Sanitation													
a. Battambang wastewater and sanitation	4,594	24.54	4,123	22.02	818	4.37	7,457	39.84	1,729	9.23	18,720	15.71	1,729
b. Sihanoukville wastewater and sanitation	5,223	40.86	4,688	36.67	1,684	13.17	0	0.00	1,189	9.30	12,784	10.73	1,189
c. Kampong Cham sanitation	199	45.40	179	40.75	0	0.00	0	0.00	61	13.85	439	0.37	61
d. Siem Reap wastewater	6,935	47.94	6,224	43.03	0	0.00	0	0.00	1,306	9.03	14,465	12.14	1,306
Subtotal	16,951	36.53	15,214	32.78	2,501	5.39	7,457	16.07	4,284	9.23	46,408	38.94	4,284
Subtotal	38,846	42.17	34,865	37.85	2,501	2.72	7,457	8.10	8,439	9.16	92,109	77.29	8,439
2. Land Acquisition and Resettlement	0	0.00	0	0.00	0	0.00	0	0.00	342	0.00	342	0.29	0
3. Vehicles and Equipment													
3.1 Battambang wastewater and sanitation	141	47.91	127	43.00	0	0.00	0	0.00	27	9.09	295	0.25	27
3.2 Sihanoukville wastewater and sanitation	141	47.91	127	43.00	0	0.00	0	0.00	27	9.09	295	0.25	27
3.3 Kampong Cham sanitation	110	47.91	99	43.00	0	0.00	0	0.00	21	9.09	230	0.19	21
3.4 Project implementation management	246	47.91	221	43.00	0	0.00	0	0.00	47	9.09	513	0.43	47
Subtotal	639	47.91	573	43.00	0	0.00	0	0.00	121	9.09	1,333	1.12	121
4. Capacity Building	0	0.00	0	0.00	1,009	90.91	0	0.00	101	9.09	1,110	0.93	101
5. Community Behaviour Change Communication	0	0.00	0	0.00	389	90.91	0	0.00	39	9.09	428	0.36	39
6. Consulting Services													
6.1 Consultants to support Battambang WWTP (JFJCM)	0	0.00	0	0.00	0	0.00	1,246	90.91	125	9.09	1,371	1.15	125
6.2 Project implementation assistance consultant	2,232	47.91	2,003	43.00	0	0.00	0	0.00	424	9.09	4,659	3.91	424
6.3 Consultants to support AFD Initiatives (AIF)	0	0.00	0	0.00	536	90.91	0	0.00	54	9.09	589	0.49	54
Subtotal	2,232	33.72	2,003	30.27	536	8.09	1,246	18.83	602	9.09	6,619	5.55	602
7. Project Implementation Management													
7.1 Salary	0	0.00	0	0.00	0	0.00	0	0.00	895	100.00	895	0.75	57
7.2 Office running costs	274	57.00	207	43.00	0	0.00	0	0.00	0	0.00	481	0.40	44
7.3 Vehicle running costs	323	57.00	244	43.00	0	0.00	0	0.00	0	0.00	567	0.48	52
Subtotal	597	30.75	451	23.20	0	0.00	0	0.00	895	46.05	1,943	1.63	152
Total BASE COSTS	42,314	40.73	37,893	36.48	4,436	4.27	8,703	8.38	10,538	10.14	103,884	87.17	9,454
II. Contingencies													
Physical Contingencies	4,524	45.33	4,051	40.59	474	4.75	930	9.32	0	0.00	9,980	8.37	0
Price Contingencies	1,781	45.33	1,595	40.59	187	4.75	366	9.32	0	0.00	3,929	3.30	0
Subtotal	6,305	45.33	5,646	40.59	661	4.75	1,297	9.32	0	0.00	13,908	11.67	0
Total PROJECT COSTS	48,619	41.28	43,539	36.96	5,097	4.33	10,000	8.49	10,538	8.95	117,792	98.84	9,454
Interest During Implementation	1,381	100.00	0	0.00	0	0.00	0	0.00	0	0.00	1,381	1.16	0
Total Disbursements	50,000	41.96	43,539	36.53	5,097	4.28	10,000	8.39	10,538	8.84	119,173	100.00	0

Notes: Base costs in August 2017 prices.

Physical contingencies computed at 10%; price contingencies computed at 1.4% in 2017, 1.5% in 2018 and thereafter for foreign currency costs; 3.4% in 2017, 3.5% in 2018 and thereafter for local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Source: Asian Development Bank estimates.

F. Detailed Cost Estimates by Outputs/Components

	(US\$ '000)	Output 1:	Output 2:	Output 3:	Total
		Water supply services improved	Sanitation Services Improved	Institutional effectiveness improved	
		Amount	Amount	Amount	
I. Investment Cost					
1. Plant and Civil Works					
1.1 Water Supply					
a. Battambang water supply		33,663			33,663
b. Kampong Cham water supply		12,038			12,038
Subtotal		45,701	0	0	45,701
1.2 Wastewater and Sanitation					
a. Battambang wastewater and sanitation			18,720		18,720
b. Sihanoukville wastewater and sanitation			12,784		12,784
c. Kampong Cham sanitation			439		439
d. Siem Reap wastewater			14,465		14,465
Subtotal		0	46,408	0	46,408
Subtotal		45,701	46,408	0	92,109
2. Land Acquisition and Resettlement		0	342		342
3. Vehicles and Equipment					
3.1 Battambang wastewater and sanitation			295		295
3.2 Sihanoukville wastewater and sanitation			295		295
3.3 Kampong Cham sanitation			230		230
3.4 Project implementation management				513	513
Subtotal		0	820	513	1,333
4. Capacity Building				1,110	1,110
5. Community Behaviour Change Communication				428	428
6. Consulting Services					
6.1 Consultants to support Battambang WWTP (JFJCM)				1,371	1,371
6.2 Project implementation assistance consultant				4,659	4,659
6.3 Consultants to support AFD Initiatives (AIF)				589	589
Subtotal		0	0	6,619	6,619
7. Project Implementation Management					
7.1 Salary				895	895
7.2 Office running costs				481	481
7.3 Vehicle running costs				567	567
Subtotal		0	0	1,943	1,943
Total BASE COSTS		45,701	47,569	10,613	103,884
II. Contingencies					
Physical Contingencies		4,390	4,570	1,020	9,980
Price Contingencies		1,728	1,799	401	3,929
Subtotal		6,119	6,369	1,421	13,908
Total PROJECT COSTS		51,820	53,938	12,034	117,792
Interest During Implementation		607	632	141	1,380
Total Disbursements		52,427	54,570	12,175	119,173

Notes: Base costs in August 2017 prices.

Physical contingencies computed at 10%; price contingencies computed at 1.4% in 2017, 1.5% in 2018 and thereafter for foreign currency costs; 3.4% in 2017, 3.5% in 2018 and thereafter for local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Source: Asian Development Bank estimates.

G. Detailed Cost Estimates by Year

(US\$ '000)	Base Costs						Total
	2017	2018	2019	2020	2021	2022	
Investment Cost							
1. Plant and Civil Works							
1.1 Water Supply							
a. Battambang water supply	0	329	9,849	16,238	7,247	0	33,663
b. Kampong Cham water supply	0	94	2,681	5,997	3,266	0	12,038
Subtotal	0	423	12,530	22,235	10,513	0	45,701
1.2 Wastewater and Sanitation							
a. Battambang wastewater and sanitation	0	82	4,934	9,979	3,725	0	18,720
b. Sihanoukville wastewater and sanitation	0	16	994	8,849	2,925	0	12,784
c. Kampong Cham sanitation	0	5	247	130	58	0	439
d. Siem Reap wastewater	0	13,408	1,057	0	0	0	14,465
Subtotal	0	13,511	7,231	18,958	6,707	0	46,408
Subtotal	0	13,934	19,761	41,193	17,220	0	92,109
2. Land Acquisition and Resettlement	0	342	0	0	0	0	342
3. Vehicles and Equipment							
3.1 Battambang wastewater and sanitation	0	0	0	0	295	0	295
3.2 Sihanoukville wastewater and sanitation	0	0	0	0	295	0	295
3.3 Kampong Cham sanitation	0	0	0	0	230	0	230
3.4 Project implementation management	513	0	0	0	0	0	513
Subtotal	513	0	0	0	820	0	1,333
4. Capacity Building	0	222	222	222	222	222	1,110
5. Community Behaviour Change Communication	0	86	86	86	86	86	428
6. Consulting Services							
6.1 Consultants to support Battambang WWTP (JFJC)	0	685	685	0	0	0	1,371
6.2 Project implementation assistance consultant	0	932	932	932	932	932	4,659
6.3 Consultants to support AFD Initiatives (AIF)	0	118	118	118	118	118	589
Subtotal	0	1,735	1,735	1,050	1,050	1,050	6,619
7. Project Implementation Management							
7.1 Salary	45	179	179	179	179	134	895
7.2 Office running costs	24	96	96	96	96	72	481
7.3 Vehicle running costs	28	113	113	113	113	85	567
Subtotal	97	389	389	389	389	291	1,943
Total BASE COSTS	610	16,707	22,192	42,939	19,786	1,649	103,884
Contingencies							
Physical Contingencies	0	1,591	2,140	4,228	1,913	109	9,980
Price Contingencies	0	135	561	1,890	1,232	112	3,930
Subtotal	0	1,726	2,700	6,118	3,145	221	13,910
Total PROJECT COSTS	610	18,433	24,892	49,057	22,931	1,870	117,794
Interest During Implementation	1	40	129	284	436	491	1,381
Total Disbursements	611	18,473	25,022	49,341	23,367	2,361	119,175

Notes: Base costs in August 2017 prices.

Physical contingencies computed at 10%.

Price contingencies computed at 1.4% in 2017, 1.5% in 2018 and thereafter for foreign currency costs; 3.4% in 2017, 3.5% in 2018 and thereafter for local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

Source: Asian Development Bank estimates

H. Contract and Disbursement S-curve

ADB Loan

Year	Contract Awards					Disbursements				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2018	0.000000	0.000000	9.412426	21.895349	31.307775	0.000000	0.000000	1.192311	3.385138	4.577449
2019	0.000000	0.000000	10.016736	0.392862	10.409598	2.837754	2.837754	3.839428	3.981872	13.496809
2020	0.000000	0.000000	0.000000	0.000000	0.000000	3.589010	2.548832	2.548832	2.548832	11.235504
2021	0.000000	0.000000	0.000000	6.304496	6.304496	2.548832	2.548832	2.548832	2.548832	10.195326
2022	0.000000	0.597130	0.000000	0.000000	0.597130	2.167580	2.167580	2.167580	1.290767	7.793506
2023	0.000000	0.000000	0.000000	0.000000	0.000000	1.290767	0.029638	0.000000	0.000000	1.320405
Total					48.619000					48.619000

Source: Asian Development Bank estimates.

JFJCM Grant

Year	Contract Awards					Disbursements				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2018	0.000000	0.000000	0.000000	1.245946	1.245946	0.000000	0.000000	0.000000	0.124595	0.124595
2019	0.000000	0.000000	7.458048	0.000000	7.458048	0.084105	0.084105	0.829910	0.643459	1.641578
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.643459	0.643459	0.643459	0.643459	2.573834
2021	0.000000	0.000000	0.000000	1.296007	1.296007	0.643459	0.643459	0.643459	0.643459	2.573834
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.855963	0.855963	0.855963	0.259245	2.827133
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.259026	0.000000	0.000000	0.000000	0.259026
Total					10.000000					10.000000

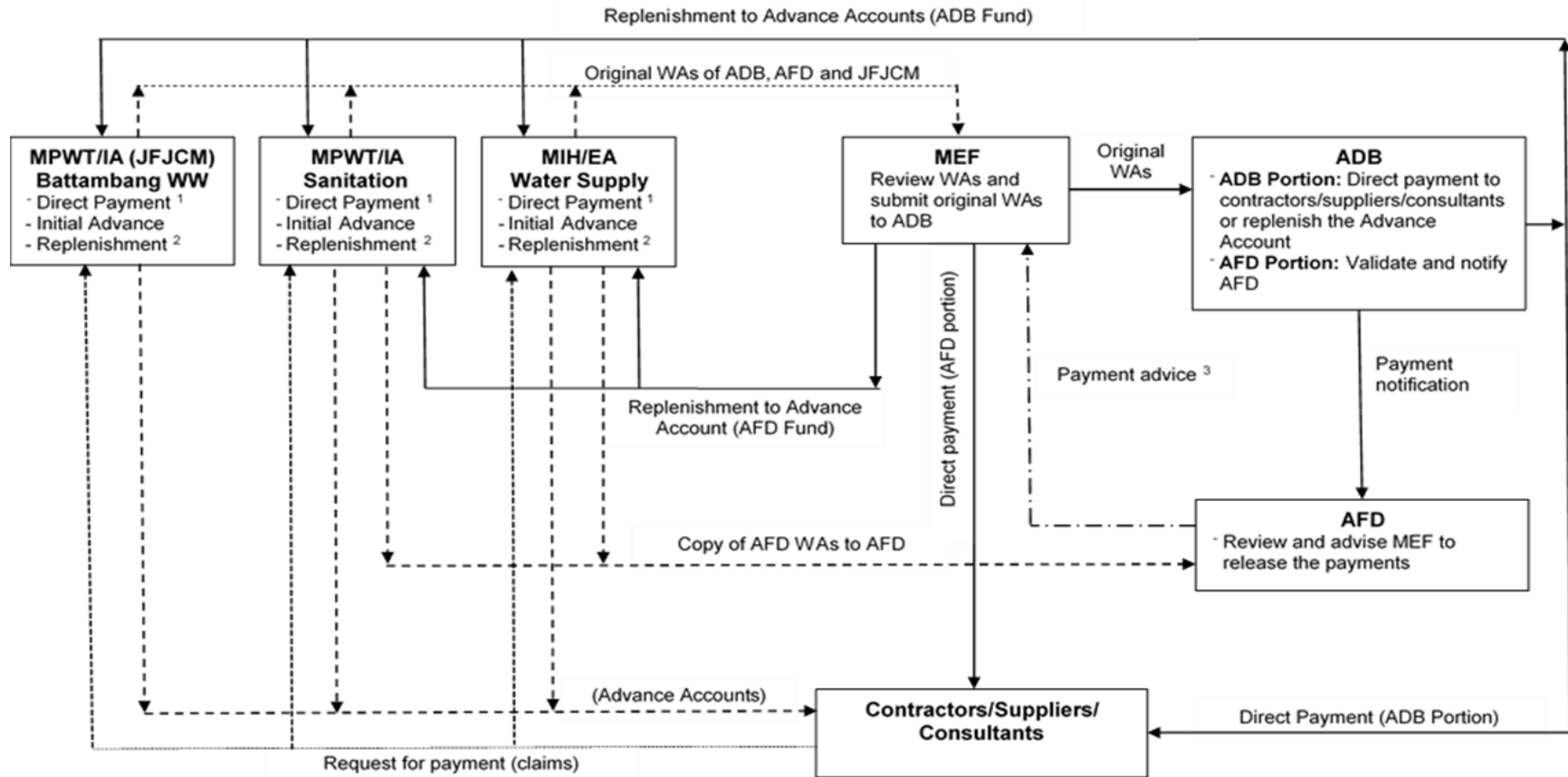
Source: Asian Development Bank estimates.

AFD Loan

Year	Contract Awards					Disbursements				
	Q1	Q2	Q3	Q4	Total	Q1	Q2	Q3	Q4	Total
2018	0.000000	0.000000	8.448250	19.651430	28.099680	0.000000	0.000000	1.065888	3.034008	4.099896
2019	0.000000	0.000000	8.988929	0.352600	9.341529	2.542722	2.542722	3.441615	3.569492	12.096552
2020	0.000000	0.000000	0.000000	0.000000	0.000000	3.216892	2.283249	2.283249	2.283249	10.066637
2021	0.000000	0.000000	0.000000	5.645257	5.645257	2.283249	2.283249	2.283249	2.283249	9.132994
2022	0.000000	0.452534	0.000000	0.000000	0.452534	1.938443	1.938443	1.938443	1.151583	6.966912
2023	0.000000	0.000000	0.000000	0.000000	0.000000	1.151583	0.024426	0.000000	0.000000	1.176009
Total					43.539000					43.539000

Source: Asian Development Bank estimates.

I. Funds Flow Diagram



Key:
 ADB _____
 AFD - - - - -
 MEF _____
 EA/IA - - - - -
 Contractors/Suppliers/Consultants - - - - -

For notes 1, 2, and 3 see text overleaf.

Note on Payments for Funds Flow:

- ¹ **Type of Payments – Direct Payment.** For ICB contract and or contract value above \$100,000 for civil works, goods and consulting services; direct payment shall be used. However, if each individual payment of that contract is less than \$100,000; it can be paid from the advance account.
- ² **Replenishment to the Advance Account.** SOE procedure is used for reimbursement of eligible expenditures and liquidation of advances to the Advance Account. The ceiling of SOE procedure is the equivalent of \$100,000 per individual payment. SOE records should be maintained and made readily available for review by ADB's disbursement and review mission or upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. Individual payments in excess of the SOE ceiling should be supported by submission of full supporting documentation when submitting the WAs to ADB.
- ³ **AFD's Payment Advice.** Full amount has been deposited to MEF account at the National Bank of Cambodia. After reviewing each WA, ADB will advise AFD to make necessary payment to MEF either release the direct payment to the contractors/suppliers/consultants or replenish the requested amount to AFD Advance Accounts of MPWT and MIH. AFD will promptly inform ADB once the payment, if any, has been made.

29. Additional notes on arrangements for AFD loan, based on joint cofinancing and partial administration by ADB, are summarized below:

- PIUs make no direct payments to contractors, consultants, or suppliers (sub-accounts are for project operating costs only).
- AFD will not make direct payments to contractors, consultants, or suppliers. AFD's funds transit through MEF's Project Account is for:
 - All direct payments to be made to contractors, consultants, and suppliers.
 - PMUs / PIUs project operating costs only.
- MEF undertakes that it (i) will not debit the Project Account without ADB's prior no-objection; (ii) will only make debit from the Project Account to pay eligible expenses
- MEF undertakes to provide AFD with bank statements of the Project Account on a monthly basis specifying for each use of funds, the reference of the contract, the amount, the name of the Contractors and the relevant invoices.
- Audits are undertaken annually by a single company contracted by MEF for all its projects:
 - Annual audit is global for the project, on all 4 involved bank accounts (or 3 if pass-through account is merged).
 - Audit results are followed-up by ADB.
 - This follow-up will now also cover MEF's Project Account from which all AFD's funds are disbursed, either to PMUs (running costs: office stationeries & furniture, petrol) or to contractors / consultants / suppliers.
 - The scope of work of the auditing company includes identification control of insufficiently justified and not justified disbursements, as well as compliance control of funds allocation and eligibility of project expenses.
- The AFD share of the loan will be applied to civil works, equipment and consultants. The value of ADB / AFD shares will be indicated on all contractors/supplier/consultants' invoices, according to the breakdown of each DFI's participation. Exceptions are:
 - Contracts or parts of contracts 100% financed under AIF grant to be invoiced separately to AFD. For the solar mixers and free sewerage connections however, which are part of the civil works contracts for Battambang and Sihanoukville wastewater subprojects), AFD will require approved invoices from the PMU / PIAC to document that the works have been carried out and completed.

V. FINANCIAL MANAGEMENT

A. Financial Management Assessment

30. The Financial Management Assessment (FMA) was conducted in accordance with ADB guidelines. The FMA covers the Ministry of Industry and Handicrafts (MIH) and the Ministry of Public Works and Transport (MPWT) as the Executing Agencies (EAs) for the water supply and sanitation components, respectively; the provincial Department of Industry and Handicrafts (DIH) at Battambang and Kampong Cham as the Implementing Agencies (IAs) for the water supply components at Battambang and Kampong Cham, respectively; and the provincial Department of Public Works and Transport at Battambang, Kampong Cham, Sihanoukville and Siem Reap as the IAs for the sanitation components at Battambang, Kampong Cham, Sihanoukville and Siem Reap, respectively. The objective of the assessment was to determine whether the entities implementing the project have acceptable financial management arrangements that can comply with ADB accounting and reporting requirements.

31. Based on the assessment, the financial management risks were identified and appropriate mitigation measures were commended in Table 3.

Table 3: Financial Management Risk Assessment and Mitigation Measures

Risk Type	Risk description	Risk and Impact	Likelihood	Mitigation Measures	Risk With Mitigation
Country-specific risks					
1. Public financial management risks	Weak PFM system, particularly accounting, budget preparation and execution, cash planning and performance measurement.	High – Chances of error and non-compliance with accounting and reporting requirements	Likely	ADB, World Bank and other development partners continue to support on-going efforts to strengthen PFM arrangements, through technical assistance and lending.	Moderate
	Shortage of skills in financial management, including financial analysis, management accounting, financial reporting and audit.	High – Chances of error and non-compliance with accounting and reporting requirements	Likely	On-going and planned efforts by ADB, World Bank and other development partners to support PFM reforms and capacity building in all PFM aspects.	Moderate

Risk Type	Risk description	Risk and Impact	Likelihood	Mitigation Measures	Risk With Mitigation
	Malpractice and abuse of PFM rules by employees.	Moderate – Chances of fraud or misappropriation of assets	Likely	Each Ministry has a Department of Inspectorate, whose role is to carry out the functions of an internal auditor within the Ministry, and ensure that government rules and regulations are observed at all times. The Standard Operating Procedures for all Externally Financed Projects/Programs in Cambodia (May 2012) outline the requirements for internal audit. Development partners continue to support on-going efforts to strengthen internal audit function within government units.	Low
Project-specific risks					
2. Government financing risks	Government may be unable to meet funding obligations due to budget constraints.	Moderate – Chances of project delay	Likely	Project financing plan has been formulated to limit government contribution to salaries of government counterpart staff, office space and taxes (government will issue tax exemption) to ensure affordable counterpart financing.	Low
3. Procurement risks	Procurement capacity is limited.	Moderate – Chances of project delay	Likely	PMU and PIU staff will be trained in ADB procurement guidelines. Support and training will be provided by a procurement consultant, member of the project implementation support consulting team.	Low
	Potential corruption from weak procurement oversight.	Moderate – Chances of fraud or misappropriation of assets	Likely	Standard ADB bidding documents and procedures will be used. Grievance redress procedures, including misuse of funds, will be published on the project website, and mechanisms put in place to address any grievances received.	Low
4. Funds flow	Funds may not reach intended beneficiaries in a timely manner.	Moderate – Chances of project delay	Likely	ADB disbursement arrangements, which have been tested in prior ADB projects and proven successful, will be used.	Low

Risk Type	Risk description	Risk and Impact	Likelihood	Mitigation Measures	Risk With Mitigation
5. Staffing	PMUs and PIUs have limited staff capability in financial management, accounting, budgeting, internal controls and financial reporting.	Moderate - Chances of error and non-compliance with accounting and reporting requirements	Likely	Experienced and qualified staff shall be appointed in the PMUs and PIUs. Staff will be trained in ADB project accounting and reporting requirements. Support and training will be provided by a financial management consultant, member of the project implementation support consulting team.	Low
6. Accounting policies and procedures	Maintenance of project accounts does not meet ADB requirements.	Moderate – Chances of delay in complying with ADB accounting and reporting requirements	Unlikely	Accounting system will adhere to generally accepted accounting principles and international standards. Separate project accounts will be used to identify the: (i) goods and services financed from loan proceeds; (ii) financing resources received; (iii) expenditures incurred on each component; and (iv) counterpart and co-financier funds received and expended.	Low
7. Internal audit	Weak capacity in the Internal Audit department at ministries and provinces.	Moderate – Chances of fraud or misappropriation of assets	Unlikely	Adequate internal control procedures and timely annual external audit are mandatory for the project during implementation.	Low
8. External audit.	Delay in the submission of externally audited project accounts due to heavy workload of the NAA; annual audit may not meet ADB requirements.	Moderate – Chances of delay in complying with ADB audit requirements	Likely	PMUs will recruit an external auditor whose qualifications, experience and TOR are acceptable to ADB; external audit will be in accordance with international auditing standards.	Low
9. Reporting and monitoring	Unreliable reports due to errors and limited staff capability in ADB financial reporting requirements.	Moderate - Chances of error and non-compliance with ADB reporting requirements	Likely	Experienced and qualified staff shall be appointed in the PMUs and PIUs. Staff will be trained in ADB project accounting and reporting requirements. Support and training will be provided by a financial management consultant, member of the project implementation support consulting team.	Low

Risk Type	Risk description	Risk and Impact	Likelihood	Mitigation Measures	Risk With Mitigation
10. Information systems	Accounting data not adequately safeguarded.	Moderate – Chances of loss of accounting data	Likely	PMUs and PIUs will undertake regular backups of all financial, accounting and project related data and appropriate security measures over backed-up data shall be in place.	Low
Overall Risk		Moderate			Low

ADB = Asian Development Bank; PMU = project management unit; PIU = project implementation unit; NAA = National Audit Authority; TOR = Terms of Reference
Source: Asian Development Bank.

32. The proposed time-bound action plan is outlined below.

Table 1: Time-Bound Action Plan

Weakness	Mitigation Action	Responsibility	Timeframe
No experience in implementing projects funded by ADB; Lack of knowledge in ADB procurement, disbursement and reporting guidelines and procedures may result to project delay and non-compliance with ADB project requirements	Start-up/Procurement Specialist will be recruited to assist the PMUs in the (i) recruitment of consultants and (ii) preparing for project procurement in compliance with Project documents	PMUs	Before loan effectiveness
	PIAC will be recruited to support the PMUs and PIUs implement the project. The PIAC will provide a range of specialties (including Financial and Accounting Specialist) needed to support in the implementation of the project and meet the reporting and procedural requirements of ADB and government	PMU	Upon mobilization of Start-up/Procurement Specialist
	Key PMU and PIU staff will attend ADB training on procurement, disbursement and financial reporting	PMUs/PIUs/ADB	Before loan effectiveness
	On-the-job training and classroom presentations on financial management, project accounting and financial reporting will be provided to PMU and PIU accounts staff	PIAC	During project implementation
PMUs and PIUs are still to be established. The experience, qualifications and capacity of staff to be assigned to the PMUs and PIUs are not known. Assigning	The PMUs and PIUs will provide ADB with the terms of reference (TOR) and curriculum vitae (CV) of all of proposed PMUs' and PIUs' key and professional staff for	PMUs/PIUs/ADB	Before loan effectiveness

Weakness	Mitigation Action	Responsibility	Timeframe
unqualified staff to the PMUs and PIUs may result to project delay and non-compliance with ADB project requirements	ADB's review and concurrence prior to assigning and staffing		

B. Disbursement

1. Disbursement Arrangements for ADB, JFJCM and AFD Fund

33. The ADB loan, JFJCM grant, and AFD proceeds will be disbursed in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time), and detailed arrangements agreed upon between the government and ADB. Online training for project staff on disbursement policies and procedures is available.²¹ Project staff members are encouraged to avail themselves of this training to help ensure efficient disbursement and fiduciary control.

34. The government will establish separate pass-through account for each financing source at the National Bank of Cambodia to receive funds from ADB loan resources.

35. **Advance Fund Procedure.** To ensure the timely release of loan proceeds and to expedite project implementation, the government will, immediately upon loan effectiveness, open and maintain two separate advance accounts for ADB loans (one for water supply and another one for sanitation), one advance account for JFJCM grant, two separate advance accounts for AFD loan (one for water supply and another one for sanitation) at a commercial bank.²² The PMU (MIH-GDPWS) will be responsible for managing, replenishing, and liquidating the advance account for water supply and the PMU (MPWT-GDPW) will be responsible for the advance account for sanitation. The currency of the respective advance account is the US dollar. The advance accounts are to be used exclusively for the respective financing source's share of eligible expenditures. These will be used to meet national level project costs including consulting services contracts and subproject works. The PMU who established the advance account in its name is accountable and responsible for proper use of advances to the advance account, including advances to the sub-accounts. Since the contract will be financing jointly, disbursement procedures for AFD, including consulting services, will follow ADB procedures.

36. The total outstanding advances to the respective advance account should not exceed the estimate of the respective financing source's share of expenditures to be paid through the respective advance account for the forthcoming 6 months. The PMU may request for the initial and additional advances to the respective advance account based on an Estimate of Expenditure Sheet²³ setting out the estimated expenditures to be financed through the respective advance account for the forthcoming 6 months. Supporting documents should be submitted to ADB or retained by the borrower (PMU) in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) when liquidating or replenishing the advance accounts.

37. The advance account (water supply) will be used to establish advances in 2 separate sub-accounts for water supply at the PIUs in Battambang and Kampong Cham. The advance

²¹ Disbursement eLearning. http://wpqr4.adb.org/disbursement_elearning

²² Any interest accrued shall be used for the project.

²³ Estimate of Expenditure sheet is available in Appendix 8A of ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

account (sanitation) will be used to establish advances in 4 separate sub-accounts for sanitation at the PIUs in Battambang, Kampong Cham, Sihanoukville and Siem Reap. The sub-accounts will be established in a commercial bank. The sub-accounts are to be used exclusively for the respective financing source's share of eligible expenditures. Sub-accounts are intended to provide cash resources for the operations of the PIUs, and will be liquidated and replenished in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

38. For disbursements from the AFD Loan the Borrower shall be requested to submit: (i) to ADB, one original of the Withdrawal Application (WA) and copies of required supporting documents; and (ii) to AFD, one original of the WA and copies signed by the Borrower of the required supporting documents. Notwithstanding subparagraph (ii) above, provided that one set of originals of the required supporting documents shall be retained by the Borrower, another set of such original documents shall be submitted to AFD, instead of copies. ADB shall review each WA and advise AFD to make the necessary payment if any, requested in such WAs, subject to approval by AFD. AFD will promptly inform ADB once the payment has been made. In case AFD rejects the payment requested in the WA, it shall promptly inform ADB and the Borrower in writing of its decision and the basis for such decision. ADB shall not be held liable for any decision made by AFD with respect to payments requested in such WAs and any delay in disbursement outside of ADB's control. Procedures stipulated above will be updated based on mutual written agreement between the institutions.

39. **Statement of Expenditure Procedure.**²⁴ The SOE procedure may be used for reimbursement of eligible expenditures or liquidation of advances to the advance accounts. The ceiling of the SOE procedure is the equivalent of \$100,000 per individual payment. Supporting documents and records for expenditures claimed under the SOE should be maintained and made readily available for review by ADB's disbursement and review missions, upon ADB's request for submission of supporting documents on a sampling basis, and for independent audit. Reimbursement and liquidation of individual payments in excess of the SOE ceiling should be supported by full documentation when submitting the withdrawal application to ADB. The PMUs will be responsible for ensuring that SOEs are operated in accordance with ADB's requirement.

40. Before the submission of the first withdrawal application, the MEF should submit to ADB sufficient evidence of the authority of the person(s) who will sign the withdrawal applications on behalf of the borrower, together with the authenticated specimen signatures of each authorized person. The minimum value per withdrawal application is stipulated in the *Loan Disbursement Handbook* (2017, as amended from time to time). Individual payments below this amount should be paid (i) by the EA/IA and subsequently claimed to ADB through reimbursement, or (ii) through the advance fund procedure, unless otherwise accepted by ADB. The borrower should ensure sufficient category and contract balances before requesting disbursements.

2. Disbursement Arrangements for Counterpart Fund

41. The PMU will be responsible for the disbursement and liquidation procedures for government funds and will (i) prepare disbursement projections, and (ii) request budgetary allocations for counterpart funds. The government will finance all taxes and duties including insurance for all cost categories except civil works. Project management staff salaries and supplements will also be covered by counterpart funds. Appendixes 3A and 3B of the ADB's *Loan Disbursement Handbook* (2015, as amended from time to time) provide further guidance on the

proper presentation of local taxes and duties financing in the detailed cost estimate by financier and allocation table in the loan agreement.

42. The PMU completes the Government Withdrawal Application Form and attaches a statement of actual expenditure. Supporting expenditure documentation must be maintained by the project team for subsequent review by MEF or audit. The Government Withdrawal Application Form must be signed by the authorized signatories of the MIH and MPWT and submitted to the Department of Multilateral Cooperation (DMC) of the General Department of International Cooperation and Debt Management (GDICDM) at the MEF. The government withdrawal application must be recorded in the Project Counterpart Funds WA Register.

43. The DMC will review the completed forms and transfers the funds to the project's counterpart fund account, and advises the MIH and MPWT of the transfer. On receipt of advice from the National Bank of Cambodia (NBC) that the funds have been deposited into the counterpart funds account, the receipt of the funds should be recorded in the General Ledger and the Government WA Register must be up-dated.

C. Accounting

44. The PMUs and PIUs will maintain separate project accounts and records by funding source for all expenditures incurred on the project. The PMUs will prepare project financial statements in accordance with government accounting laws and regulations which are consistent with international accounting principles and practices.

D. Auditing and Public Disclosure

45. The PMUs will cause the detailed consolidated project accounts²⁵ to be audited in accordance with International Standards on Auditing by an independent auditor acceptable to ADB. The audited accounts, together with the auditor's opinion, will be submitted in the English language to ADB within six months of the end of the fiscal year by the executing agency. The annual audit report will include a management letter and auditor's opinions, which cover (i) whether the project financial statements present an accurate and fair view or are presented fairly, in all material respects, in accordance with the applicable financial reporting standards; (ii) whether the proceeds of the grant and loan were used only for the purpose(s) of the project; and (iii) whether the borrower or executing agency was in compliance with the financial covenants contained in the legal agreements (where applicable).

46. Compliance with financial reporting and auditing requirements will be monitored by review missions and during normal program supervision, and followed up regularly with all concerned, including the external auditor.

47. The government and the PMUs have been made aware of ADB's policy on delayed submission, and the requirements for satisfactory and acceptable quality of the audited accounts (covering failure of submitting audited accounts and financial statements by the due dates). ADB reserves the right to require a change in the auditor (in a manner consistent with the constitution of the borrower), or for additional support to be provided to the auditor, if the audits required are not conducted in a manner satisfactory to ADB, or if the audits are substantially delayed. ADB reserves the right to verify the project's financial accounts to confirm that the share of ADB's financing is used in accordance with ADB's policies and procedures.

²⁵ Refer also to para 28.

48. Public disclosure of the audited project financial statements, including the auditor's opinion on the project financial statements, will be guided by ADB's Public Communications Policy 2011.²⁶ After the review, ADB will disclose the audited project financial statements and the opinion of the auditors on the project financial statements no later than 30 days of ADB's confirmation of their acceptability by posting them on ADB's website. The management letter, additional auditor's opinions, and audited entity financial statements will not be disclosed.²⁷

²⁶ Public Communications Policy: <http://www.adb.org/documents/pcp-2011?ref=site/disclosure/publications>.

²⁷ This type of information would generally fall under public communications policy exceptions to disclosure. ADB. 2011. *Public Communications Policy*. Paragraph 97(iv) and/or 97(v).

VI. PROCUREMENT AND CONSULTING SERVICES

A. Advance Contracting

49. All procurement of goods and works will be undertaken in conformity with ADB Procurement Guidelines (2015, as amended from time to time) and ADB's Guidelines on the Use of Consultants (2013, as amended from time to time). The issuance of invitations to bid under advance contracting will be subject to ADB approval. The borrower has been advised that approval of advance contracting and retroactive financing does not commit ADB to finance the project.

50. **Advance contracting.** Recruitment of the Project Implementation Assistance Consultants (PIAC) will be started in parallel with loan processing, to allow commencement of services as soon as possible after loan effectiveness. Preparation of bidding documents for three subprojects, will commence in parallel with loan processing, and procurement of contractors and bidding for civil works will be started for at least one package with the following priority, assisted by the PPTA consultants:

- (i) Siem Reap interceptor sewer rehabilitation: ICB, design-build contract, single stage two envelope.
- (ii) Battambang water treatment plant and distribution network: ICB, Design-build contract, single stage two envelope.
- (iii) Kampong Cham water treatment plant and distribution network: ICB, Design-build contract, single stage two envelope.

B. Procurement of Goods, Works and Consulting Services

51. All procurement of goods and works will be undertaken in accordance with ADB's Procurement Guidelines, (2015, as amended from time to time). Except as ADB may otherwise agree, the thresholds in the table in the following Procurement Plan will apply to procurement of goods and works.

52. The procurement plan shall be updated annually or as required after every loan review mission or after award of each major International Competitive Bid (ICB) contract.

53. **Modification in Civil Works Contracts.** For any contract variation, which would in aggregate increase in the original contract amount by more than 15%, the EA shall provide detailed justification and seek no-objection from ADB on the proposed contract variation. If the proposed variation is inconsistent with the procurement plan and the provision of the financing agreement, the ADB shall promptly advise the EA stating the reasons for its position. The EA shall furnish the ADB all amendments to the contracts for civil works for legal and record purposes

54. The PIAC consultants for the design and engineering review, tendering assistance, and construction management are provided under the loan financing and will be selected in advance and engaged in accordance with the ADB's Guidelines on the Use of Consultants (2013, as amended from time to time).

C. Procurement Administration for the AFD Loan

55. Procurement of goods, works, and services under the Project to be financed out of the proceeds of the Cofinanciers' Loans shall be subject to the provisions of ADB's Procurement Guidelines (2015, as amended from time to time).

56. Selection, engagement and services of the consultants under the Project to be financed out of the proceeds of the Cofinanciers' Loans shall be subject to the provisions of the Guidelines on the Use of Consultants by Asian Development Bank and Its Borrowers (2013, as amended from time to time).

57. ADB shall review and approve the procurement of goods, works, and services, and selection, engagement and services of the consultants to be financed out of the proceeds of the Cofinanciers' Loans (including, without limitation, all documents relating to the procurement of goods and services, and selection, engagement and services of the consultants) in accordance with the ADB's Procurement Guidelines and the Guidelines on the Use of Consultants by Asian Development Bank and Its Borrowers referred in paras 55 and 56.

58. ADB acknowledges that AFD's activities have to comply with specific regulations imposing restrictive measures against certain persons, groups or entities. As such, ADB shall promptly advise AFD of the list of short listed or a proposal for award persons, groups or entities for procurement to be cofinanced for its review, and AFD shall convey to ADB any objection within fifteen (15) calendar days from the date of ADB's communication, in which case ADB and AFD shall consult to determine the appropriate course of action. In the absence of any information from AFD within the above time period, the short list or a proposal for award shall be considered approved by AFD. ADB further acknowledges that pursuant to its corresponding loan agreements with borrowers, AFD shall not be able to finance contracts to be executed by such ineligible persons, groups or entities.

59. ADB shall ensure that appropriate references to AFD are made in Procurement Notices to be published at ADB's website and documentation relating to the contracts under the Cofinanciers' Loans. AFD shall reciprocate in its relevant procurement notices and documentation. For national competitive bidding, advertising may be limited to the national press or official gazette, or a free and open access website, as applicable. ADB will send the Procurement Notices to AFD only if the executing agency requests ADB to publish Procurement Notices. Subject to timely submission of relevant information by the executing agency, *ADB shall send to AFD such procurement notices two (2) weeks before publication on the ADB website to enable AFD to publish such procurement notices.*

D. Procurement Plan

Basic Data

Project Name: Provincial Water Supply and Sanitation Project	
Loan No./ Project No. 48158-002	Approval No. -----
Country: Kingdom of Cambodia	Executing Agency: Ministry of Industry and Handicrafts (MIH)
Project Procurement Classification: Category B	Implementing Agencies: Provincial Public Waterworks (PWW), and Departments of Public Works and Transport (DPWT)
Project Financing Amount: USD 108.6 million ADB Financing: \$50.0 million (46.0%) Non ADB Financing: \$58.6 million (54.0%)	Project Closing Date : 30 June 2023

Date of First Procurement Plan: 6 June 2017	Date of This Procurement Plan: 27 October 2017
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ii. **Methods, Thresholds, Review and 18-Month Procurement Plan**

XI. Procurement and Consulting Methods and Thresholds

60. Except as the Asian Development Bank (ADB) may otherwise agree, the following process thresholds shall apply to procurement of goods and works.

Procurement of Goods and Works

Method	Threshold
International Competitive Bidding (ICB) for Works	\$3,000,000 and above
International Competitive Bidding (ICB) for Goods	\$1,000,000 and above
National Competitive Bidding (NCB) for Works	Beneath that stated for ICB Works
National Competitive Bidding (NCB) for Goods	Beneath that stated for ICB
Shopping for Works	Below \$ 100,000
Shopping for Goods	Below \$ 100,000

Consulting Services

Method	Comments
Quality- and Cost-Based Selection (QCBS)	QCBS 80:20 (PIAC consultants)
Individual Consultant Selection (ICS)	Start-up and associated support, procurement and advance actions for design-build packages.

XII. Goods and Works Contracts Estimated to Cost \$ 1 Million or more

61. The following table lists goods and works contracts for which the procurement activity is either ongoing or expected to commence within the next 18 months. The costs are base costs excluding physical and price contingencies.

Package No.	General Description	No. of Packages	Estimated Value (\$ million)	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/ year)	Comments
PWSSP/MPWT-01	Siem Reap Trunk Sewer	1	14.465	ICB	Prior	Design-Build 1S2E	Q4/2017	Advance Contracting: Yes; Pre-qualification: No; Bidding Document: ADB Design-Build; Domestic preference applicable: No; Contract Completion Period: 15 months;
PWSSP/MPWT-02	Wastewater Treatment Plants at Battambang and Sihanoukville and Septage Treatment facility at Kampong Cham	1	16.367	ICB	Prior	Design-Build 1S2E	Q3/2018	Advance Contracting: No; Pre-qualification: Yes; Bidding Document: ADB Design-Build; Domestic preference applicable: No; Contract Completion Period: 36 months;

Package No.	General Description	No. of Packages	Estimated Value (\$ million)	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/ year)	Comments
PWSSP /MPWT-03	Battambang and Sihanoukville sewerage networks	1	15.848	ICB	Prior	1S1E	Q4/2018	Advance Contracting: No ; Pre-qualification: No; Bidding Document: SBD Works (Large); Domestic preference applicable: No; Contract Completion Period: 36 months;
PWSSP /MIH-01	Battambang water treatment plant and distribution network	1	35.224	ICB	Prior	Design-Build 1S1E	Q4/2017	Advance Contracting: Yes ; Pre-qualification: Yes; Bidding Document: ADB Design-Build; Domestic preference applicable: No; Contract Completion Period: 30 months;
PWSSP /MIH-02	Kampong Cham water treatment plant and distribution network:	1	10.183	ICB	Prior	Design-Build 1S1E	Q4/2017	Advance Contracting: Yes ; Pre-qualification: Yes; Bidding Document: ADB Design-Build; Domestic preference applicable: No;

								Contract Completion Period: 30 months;
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ICB = international competitive bidding;

XIII. Consulting Services Contracts Estimated to Cost \$ 100,000 or more

62. The following table lists consulting services contracts for which recruitment activity is either ongoing or expected to commence within the next 18 months.

Package No.	General Description	No. of Packages	Estimated Value (\$ million)	Procurement Method	Review (Prior/ Post)	Bidding Procedure	Advertisement Date (quarter/ year)	Comments
PWSSP /C1a & C1b	Project Implementation & Assistance Consultants (PIAC) firm	2	5.032	QCBS (80:20)	Prior	FTP	Q4/2017	Advance Contracting: Yes; Assignment: International; Contract Duration: 48 months;
PWSSP /C2	JFJCM Design and Capacity Development	1	1.480	QCBS (80:20)	Prior	FTP	Q4/2017	Advance Contracting: Yes; Assignment: International; Contract Duration: 36 months;
PWSSP /C3	JFJCM Independent Technical Audit	1	0.100	LCS	Prior	STP	Q4/2018	Advance Contracting: No; Assignment: International; Contract Duration: 12 months;
PWSSP /C4	Financial Management/ Accounting Specialist	1	0.154	ICS	Prior	n/a	Q1/2018	Advance Contracting: No; Assignment: National; Contract Duration: 44 months;

QCBS = quality- and cost-based selection method; FTP = full technical proposal; STP = simplified technical proposal;
ICS = individual consultants selection; NA = not applicable;

iii. **Goods and Works Contracts Estimated to Cost Less than \$1 million and Consulting Services Contracts Less than \$ 100,000**

63. The following table groups smaller-value goods, works and consulting services contracts for which procurement/ recruitment activity is either ongoing or expected to commence within the next 18 months.

XI. Goods and Works

Package No.	General Description	No. of Packages	Estimated Value (\$ million)	Procurement Method	Review (Prior/	Bidding Procedure	Advertisement Date (quarter/	Comments
PWSSP/MPWT-04	Procurement of Septage Management Equipment	1	0.820	NCB	Post	1S1E	Q3/2018	Multiple Contracts, to be confirmed during DED Advance Contracting: No; Pre-qualification: No;
PWSSP/MPWT-05	Procurement of 24 motorcycles	1	0.048	Shopping	Post		Q1/2018	Advance Contracting: No; Delivery Period: 2 months
PWSSP/MIH-03 & MPWT-06	Procurement of 11 pick-up vehicles	2	0.385	NCB	Prior	1S1E	Q1/2018	Advance Contracting: No; Pre-qualification: No; Delivery Period: 2 months
PWSSP/MIH-04 & 05 MPWT-07 & 08	Office equipment, furniture etc.	4	0.130	Shopping	Post		Q1/2018	Advance Contracting: No; Three Contracts.

Consulting Services

Package No.	General Description	No. of Packages	Estimated Value (\$ million)	Procurement Method	Review (Prior/)	Bidding Procedure	Advertisement Date (quarter/)	Comments
C5	Procurement Specialist	1	0.042	ICS	Prior	Q1/2018	n/a	Advance Contracting: No; Assignment: National; Contract Duration: 12 months;

ICS = individual consultant selection method acceptable to ADB; NA = not applicable

iv. List of Awarded and On-going, and Completed Contracts

64. The following table lists the awarded and on-going contracts, and completed contracts.

XI. Awarded and On-going Contracts

Goods and Works

General Description	Contract Value (\$ million)	Procurement Method	Advertisement Date (quarter/year)	Date of ADB Approval of Contract Award	Scheduled Date of Completion	Comments

Consulting Services

General Description	Contract Value (\$ million)	Recruitment Method	Advertisement Date (Quarter/ year)	Date of ADB Approval of Contract Award	Scheduled Date of Completion	Comments

XII. Completed Contracts

Goods and Works

General Description	Contract Value (\$ million)	Procurement Method	Advertisement Date (quarter/ year)	Date of ADB Approval of Contract Award	Date of Completion	Comments

Consulting Services

General Description	Contract Value (\$ million)	Recruitment Method	Advertisement Date (Quarter/ year)	Date of ADB Approval of Contract Award	Date of Completion	Comments

2. National Competitive Bidding

i. Regulation and Reference Documents

65. The procedures to be followed for national competitive bidding shall be those set forth for the “National Competitive Bidding” method in the Government’s Procurement Manual issued under Sub-Decree Number 74 ANKR.BK, updated version dated 22 May 2012 with the clarifications and modifications described in the following paragraphs. These clarifications and modifications are required for compliance with the provisions of the Procurement Guidelines.

66. For the procurement of ADB financed contracts under National Competitive Bidding (NCB) procedures, the use of harmonized national bidding documents (NCB and National Shopping) developed in consultation with development partners including ADB, is mandatory except where the Government and ADB have agreed to amendments to any part of the documents. The Procurement Manual also advises users to check the ADB website from time to time for any update on ADB documents, which form the basis, among others, of the existing harmonized national bidding documents.

3. Procurement Procedures

i. Application

67. Contract packages subject to National Competitive Bidding procedures will be those identified as such in the project Procurement Plan. Any change to the mode of procurement of any procurement package in the Procurement Plan shall be made through updating of the Procurement Plan, and only with prior approval of ADB.

ii. Sanctioning

68. Bidders shall not be declared ineligible or prohibited from bidding on the basis of barring procedures or sanction lists, except individuals and firms sanctioned by ADB, without prior approval of ADB.

iii. Rejection of all Bids and Rebidding

69. The Borrower shall not reject all bids and solicit new bids without ADB’s prior concurrence. Even when only one or a few bids is/are submitted, the bidding process may still be considered valid if the bid was satisfactorily advertised and prices are reasonable in comparison to market values.

iv. Advertising

70. Bidding of NCB contracts shall be advertised on the ADB website via the posting of the Procurement Plan. Borrowers have the option of requesting ADB to post specific notices in the ADB website.

4. Bidding Documents

i. Use of Bidding Documents

71. The Standard National Competitive Bidding Documents provided with the Government’s Procurement Manual shall be used to the extent possible both for the master bidding documents and the contract-specific bidding documents. The English language version of the procurement documents shall be submitted for ADB review and approval in accordance with agreed review procedures (post and prior review) as indicated in the Procurement Plan. The ADB-approved

procurement documents will then be used as a model for all procurement financed by ADB for the project.

ii. Bid Evaluation

72. Bidders shall not be eliminated from detailed evaluation on the basis of minor, non-substantial deviations.

73. A bidder shall not be required, as a condition for award of contract, to undertake obligations not specified in the bidding documents or otherwise to modify the bid as originally submitted.

iii. Employer's Right to Accept or Reject Any or All Bids

74. The decision of the Employer to accept or reject any or all bids shall be made in a transparent manner and involve an obligation to inform of the grounds for the decision through the bid evaluation report.

iv. ADB Policy Clauses

75. A provision shall be included in all NCB works and goods contracts financed by ADB requiring suppliers and contractors to permit ADB to inspect their accounts and records and other documents relating to the bid submission and the performance of the contract, and to have them audited by auditors appointed by ADB.

76. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that the Borrower shall reject a proposal for award if it determines that the bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the contract in question.

77. A provision shall be included in all bidding documents for NCB works and goods contracts financed by ADB stating that ADB will declare a firm or individual ineligible, either indefinitely or for a stated period, to be awarded a contract financed by ADB, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive or obstructive practices or any integrity violation in competing for, or in executing, ADB-financed contract.

E. CONSULTANT'S TERMS OF REFERENCE

78. Detailed terms of reference for the project implementation assistance consultants (PIAC) are included in **Appendix 1**. A total of 581 person-months of input are required, including 11 international positions (92 person-months) and 26 national positions (489 person-months). A summary of the required inputs is included in the table below.

Position	Number	Person-months	Total
International			
Team Leader & Municipal Engineer	1	36	36
Water Supply Engineer	1	12	12
Sanitation Engineer	1	12	12
Electro-Mechanical Engineer	1	6	6
Environment Specialist	1	5	5
Social Safeguards and Resettlement Specialist	1	5	5
Finance Specialist	1	2	2
Institutional/Training Specialist	1	4	4
Wastewater Treatment Specialist	1	4	4
PPMS Specialist	1	3	3
Utility Training Specialist	1	3	3
TOTAL - International			92
National			
Deputy Team Leader/ Water Supply Engineer	1	44	44
Water Supply Engineer	1	40	40
Sanitation Engineer	1	40	40
Electrical Engineer	1	12	12
Mechanical Engineer	1	12	12
Structural Engineer	1	12	12
Geotechnical Engineer	1	6	6
Procurement Specialist *	1	12	12
Environment Specialist	1	18	18
Resettlement Specialist	1	12	12
Social Development & Gender Specialist	1	12	12
Financial Management & Accounting Specialist *	1	44	44
Human Resource / Training Coordinator	1	12	12
Treatment Specialist	1	6	6
PPMS Specialist	1	12	12
Utility Training Specialist	1	9	9
Site Engineers (1 for each subproject)	6	varies	138
AutoCAD Operators (3 Civil and 1 Electro-mechanical)	4	12	48
TOTAL - National			489

*To be recruited as individual consultant.

VII. SAFEGUARDS

79. **Prohibited investment activities.** Pursuant to ADB's Safeguard Policy Statement (2009), ADB funds may not be applied to the activities described on the ADB Prohibited Investment Activities List set forth at Appendix 5 of the Safeguard Policy Statement (2009).

80. **Project safeguards grievance redress mechanism.** ADB SPS requires that the borrower/client establish and maintain a grievance redress mechanism to receive and facilitate resolution of affected peoples' concerns and grievances about the borrower's social and environmental performance at project level. The PMUs will establish the project safeguards grievance redress mechanism (GRM), as detailed in the environmental management plan (EMP) and resettlement plan (RP) within 60 days of the loan effectiveness date, or before implementation of land acquisition and resettlement activities, whichever is the earliest. The GRM comprises a set of clear procedures to receive, record, and address concerns or complaints raised about safeguard issues (environment, involuntary resettlement and land acquisition) at commune, district and provincial level during project implementation. GRM Focal Points from the PMUs, contractor teams and environment and resettlement authorities will be identified and disclosed at construction sites and camps. Affected persons will have the option of seeking redress through existing channels and/or the project GRM.

a. Environmental Safeguards

81. The project is classified as category B. Two initial environmental examination (IEE) reports have been prepared based on the preliminary engineering designs, one for water supply subprojects and one for wastewater and septage subprojects.²⁸ Each IEE includes an environmental management plan (EMP) for each group of subprojects with specific mitigation and monitoring measures for each project component. Public consultations were carried out to inform the proposed project design and environmental assessment process and will continue during project detailed engineering design and implementation. These reports have been prepared in compliance with RGC laws and regulations and ADB's Safeguard Policy Statement (2009). However, under the Sub-Decree on Environmental Impact Assessment (1999), water treatment plants that will supply more than 10,000 users and all new wastewater treatment projects require an Environmental Impact Assessment (EIA). The Ministry of Environment has requested that the project provide for adequate consulting services to prepare the domestic environmental assessments of subprojects following final design. These and the draft IEE/EMP reports have been disclosed on the ADB website. The EMPs identify institutional arrangements and budget for implementation and are supported by loan covenants, capacity development and consulting services. A grievance redress mechanism will help to facilitate resolution of complaints regarding project safeguards performance.

82. The sanitation subprojects will have significant positive impacts on water quality in receiving waters as sewage will be treated prior to discharge and equipment and capacity building on water quality monitoring will be provided. The water supply subprojects and continuation of previous support for Water Safety Plans will have positive community health benefits reducing the exposure of users to infection from water-related diseases. A number of advanced low-carbon technology options for treatment facilities are being considered that would reduce greenhouse gas emissions. Potential negative construction environmental impacts associated with the project have been identified, and impacts are generally of a temporary and localized nature, such as access and traffic disruption, noise, dust, waste and wastewater management. Potential negative operational environmental impacts may result from sludge and wastewater filter backwash management, occupational safety risks associated with chemicals used for water treatment and increased drought

²⁸ IEEs (accessible from the list of linked documents in Appendix 2).

risk and low flows as a result of climate change. Construction and operational environmental impacts can be prevented or minimized to an acceptable degree through effective implementation of the environmental management plans.

83. Following detailed engineering design, the IEEs and EMPs will be reviewed and updated, as needed. The final documents will be cleared by ADB and disclosed on the website prior to bidding. The EMPs will be included as part of each construction or design/build tender package and will specify the requirements for contractors' EMPs (CEMPs). The CEMPs should give specific details on methods, site layout, worker's camps, and other facilities and site-specific method statements on implementation of pollution control measures based on the project EMPs.

84. The two PMUs will designate Environment Safeguards Officers who will be responsible for EMP implementation for the subprojects. International and national environment consultants will be recruited through the PIAC consulting services to support the PMUs and provincial PIUs with supervision of implementation of the EMPs. The roles and responsibilities for implementation of environmental requirements are detailed in the respective EMPs and summarized in **Table 9**. The requirements for environmental monitoring and reporting are detailed in Section VIII Performance Monitoring, Evaluation, Reporting and Communication.

Table 9: Institutional Responsibilities for Environmental Management

Entity	Environmental Roles and Responsibilities
MIH	(i) Executing agency of the project responsible for overall project implementation and compliance with loan covenants and IEEs/EMPs.
PMUs	(ii) Responsible for project management, coordination, monitoring and supervision, including ensuring implementation of environmental mitigation and monitoring measures, (iii) Ensure timely submission for Government approvals related to environmental management; (iv) Ensure that the project's environmental management plans included in the IEEs are incorporated in the bidding documents and contract documents for all civil works; (v) Review and approval of designs prepared by Contractors for works procured as Design and Build contracts; (vi) Ensure EMPs are updated following detailed engineering design as necessary (vii) Review the CEMPs prepared by the Contractors for compliance with standards set in the EMP, instruct revisions as necessary, and approve prior to commencement of construction (viii) Ensure public disclosure of relevant project information and ongoing public consultation as per the EMP requirements; (ix) Co-ordinate and report on the project specific safeguards GRM, ensure that necessary actions to resolve complaints are taken, documented and reported; (x) Ensure monitoring of environmental parameters specified in the EMPs; (xi) Ensure compliance with loan covenants in accordance with agreed formats and frameworks; (xii) Oversee monthly environmental monitoring of the project and submit semi-annual environmental monitoring reports to ADB for disclosure on ADB's website; (xiii) Oversee project compliance with relevant national and provincial requirements and co-ordinate with the relevant agencies; (xiv) Review and validate semi-annual environmental monitoring reports prepared with the assistance of the PIAC; (xv) Lead follow-up consultation meetings with relevant institutions, stakeholders and affected persons on environmental issues; (xvi) With the assistance of the PIAC, undertake regular construction site inspections and oversee implementation of the CEMPs by contractors;
PIAC	(i) For works procured as Design and Build contracts, review designs in detail, checking for compliance with requirements in the EMPs, and advise PMU of any necessary revisions prior to approval; (ii) Support PMUs with update of IEEs/EMPs following detailed engineering design; (iii) Check Bill of Quantities to ensure Contractors made adequate provisions for environmental mitigation and monitoring; (iv) On behalf of PMUs and working with PIUS, supervise the civil works packages and implementation of EMP mitigation and monitoring measures.

Entity	Environmental Roles and Responsibilities
PIAC Environment Specialists (International and National)	<ul style="list-style-type: none"> (i) Review the detailed designs prepared for each subproject for compliance with the EMPs prepared during the PPTA. Update the IEEs and EMPs to reflect changes, modifications and additions that have potential impacts during construction and operation phases of the subprojects. (ii) Examine the CEMPs prepared by contractors for compliance with the EMP and advise PMU of revisions that need to be incorporated prior to approval and commencement of civil works; (iii) Ensure that all associated project facilities have the required permits prior to commencement of civil works; (iv) Brief PIAC engineering and PIU supervision staff on EMP provisions and provide checklists to ensure that they will be able to adequately supervise on a day-to-day basis the contractors and sub-contractors with regard to proper and timely implementation of mitigation measures specified in the EMP; (v) Monitor implementation of environmental mitigation measures and environmental performance of contractors based on the EMP schedule and assist MIH / MPWT in the preparation of semi-annual environmental monitoring reports for submission to ADB; (vi) Undertake training for the MIH/PMU, MPWT/PMU and PIU staff on environmental management and monitoring, to build their capacity in these areas. The training will be implemented through on-the-job training and workshops based on the provisions of the EMP; and (vii) Ensure that the affected stakeholders and sensitive receptors (eg. hospitals, schools, temples) are regularly updated on project activities and are aware of the multiple entry points to the project safeguards GRM.
Construction Contractor	<ul style="list-style-type: none"> (viii) In the case of Design and Build contracts, prepare detailed designs in compliance with the EMPs for each subproject (ix) Appoint an Environment, Health and Safety Officer to manage, monitor and report on EMP implementation; (x) Prepare site-specific CEMP containing the method statements for compliance with environmental management standards in the EMPs; (xi) Allocate sufficient funding for proper and timely implementation of environmental mitigation and monitoring measures; (xii) Conduct daily inspection of the site and ensure the implementation of the CEMP during the construction phase; (xiii) Prepare/submit monthly reports on mitigation and monitoring activities to the PMUs through the PIAC; and (xiv) Act as the local entry point for the project GRM, conduct immediate investigation of any complaint, report all complaints and their resolution to the PMUs. Ensure the timely and appropriate resolution of the complaint or incident in accordance with the GRM.
ADB	<ul style="list-style-type: none"> (xv) Monitor and supervise the overall environmental performance of the project, review the semi-annual environmental monitoring reports and disclose the reports on ADB website in accordance with ADB Public Communications Policy (2011); and (xvi) Conduct missions to review environmental compliance and provide advice on corrective actions.

ADB = Asian Development Bank; CEMP = consultants' environmental management plan; DDIS = detailed design and implementation specialist; EIA = environmental impact assessment; EMP = environmental management plan; GRM = grievance redress mechanism; IEE = initial environmental examination; MPWT = Ministry of Public Works and Transport; PIAC = project implementation assistance consultants; PMU = project management unit

85. **Budget.** A budget has been allocated for implementing the project environmental monitoring and reporting requirements. This is separated for each of the two PMUs. An international environment specialist (5 months) will be required to support the update of the IEE/EMPs following detailed engineering design, initial environmental training and and intermittent support for the remainder of the Project, supported by a national environment specialist (18 months) who will provide direct support to the PMUs for monitoring and reporting on environmental compliance. This individual will be based in Phnom Penh and will spend approximately one third of his/her time at project locations. It is assumed that all construction phase environmental mitigation measures as specified in the EMP will be covered by the civil works costs. It is assumed that all operational phase mitigation measures will be covered by the operating budgets of the relevant government departments. Tables 9 and 10 summarize the budget for the two PMUs, however these will be combined and the total international environment specialist input will be 5 months.

Table 10 - Budget for MPWT/PMU

Item	Unit Cost (US\$)	Quantity	Total Cost (US\$)
STAFF COSTS			
International Environment Specialist	\$22,000	4.0	\$88,000
Domestic Environment Specialist	\$3,500	9.0	\$31,500
International Travel and Per Diem			
International Air Travel	\$2,500	2	\$5,000
Per Diem: International Specialist	\$140	120	\$16,800
Per Diem: Domestic Specialist in provinces	\$35	120	\$4,200
TOTAL			\$145,500

Table 11 - Budget for MIH/PMU

Item	Unit Cost (US\$)	Quantity	Total Cost (US\$)
STAFF COSTS			
International Environment Specialist	\$22,000	3.0	\$66,000
Domestic Environment Specialist	\$3,500	9.0	\$31,500
International Travel and Per Diem			
International Air Travel	\$2,500	2	\$5,000
Per Diem: International Specialist	\$140	90	\$12,600
Per Diem: Domestic Specialist in provinces	\$35	120	\$4,200
Studies, Surveys and Reports			
Baseline data collection	\$20,000	1	\$20,000

Equipment			
Sangke River – procure, establish and operate automated flow meter			\$15,000
TOTAL			\$154,300

86. **Information disclosure and public consultation.** The draft project IEEs and EMPs will be disclosed on the ADB website prior to SRM and the final IEEs and EMPs after detailed engineering design. Public meetings were conducted to consult with affected persons during project preparation. The EMP includes a plan for ongoing consultation during project implementation.

b. Social Safeguards

87. The project is classified as category B for involuntary resettlement with limited land acquisition and resettlement impacts that can be largely mitigated by applying defined design and construction approaches that confine construction works to public land and road right-of-ways avoiding informal or formal occupation encroaching onto the sidewalks and road shoulders. The land for the project facilities will be acquired by the GDR/IRC in accordance with Government and ADB policies and procedures. A Resettlement Framework has been prepared and two Resettlement Plans (RPs) have been produced for Battambang (one for water supply and one for wastewater). Land acquisition is required, 2.4 ha of government land for water supply (4 affected households) and 6.6 ha of land for wastewater (1 government lot and 4 private lots, with 4 affected households). No severely affected households were identified. Land acquisition screening has been prepared for both locations. The land required for wastewater may be negated if the existing treatment plant site can be reused with a more advanced wastewater treatment process, which will be investigated during implementation. Temporary impacts during construction from pipeline construction, including other unanticipated impacts, will be addressed during implementation based on actual impacts and in accordance with the national laws and ADB's Safeguards Policy Statement (SPS) 2009. Four due-diligence reports have been prepared for subprojects with no land acquisition, one for Kampong Cham water supply and three for wastewater at Kampong Cham, Siem Reap, and Sihanoukville.

88. The RPs and environment IEEs have been prepared in consultation with the provincial departments, local authorities, and communities. Effective monitoring at all stages of subproject implementation will be ensured. The RPs, IEEs and EMPs will be updated after detailed engineering design to reconfirm impacts and cleared by the government and ADB prior to contract awards. In compliance with ADB's information disclosure and consultation requirements, the safeguard documents will be posted on the ADB's website.

c. Ethnic Minorities

89. Whereas the 2014 Socio Economic Survey carried out by the Ministry of Planning indicates that nationally 1.9% of the population are Cham, and 0.3% are Vietnamese, in urban areas outside of Phnom Penh, the ratio is 2.3% Cham and 0.2% Vietnamese. During the socio-economic survey (SES) undertaken for project preparation, very few ethnic minorities (EMs) were identified, and in only one village, Trakuan village, Kampong Siem district of Kampong Cham province, where there are a total of 279 HHs and of these some 4.5% (approx. 12 HHs) are Cham and 0.5% (2 HHs) are Vietnamese. Given the full integration of ethnic Cham into mainstream Khmer and the very small number of Vietnamese HHs encountered (who have also integrated into the mainstream), and the identical impacts and benefits that will be realized by all HHs in the target areas, there will be no necessity to prepare Indigenous Peoples' Plan.

d. Gender and Social Dimensions

90. The socioeconomic survey (SES) conducted during project preparation in the proposed service areas obtained data on water and sanitation knowledge attitude and practice (KAP) and public opinion, perceptions and suggestions for the installation of the infrastructure, and the target community's willingness to connect to²⁹ and pay for services. This revealed strong support for the project. The summary poverty reduction and social strategy (SPRSS), the gender action plan, (GAP) and the stakeholder communications strategy (SCS) include measures designed to enhance project benefits and mitigate negative impacts on beneficiaries.³⁰ The Project will contribute to poverty reduction and improve health and hygiene and based upon 2015 demographics extrapolated to 2022, the extended water supply systems should benefit some 107,400 women (51.4% of the population). The sanitation improvements should directly benefit some 47,400 women by 2022 (51% of the population) The replacement of the Siem Reap interceptor sewer will provide an immediate benefit to some 25,400 people, 50% of whom are women living in the proximity of the pipeline. The key poverty reduction and social inclusive design features of the project include: (i) subsidized water supply connections of 30%, 50%, 70% and 100% to poorer households based upon the PPWSA targeted system; and (ii) free wastewater connections.

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92. The beneficiaries will include poor and vulnerable households living below the poverty line, which represent between 17% to 24% of the individual town populations. Villages surveyed included poor, vulnerable and HHs headed by single women. In the water supply survey villages some 12% of HHs are headed by women, and 6.78% classified as ID Poor P1, and 7.24% ID Poor P2³¹. In the sanitation survey villages some 14.8% of HHs are headed by women, and an average of 12.8% of HHs are ID Poor P1, and 15.16% are ID Poor P2. The project will benefit households by providing access to a reliable and safe water supply, sanitation system and improved septage services. It is designed to improve social inclusion. Sewage connections will be provided free of charge to all HHs. Domestic water supply connections will be made available to all HHs and the poorest HHs may apply for a connection subsidy of 30%, 50%, 70% or 100% depending upon the degree of relative poverty. Potential customers will be provided information during public consultations and disclosure as to how to apply to these subsidies.

93. Based on the gender analysis and proposed actions, the project is gender mainstreaming category II—effective gender mainstreaming. The gender assessment identified women's low participation in the sector, reflected in few women in decision making positions within the EA and

²⁹ Sewage connections will be provided free of charge to all HHs. Domestic water supply connections will be made available to all HHs and the poorest HHs may apply for a connection subsidy of 30%, 50%, 70% or 100% depending upon the degree of relative poverty.

³⁰ SPRSS, GAP, and SCS (accessible from the list of linked documents in Appendix 2).

³¹ P1 and P2 are classifications used in the Ministry of Planning (MOP) Identification of Poor Households Program (ID Poor), a national targeting mechanism for poverty as detailed Sub-decree No. 291 (December 2011). The sub-decree requests that IDPoor targeting data is used to provide services or assistance to poor HHs. The IDPoor is a proxy means test with participatory elements, categorizing HHs as poor category 1 (P1 - very poor), poor category 2 (P2 - poor), after an assessment of occupation, education and income, health and disabilities of all family members, housing status and conditions, access to watsan facilities, HH debt, economic shocks and vulnerabilities. IDPoor identification cards are issued to all poor P1 and P2 households.

IAs; low employment opportunities for females, arising from capacity and skill constraints and opportunities for institutional advancement; lack of bathrooms and latrines for poor women affecting privacy and safety; and affordability of connections and tariffs. The GAP will support increased women's representation in the water and sanitation sector through female professional targets in PMU and PIUs staffing and capacity development activities, employment opportunities in construction works on equal terms and conditions; subsidized water supply connections for poor female-headed households and free wastewater connections; provision of international and national social and gender consultants to support GAP implementation; gender-inclusive monitoring, evaluation and reporting with sex-disaggregated data in the Project Performance Management and Monitoring System.

94. Gender and social dimensions monitoring. The PIAC consultants and PMUs will be responsible for ensuring social and gender actions in the SPRSS, GAP, and Participation Plan are implemented and monitored. A full-time national social and gender specialist will be employed in the PMUs to coordinate the implementation and monitoring of GAP with the PMU and IAs/PIUs. The PMUs will ensure that (i) contractors are encouraged to train and upgrade the construction skills of all women in appropriate areas to enhance their formal employment opportunities, (ii) construction labor camps are properly sited and managed, (iii) safe working conditions and equal pay for equal work to women and men workers will be provided, and (iv) no child labor is employed. NGOs will be engaged in IEC campaign to mitigate on health risks and train new consumers on how to apply for subsidized connections, public hygiene and sanitation awareness programs. The PMU will ensure that civil work contracts and bidding documents under the Project include specific provisions to comply with the GAP and will monitor and report on the GAP performance indicators, making sure that all subproject data collected under the project is disaggregated by sex.

95. MIH and MPWT and respective provincial line agencies will have the overall responsibility of implementing the GAP. A gender focal person will be assigned from the EA to the PMU to coordinate GAP implementation and reporting across all project provinces (national focal point). The IA in each province will also assign a focal person to be responsible for Gap activity at provincial level and for coordination with the national focal point. A National Gender Specialist (NGS) will be hired for 12 months over the project's duration to support the EA and IA to ensure the GAP is fully implemented. The Specialist will work closely with the DPWT and DIH/PWW and provide regular updates on the implementation and impact of the GAP through quarterly reports. The PMUs will support and assist the PIUs in implementing and the internal monitoring of the GAP.

GENDER ACTION PLAN

Project Outputs	Proposed Gender Mainstreaming Activities and Targets	GAP Implementation and Monitoring
Output 1: Water supply services improved	<ul style="list-style-type: none"> • At least 50% female participation in IEC/BCC, WASH, subsidy, water use training. • Community consultation meetings are scheduled at times and places convenient to both men and women. • WS connection subsidies of 30%, 50%, 70% and 100% to poorer HHs based upon the PPWSA targeting system adapted for provincial use. • WS new connections 42,636 *(Battambang 27,261 includes 6,314 poor HHs, 4,373 FHHs). (Kampong Cham 15,373 HHs includes 2,663 poor HHs, 1,651 FHHs). • NGO services to assist poorer HHs complete connection subsidy applications and provide WASH training, O&M issues and WATSAN awareness. 	<ul style="list-style-type: none"> • PMU, PIUs, I/NGS • PMU, PIUs, I/NGS • PMU, PIU, I/NGS • PMU, PIU, I/NGS • PMU, PIU, I/NGS
Output 2: Sanitation services improved	<ul style="list-style-type: none"> • At least 50% female participation in IEC/BCC, WASH and WW awareness training. • NGO services to assist in provision of IEC/BCC, WASH training. • All secondary schools in participating cities included in school-based menstrual hygiene education. • Community consultation meetings are scheduled at times and places convenient to both men and women. • Toilet and bathroom loans to up to 4,000 P1 and P2 HHs of which 50% are FHHs. • WW beneficiaries 24,430 (Sihanoukville 10,456 HHs includes 1,466 poor HHs, 825 FHHs). (Battambang 8,500 HHs includes 1,969 poor HHs, 1,406 FHHs). (Siem Reap 5,474 HHs includes 1,275 poor HHs, 821 FHHs). • Improved septage benefits 7,919 HHs (Kampong Cham includes 1,372 poor HHs and 851 FHHs) 	<ul style="list-style-type: none"> • PMU, PIU, NGO, I/NGS • PMU, PIU, I/NGS • PMU, PIU, NGO, I/NGS • PMU, PIU, MFI, I/NGS • PMU, I/NGS, M&E • PMU, PIU
Output 3: Institutional effectiveness improved	<ul style="list-style-type: none"> • Eighty technical education scholarships recipients are 50% women. • Forty English language training placements of which 50% are women. • GAP monitoring in Quarterly Reports, GAP performance monitoring reports submitted semi-annually to ADB. • Establish PPMS with sex disaggregated data. • PMU/PIU gender Focal Points appointed (1 in each of the EA PMU, and 1 in each target province PIU) • PIC international and local gender specialists recruited. • Gender awareness and GAP training to PMU and PIU staff • At least 20% of the overall management staff trained under the project are women. 	<ul style="list-style-type: none"> • PMU, EAs, I/NGS • PMU, EAs, I/NGS • PMU, I/NGS • EAs, PMU • EAs, PMU, PIUs • PMU, I/NGS • PMU, PIU, I/NGS

Project Outputs	Proposed Gender Mainstreaming Activities and Targets	GAP Implementation and Monitoring
	<ul style="list-style-type: none"> • Gender staff targets: i) 30% of PMU positions are occupied by women and of which 20% are in management or supervisory positions (MIH – WS Baseline 22%, 14%), and, ii) 25% PMU positions are filled by women and 15% are management or supervisory (MPWT – WW baseline 6%, 5%); • Targets at PWW (PIUs) are 20% of positions occupied by women and 10% in management or supervision (baseline 15%, 7%), and DPWT (PIUs) 10% of positions are filled by women and 5% are management or supervisory (baseline 6%, 5%). • Contract and bid documents to require contractors to employ 15% women in their construction teams and to provide skills training to all recruited women employees (ADB UWSS 3232: baseline 10%); • Ensure equal pay for same work between male and female workers, and payments for women are paid directly to them. • Contractors employ dust and noise control measures in urban areas (hours during which noisy plant and equipment may be used), follow Contractor Code of Conduct. 	<ul style="list-style-type: none"> • EA, PMU, I/NGS • EAs, IAs, PMU, I/NGS • PMU, PIU, I/NGS • PMU, PIU, I/NGS • PMU, PIU, I/NGS • PMU, PIU, I/NGS

BCC = behaviour change communication; DPWT = department of public works and transport; EA = executing agency; FHH = female headed households; GAP = gender action plan; HH = household; IA = implementing agency; IEC = information, education and communication; INGS – international gender specialist; M&E = monitoring and evaluation; MFI = Microfinance Institute; MIH = Ministry of Industry and Handicrafts; MPWT = Ministry of Public Works and Transport; NGO = nongovernment organization; NGS = national gender specialist; O&M = operation and maintenance; PDIH = provincial department of industry and handicrafts; PIC = project implementation consultant; PIU = project implementation unit; PMU = project management unit; PPMS = project performance management system; PPWSA = Phnom Penh Water Supply Authority; PWW = provincial water works; WASH = water, sanitation and hygiene; WATSAN = water supply and sanitation; WS = water supply.

5. GAP Budget

Item	Total Cost	Note
80 Technical education scholarships	\$400,000	50% GAP: 50% Inst Cap Bldg
40 English language placements	\$200,000	50% GAP: 50% Inst Cap Bldg
4000 toilet/bathroom construction loans (2000 FHHs)	\$600,000	100% GAP
Gender sensitivity training for EA/IAs	\$10,000	100% GAP
Curriculum development and accreditation TA	\$200,000	Inst Cap Bldg
Total	\$1,410,000	GAP \$910,000; ICB \$500,000

VIII. PERFORMANCE MONITORING, EVALUATION, REPORTING AND COMMUNICATION

a. Project Design and Monitoring Framework

Impacts the Project is Aligned with			
Improved urban environments and quality of life for the urban residents (National Strategic Development Plan, 2014–2018). ^a			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Sustainable piped water supply and sanitation services provided in selected provincial cities	By 2023: a. Access to piped water ^b supply provided to an additional 209,000 residents in participating cities (2016 baseline: 99,800). b. Nonrevenue water reduced to 15% in participating cities (2016 baseline: 25%). c. Access to sanitation services provided to an additional 91,000 residents in participating cities (2016 baseline: 20,200).	a–b. Annual reports by provincial waterworks and MIH c. Annual reports by DPWTs and MPWT a–c. Monitoring reports, ADB loan missions, and baseline follow-up surveys	Inadequate and irregular tariff adjustments could adversely affect the sustainability of provincial waterworks and PWUs
Outputs 1. Improved piped water supply	By 2022: 1a. New water treatment plants of 61,600 m ³ /day capacity provided in participating cities (2016 baseline: 0). 1b. Water supply pipe network extended by 161 km in participating cities (2016 baseline: 414 km). 1c. Additional 40,000 water connections provided in participating cities (2016 baseline: 22,020).	1a–1b. Construction records 1c. Water utility records and customer databases	Inadequate availability of raw water sources at Battambang during the dry season Political interference could adversely affect bidding and plan operations, and corruption could impair procurement and implementation
2. Improved sanitation	By 2022: 2a. Wastewater treatment plants of 31,125 m ³ /day capacity provided in participating cities (2016 baseline: 457 m ³ /day). 2b. Sewer system extended by 51.2 km in participating cities (2016 baselines: 0) 2c. New septage treatment facility of 2,400 m ³ capacity constructed (2016 baseline: 0). 2d. Free household sewer connections provided to 16,700 households in participating cities (2016 baseline: 0).	2a–2d. Construction records 2c–2d. Wastewater utility asset and customer databases	
3. Improved institutional effectiveness	By 2022: 3a. Sanitation roadmap adopted by MPWT (2016 baseline: none). 3b. At least 20% of all executing agency and implementing agencies' staff with increased knowledge in WSS service	3a. Project progress reports 3b–3c. Training records and attendance lists 3b–3h. Baseline and	

	<p>delivery, with at least 20% of the trained staff being women (2016 baseline: 0).</p> <p>3c. 20 scholarship placements for new WSS master's program (2016 baseline: 0).</p> <p>3d: At least 15% of GDPWS (MIH) management or supervisory staff are female (2016 baseline: 14%).</p> <p>3e: At least 10% of provincial waterworks (PIU) management or supervisory staff are female (2016 baseline: 7%).</p> <p>3f: At least 15% of GDPW (MPWT) management or supervisory staff are female (2016 baseline: <5%).</p> <p>3g: At least 5% of PWU (PIU) management or supervisory staff are female (2016 baseline: <5%).</p> <p>3h: Employment targets (at least 15%) for women hired by civil works contractors with further skills training (2016 baseline: 10% UWSP)</p>	<p>follow-up surveys in project cities</p> <p>3h. Construction records and labor statistics</p>	
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Key Activities with Milestones

1. Improved piped water supply

- 1.1 Complete design–build documents of water treatment plants and distribution networks by November 2017
- 1.3 Complete bidding and contract award by June 2018
- 1.4 Construct and commission treatment plants by June 2021
- 1.5 Construct and commission water supply networks by June 2022

2. Improved sanitation

- 2.1 Siem Reap Trunk Sewer
 - 2.1.1 Complete bidding documents for design–build contract by November 2017
 - 2.1.2 Complete bidding and contract award by June 2018
 - 2.1.3 Construct and commission trunk sewer and associated works by December 2019
- 2.2 Wastewater and Septage Treatment Facilities
 - 2.2.1 Complete design–build documents for wastewater and septage treatment plants by October 2018
 - 2.2.2 Complete bidding and contract award by April 2019
 - 2.2.3 Complete the construction and commissioning of treatment plants by December 2021
- 2.3 Wastewater Networks
 - 2.3.1 Prepare detailed design and bidding documents for wastewater networks by October 2018
 - 2.3.2 Complete bidding and contract award by April 2019
 - 2.3.3 Construct wastewater networks and provide wastewater connections by December 2022

3. Improved institutional effectiveness

- 3.1 Provide project management assistance and hands-on training to PMU and PIU throughout the project
- 3.2 Establish monitoring system to report on outputs and outcomes by June 2018
- 3.3 Check and validate NRW, gender, and other baseline data by June 2018
- 3.4 Design capacity development program for the executing agency and implementing agencies to support institutional reform, sector regulation, and private sector development by December 2018
- 3.5 Implement capacity development program for the executing agency and implementing agencies from January 2019 to September 2022
- 3.6 Develop Master's degree program in water and wastewater with Institute of Technology of Cambodia by September 2019
- 3.7 Implement Master's program and scholarship program October 2019 to September 2022
- 3.8 Develop and implement water supply and sanitation communication strategies by December 2018

Inputs	
ADB:	\$50.00 million loan
Government: counterpart	\$10.54 million (estimated in cash and in-kind) to cover taxes and duties, and staff
AFD:	€40.00 million loan
JFJCM:	\$10.00 million grant to support energy-efficient designs
EU (AIF)	€4.67 million ^c
Assumption for Partner Financing	
None.	

ADB = Asian Development Bank; AFD = Agence Française de Développement; AIF = Asia Investment Facility; CMDG = Cambodian Millennium Development Goal; DPWT = (provincial) departments of public works and transport; EMP = environmental management plan; EU = European Union; GDPWS = General Department of Potable Water Supply, JFJCM = Japan Fund for the Joint Crediting Mechanism; IEE = initial environmental examination; km = kilometer; m³ = cubic meter, m³/day = cubic meter per day, MIH = Ministry of Industry and Handicrafts, MPWT = Ministry of Public Works and Transport; NRW = nonrevenue water; NSDP = National Strategic Development Plan; O&M = operation and maintenance; PIU = project implementation unit; PMU = project management unit; PPP = public–private partnership; PWU = provincial wastewater unit, UWSP = Urban Water Supply Project; WSS = water supply and sanitation.

^a Government of Cambodia. 2014. *National Strategic Development Plan, 2014–2018*. Phnom Penh. Key actions for water supply in the NSDP are (i) development of a legal framework for urban water supply; (ii) promotion of decentralization and deconcentration; (iii) transfer of full autonomy for service delivery to all provincial waterworks; (iv) mobilization of urban water sector financing; (v) improvement of sector performance and public access to safe, affordable, and sustainable water supplies; and (vi) improvement in the protection of water sources and enforcement of regulations.

^b To Cambodian national drinking water standards.

^c Integral part of the project and factors into the project assumptions. Full administration of the grant by AFD.

Source: Asian Development Bank.

b. Monitoring

96. **Project performance monitoring.** Project performance monitoring will be based on the targets, indicators, assumptions, and risks in the DMF. Disaggregated baseline data for output and outcome indicators will be gathered prior to the project implementation, and will be updated and reported through the Project quarterly progress reports and after each ADB review mission. These quarterly progress reports will provide information necessary to update ADB's project performance reporting system.

97. **Compliance monitoring.** The status of compliance with loan covenants, covering policy, legal, financial/economic, environmental, and others will be reviewed at each ADB review mission. Any non-compliance issues will be specified in the quarterly progress reports together with remedial actions.

98. **Safeguards monitoring.** Environmental mitigation measures and monitoring plans are set out in the EMPs for all subprojects. The EMPs will be implemented by the contractors as a contractual obligation and the performance will be monitored by the PIAC consultants and PIU on a daily basis and reviewed by the PMU's Safeguards Officer. The PMUs and the PIAC consultants will ensure that the measures in the EMPs are in place before project commencement and requirements are included in any civil works contract and bidding documents financed by the ADB. The PIAC consultants will be responsible for ensuring that the technical and environmental requirements are properly integrated in the detailed design and planning, and are implemented during construction and the operation of the subprojects. The quarterly progress reports should highlight any significant environmental issues or grievances. An environmental monitoring report (EMR) shall be prepared and submitted on a semi-annual basis.

99. RPs have been prepared for all subprojects confirming no land acquisition and resettlement impacts for four subproject, and minimal impacts for two subprojects. The RPs will be updated after detailed design to identify and confirm any land acquisition and resettlement impacts along the distribution pipeline network alignment. All identified impacts will be addressed and mitigated in accordance with ADB's SPS (2009). The RPs will be updated and disclosed after detailed design and cleared by the government and ADB prior to contract awards. In compliance with ADB's information disclosure and consultation requirements, the safeguard documents will be posted on ADB's website. The PIAC consultants will ensure that the contractors restore the road and river ROW areas and other public lands to original condition after installation of pipes is completed. PIAC consultants will report these activities in the project monitoring reports on a quarterly basis.

100. **Gender and social dimensions monitoring.** Monitoring of the GAP will be incorporated into the Project Performance Monitoring System (PPMS) and periodic progress reports. The PMUs will develop PPMS, establishing sex-disaggregated indicators for project performance, monitoring, and evaluation. The PPMS will include monitoring tools, reporting templates (including use of ADP GAP Progress Report template) and output indicators, assisted by project implementation consultants (international 6 person-months and national 12 person-months social and gender specialists). The IAs will submit periodic (minimum semi-annual) reports to the EA/PMUs and ADB using these tools, templates, and indicators. Monitoring of the social inclusion and poverty reduction design measures, indicated in the GAP, SPRSS, Participation Plan, and Stakeholder Communication Strategy, will be the responsibility of the PMUs. Project implementation consultants will assist the PMUs in devising the monitoring indicators and reporting templates.

c. Evaluation

101. ADB will review the project every six months. Each review will cover institutional administrative, organizational, technical, environmental, social, poverty reduction, gender mainstreaming, resettlement, economic, financial, and other aspects affecting the performance of the project and its continuing viability. The Government and ADB will jointly undertake a mid-term

review of the project within 3 years of its start. The midterm review will focus on (i) project impact, (ii) implementation progress, (iii) the performance of consultants and contractors, (v) the status of compliance with covenants in the loan agreement, and (vi) the need for any midcourse changes in project scope or schedule to ensure full achievement of the intended impact. Within six months of physical completion of the Project, PIAC consultants and PMU will submit a project completion report to ADB.

d. Reporting

102. The PIAC consultants and PMUs will, with coordination and consolidation by MIH, provide ADB with (i) quarterly progress reports in a format consistent with ADB's project performance reporting system; (ii) consolidated annual reports including (a) progress achieved by output as measured through the indicator's performance targets, (b) key implementation issues and solutions, (c) updated procurement plan, and (d) updated implementation plan for next 12 months; (e) quarterly environmental monitoring report using ADB template; (f) quarterly GAP Progress Performance Report using ADB template; and (g) a project completion report within six months of physical completion of the project. To ensure projects continue to be both viable and sustainable, project accounts and the annual financial statements of the EAs, together with the associated auditor's report, should be adequately reviewed.

e. Stakeholder Communication Strategy

103. The Stakeholder Communication Strategy (SCS) outlines key messages which are needed to achieve project outcomes and to maximise the impact of project outputs, through improved sanitation and hygiene awareness behavior, eligibility for subsidized water supply connections and universal free wastewater connections, tap water use behavior, lifeline tariffs, eligibility for microfinance loans for toilets/bathhouses, all targeting the poor households. The strategies also provide for scholarships for water supply and sanitation engineering and English language tuition to improve the skills of MIH and MPWT staff engaged in water supply and wastewater services, and to improve the opportunity for women staff members to assume more responsible management and supervisory roles with complementary targets for the level of women in these roles.

Objectives	Key Risks and Challenges	Main Stakeholders	Messages	Means of Communication	Timeline	Responsibility	Resources
<p>Ensure a regular flow of reliable information to enhance stakeholder support</p>	<p>Trust of information Language/cultural barriers Literacy level Level of coverage and outreach Managing expectations Lack of community familiarity with water supply, wastewater and sanitation systems Information supplied on timely basis.</p> <p>Community meetings held at times and locations convenient to women.</p>	<p>Households within new services areas for water supply and wastewater. Poor and vulnerable households Business owners and the local private sector National and sub-national government agencies in the sector and local authorities Civil society organizations (NGOs, CSOs, CBOs) Local media, radio and television.</p>	<p>Project scope and design the ability for stakeholders to contribute during the detailed design and implementation phases Improved hygiene and WASH understanding and practices Availability of micro finance loans to assist the provision of toilets and bathrooms, eligibility and process Awareness of professional/ technical scholarships , section criteria and selection process Awareness of the English language training courses for the staff of MIH and MPWT and their provincial agencies to improve capabilities and opportunities for the advancement of female staff to more responsible positions. Awareness of training and</p>	<p>Workshops, seminars and public meetings with stakeholders. IEC campaigns through information leaflets and publications, local TV media and public notices in collaboration with civil society (NGOs, CSOs and CBOs). Micro finance organization information and local agents Institutions of Higher Education booklet on courses offered and scholarship availability FGD meetings stakeholders including the private sector. MIH/MPWT staff manuals, training policy and information on scholarships and education</p> <p>Agency management and</p>	<p>From outset of project Regularly scheduled events to update on developments. Regularly scheduled information in local media (monthly)</p>	<p>GDPWS/PMU PWV/PIU GDPW/PMU DPWT/PIU PIAC Micro finance organizations Institutes of Higher Education (professional scholarships) Civil contractors</p>	<p>PMU/PIU costs funded in project budget (govt. contribution) PIAC costs under consultant services budget. Leaflets, publication materials and local radio and TV estimated cost \$25,000</p>

Objectives	Key Risks and Challenges	Main Stakeholders	Messages	Means of Communication	Timeline	Responsibility	Resources
			capacity building opportunities. Awareness of EA/IA recruitment targets	staff meetings, intra office memos. Project web site, local media.			
Ensure a two way communication flows, information sharing and feedback mechanism to ensure social inclusion, effective risk mitigation and flow of project benefits to target groups especially poor HHs and women headed households.	Identifying valid community representatives Timing Language and culture Language used readily understood at local level and devoid of excessively technical terms Mechanisms ready to respond to concerns.	Project affected persons Community members Civil society organizations (NGOs, CSOs and CBOs) Local private sector Local government Local media	Importance of dialogue Incorporation of stakeholder views into project Explanation of feedback process and how feedback is used Identification of key issues to discuss Awareness and operation of WB web-based monitoring system for community service satisfaction and reporting of service problems - leaks and network deficiencies	Local government mechanisms Community meetings Consultations with Sangkets and Communes and village heads and committees Local stakeholder workshops Awareness and behavioral change program and activities Local media Monitoring operation and efficiency of utility services by initiating and rolling out WB web based system for customer notifications and beneficiary quality control feedback	From outset of project Regularly scheduled events to update on developments. Regularly scheduled information in local media (monthly) To be in place within the first quarter on 2018	GDPWS/PMU PW/P/PIU GDPW/PMU DPWT/PIU PIAC Community level organizations	Content development and publication dissemination costs \$25,000 (as above) Awareness and behavior change program including outreach activities and events \$291,950 Costs for web based system estimated at \$10,000 additional to PIAC costs which are in project budget
Communicate tariff and connection charge fees to facilitate willingness to connect and to pay	Trust of information Literacy level Language/cultural barriers Level of coverage and outreach Poor and vulnerable HHs clearly identified	Project Affected Persons and target beneficiaries Poor, vulnerable and female headed households Local authorities Project Towns	Advice to poor and vulnerable HHs including FHHs on availability of subsidized water supply and free	Information disseminated through local IAs/PIUs and local authorities Media outreach via local television and	From outset of Project Regularly scheduled events in local monthly) In schools and temples at	GDPWS/PMU PW/P/PIU GDPW/PMU DPWT/PIU PIAC Community level organizations	Content development and publication dissemination costs \$25,000 (as above) NGO implementation

Objectives	Key Risks and Challenges	Main Stakeholders	Messages	Means of Communication	Timeline	Responsibility	Resources
	<p>and provided with the information</p> <p>Language used readily understood at local level and devoid of excessively technical terms</p>	<p>Radio and Television</p> <p>NGOs</p>	<p>wastewater connections,</p> <p>Awareness of targeting system and eligibility criteria</p> <p>NGO assistance to HHs in preparation of applications for subsidized water connections and free waste water connections</p> <p>Awareness of lifeline tariffs for water supply</p> <p>Awareness raising of water conservation and the need for dry season water use economy.</p> <p>Awareness of need and purpose of tariffs and need for periodic adjustments.</p>	<p>radio in local language</p> <p>Print materials including posters prepared for the project by ministries, PMUs and PIUs.</p> <p>Collaborate with Min of Health for BCC materials.</p> <p>IEC campaigns (English and Cambodian) through information leaflets and publications, local media and public notices in collaboration with civil society (NGOs)</p> <p>Schools and temples announcing criteria for subsidized household connections</p> <p>Information sharing and dissemination at cultural and religious events</p>	<p>beginning and end of each semester and in temples during major religious festivals such as the beginning and end of Buddhist Lent and Pchumben</p>		<p>of IEC training at estimated cost of \$60,000</p>
<p>Women employment construction works and post construction O&M.</p>	<p>Identifying and promoting the opportunities</p> <p>Ensuring civil contractor willingness to engage and train women employees</p> <p>Ensuring employment for women on same</p>	<p>Women in the communities where the subprojects are to occur</p>	<p>Women are made aware of local employment opportunities and how to apply.</p> <p>Contractors to be encouraged to train and upgrade the construction skills of</p>	<p>Contract bid documents</p> <p>Contractor advertisements for employees</p> <p>Media outreach via local television and radio in local</p>	<p>From outset of project</p> <p>At start of all subproject construction activities</p>	<p>GDPWS/PMU</p> <p>PW/W/PIU</p> <p>GDPW/PMU</p> <p>DPWT/PIU</p> <p>PIAC</p> <p>Civil contractors</p>	<p>Costs fall under civil works contracts</p>

Objectives	Key Risks and Challenges	Main Stakeholders	Messages	Means of Communication	Timeline	Responsibility	Resources
	pay and terms as the male counterparts Provision of amenities and change rooms for women at the works sites		all women in appropriate areas to enhance their formal employment opportunities Safe working conditions and equal pay for equal work for women . Outreach to inform/promote women's employment in construction and post construction O&M.	language Print materials including posters prepared for the project by ministries, PMUs and PIUs. Contract and bid documents to require contractors to employ 15% women in their construction teams and to provide skills training to all recruited women employees			

ADB = Asian Development Bank; CBO = community based organization; CSO = community service organization; DIH = department of industry and handicrafts; DPWT = department of public works and transport; FGD = focus group discussion; FHH = female headed households; GDPWS = general department of potable water supply; GDPW = general department of public works; GOC = government of Cambodia; HH = households; IAs = implementation agencies; IEC = information, education and communication; MIH = Ministry of Industry and Handicrafts; MPWT = Ministry of Public Works and Transport; NGO = non- government organization; PIAC = project implementation and assistance consultants; PIU = project implementation unit; PMU = project management unit; PWSSP = provincial water supply and sanitation project; TV = television; WB = World Bank.

Source: Asian Development Bank.

Stakeholder Analysis Provincial Water Supply and Sanitation Project

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
Beneficiaries, Utility Customers				
Underserved and unserved poor and vulnerable urban households in the water supply and sanitation subproject areas.	<p>To have access to reliable potable water supply and effective sanitation and getting government assistance to pay for the perceived high cost of connection.</p> <p>Anticipated improvements to the household health and living standards and lessening of the burden of domestic activities on households and women in particular.</p> <p>Also concerned with the adequacy, reliability and quality of water supply and of reliable and hygienic wastewater systems in view of the coverage and quality of present service provision.</p>	<p>The lack of household affordability and willingness to pay – the high cost of water connection and normal connection to the piped sewer systems are expensive for poor families and could deny poor households access to the systems and safe drinking water and hygienic sanitation. However, the poor are happy to pay the monthly tariff for water which is much cheaper than buying water from other current sources such as private water providers. There is however a reluctance to pay sewerage tariffs and to encourage connection the sewer connections will be free under the project. Likewise water supply connections will be subsidized to the poorer households again to encourage connection.</p> <p>The poor will need to be informed about the PWSSPs connection policies for water supply and Wastewater and how to apply for assistance.</p>	<p>Individual and family funds and assets</p> <p>Have the ability to make partial contribution to the cost of providing services and if improvements to sanitation can be marketed socially are able to provide most of the investment costs for household facilities.</p>	Represent individual and community needs
Underserved and unserved non-poor urban and peri-urban households in the subproject areas.	<p>To have access to reliable portable water supply and effective urban sanitation.</p> <p>Anticipated improvements to the household health and living standards and lessening of the burden of domestic activities on households and women in particular.</p> <p>Have the ability to pay for the provision of such services but need service providers to demonstrate reliable supply and good quality water and effective wastewater services.</p>	<p>Municipal authorities have not had either the resources or the political will to extend network coverage for water supply or provide necessary sewerage systems and treatment.</p> <p>Having access to reliable information about the Project and its benefits.</p>	<p>Individual and family funds and assets.</p> <p>Not lacking the financial resources but require a sustained commitment by the utility operator.</p> <p>No need to subsidize services to be provided such as the cost of individual household connections.</p>	Represent individual and community needs

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
Women	Household responsibility for using water, and the hygiene and health of the family. Will benefit from improved water supply and improved household sanitation	<p>Acceptance by women of improved water supplies (including treatment) and effective wastewater services and septage management, and user pays is critical to implementation.</p> <p>Acceptance of household sanitation and hygiene practices.</p> <p>Reduced work to obtain water for domestic use for cooking and cleaning. Reduced burden of sourcing water from outside the household.</p> <p>Need for improved privacy, safety and comfort from household toilet.</p> <p>Decrease in the unequal work load for women from having a reliable potable water supply and effective environmental sanitation, and better health and less illness within the family</p> <p>Provisions for women's mobilization and participation in the Project design and implementation to promote a fair sharing of the benefits including employment in the PMU and IAs and on the construction activities.</p>	<p>Individual and family funds and assets</p> <p>Have the ability to influence household decisions to install water connection and if improvements to sanitation can be marketed appropriately the ability to influence household investment in household toilets.</p>	Represent individual and community needs
Men	Decision making within the household unit. Attendance at public meetings	<p>Household choices for water supply and sanitation. Participation in planning and implementation through Commune and village activities.</p> <p>Improved household water and sanitation. Better informed about water supply and sanitation services</p> <p>Willingness to pay commitments</p>	<p>Individual and family funds and assets</p> <p>Can influence household decisions to install water connection and make household investment in toilet and sanitation</p>	Represent and can influence individual and community needs

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
Residents	Households in subproject towns in areas of extended/ improved water supply and sanitation services, especially poor households	<p>If residents do not want the project or do not wish to pay for water and sanitation this will significantly influence project viability</p> <p>Primary beneficiaries for improved water supply and sanitation</p> <p>Affordable tariffs will be a primary consideration in the success of the project and the sustainable benefits it will bring to the residents (especially the poor households)</p>	Individual and family funds and assets	Represent and can influence individual and community needs
Poor and vulnerable urban and suburban households in the subproject areas	Concerns about the costs of connection and access to a reliable potable water supply and effective wastewater systems if the households cannot afford the connection costs	<p>The poor will need to be informed about the connection and tariff policies for water supply and sanitation.</p> <p>Reluctance (or unwillingness) to connect could obviate the benefits to the poor.</p> <p>Explanation of how to access "free" or subsidized connections respectively for sewerage and water supply will be an important requirement.</p> <p>Awareness raising required on the improvements to the household health and living standards and a lessening of the burden of domestic activities on households, and women in particular.</p>	<p>Individual and family funds and assets.</p> <p>Engagement of NGOs for providing explanation of connections policies and in assisting/advising residents on the processes for application.</p>	<p>Represent and can influence individual and community needs.</p> <p>Community has confidence in NGOs and the support they offer.</p>
Private Sector and Businesses				
Private Water Sellers and Vendors	Sellers of bottled water and tanker water usually delivered to households. Competitors of piped water service providers but can provide an essential service in some locations.	<p>Potential to negatively influence use of piped water for drinking.</p> <p>Potential to promote safe water handling and storage.</p> <p>Loss of income from reduced sales.</p>	<p>Company operations, equipment and assets.</p> <p>Required to maintain supplies to properties not connected to piped water network and to outlying peri-urban areas. The ability to work in partnership with the PWWS through bulk purchasing treated</p>	Companies exist and have the right to operate delivering a valuable service.

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
			water and delivery of safe potable supplies.	
Septic Tank Desludgers	Private companies or government businesses.	<p>Need to promote more frequent septic tank desludging, and public health regulations.</p> <p>Could cause environmental impact through continuation of unacceptable septage disposal practices.</p> <p>Need to organise for increased business from increased household and business demand for septage desludging.</p> <p>Need to improve own knowledge of septage management.</p>	<p>Desludging operations will continue to be required and the competition between private companies and the DPWT will ensure competitive pricing and the availability of services on an as required basis.</p> <p>Private companies exist with assets for the service and with capacity building and more effective licensing will provide improved and environmentally acceptable services.</p>	Companies exist and, subject to the licensing provisions have the right to operate, delivering a valuable service.
Plumbers, Masons, Water and Sanitation Material Suppliers.	Service providers and sellers of products related to water and sanitation.	<p>Influence quality of water and sanitation installations. Influence water conservation.</p> <p>Have the potential to provide information to householders on water and sanitation equipment, operation and maintenance.</p> <p>Have the potential to increased business in trade and sales and gain work from repairs to taps, pipe leakages, meter and water pipe installations, sanitation works and upgrading of pour flush toilets and septic tanks</p>	<p>Valuable resource of trained and skilled workmen with businesses and trade operations in existence and available to support community.</p> <p>Available workshops, tools and materials.</p>	Businesses in place with trained tradesmen. Available to support the water supply and sanitation sector improvements with a particular emphasis on household plumbing and drainage requirements.
Businesses	<p>Typically small businesses such as vehicle washing, restaurants, hairdressing, laundries, but also includes hotels, guest houses and restaurants.</p> <p>To operate profitable businesses and investments.</p>	<p>In areas of extended services businesses could support the project by connecting to piped water and sewerage systems.</p> <p>Some businesses are potentially heavy users of water and their cooperation is necessary during</p>	Own company funds and assets.	Represent individual and collective business interests.

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
	<p>Have access to reliable and clean water that is affordable which will support business expansion, new investments and reduce business operating costs.</p> <p>Require effective sanitation (wastewater) services to improve hygiene and environmental conditions.</p>	<p>drought periods, to reduce risks of disrupted supply.</p> <p>Increased costs for some operators by paying for piped water.</p> <p>Possible reduced costs compared to buying expensive water from other sources or savings on pumping costs.</p> <p>Improved off-site sewerage treatment</p> <p>Current water supply systems in the subproject towns are unreliable and non-existent in unserved areas. Piped wastewater systems are limited.</p> <p>Businesses suffer from the lack of water and sanitation, investments are stalled and some face high operating costs from running their own well operated systems or are supplied by expensive private water vendors.</p>		
Local Authority and Government				
<p>Ministry of Economy and Finance (MEF)</p>	<p>Responsible for the overall management of government finance and budget and the negotiation of overseas development assistance.</p> <p>Recipient of ADB loan, negotiates and signs loan agreements and responsible for loan disbursement and repayments.</p> <p>Effective and timely implementation of the Project and ensure that ADB policies and Government financial and procurements policies and regulations are properly followed and complied with.</p>	<p>Project funding has to be on acceptable terms and loan will require proper prioritization, design and loan due diligence, negotiation and approval.</p> <p>Lack of capacity and experience in the MIH, MPWT and the IAs to manage the design and effective implementation of the Project.</p>	<p>GoC funds and assets and Government budget and staff.</p>	<p>GoC financial policies, laws and regulations</p>

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
<p>Ministry of Industry and Handicraft (MIH)</p>	<p>Overall function of facilitation, coordination and development of urban water supply throughout the country; and promotion and mobilization of all available resources toward achieving the Government of Cambodia and MIH targets of 100% urban water supply and 90% suburban water supply by 2025.</p> <p>As EA for the water supply component and coordination of reports to MEF and ADB has key monitoring and oversight role. Influences implementing agencies (PWWs) at provincial level.</p> <p>Oversight of PMU within General Department of Potable Water Supply (GDPWS) for project management of water supply subprojects of PWSSP.</p>	<p>People in the subproject towns lack adequate and reliable potable water supply, contributing to a high incidence of water borne diseases and poor hygiene and sanitation in households.</p> <p>Lack of funding is a constraint on the progressive development of water supply and sanitation in Cambodia's towns and cities in line with national plans and priorities.</p> <p>Lack of capacity and experience in the MIH and IAs to manage the design and effective implementation of PWSSP.</p> <p>There is a demonstrated demand for the provision of better quality water supply services and improved sanitation in most urban towns and cities that has been confirmed by this PPTA through the participatory stakeholder engagement.</p> <p>Appropriate connection fees and tariff policies have to be applied to ensure full cost recovery and the profitability and financial autonomy of PWWs and at least O& M costs for the wastewater and sanitation subprojects. A lifeline block tariff for water supply will be applied to water to assist access and connection by the poor.</p>	<p>Government budget, assets and staff and ADB loan.</p>	<p>GoC/MIH policies and legislation for provision and regulation of urban water supply.</p>
<p>General Department of Potable Water Supply (GDPWS) within MIH</p>	<p>Responsibility for urban/ provincial public water works operations including water resource utilisation, treatment, distribution and operations and maintenance.</p>	<p>Influences water supply planning in sub-project areas and must accept responsibility for technical aspects of water supply.</p> <p>Must perform monitoring and oversight role for MIH as the PMU for the water supply component.</p> <p>Must provide support to PWWs for subproject implementation and for the efficiency and effectiveness of the</p>	<p>Government budget, assets and staff and ADB loan.</p>	<p>GoC/MIH policies and legislation for provision and regulation of urban water supply.</p> <p>Will be beneficiary of project capacity building activities and community behavioural change communication program.</p>

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
		extended and improved water supply systems. Also their performance against the expected benchmark criteria.		
PDIHs at Provincial Level	Implement MIHs regulations on drinking water quality and standards of service, monitor private operators and propose tariff modification.	Possess the institutional mandate but previously have lacked the institutional and financial capacity to support MIH at the provincial level or below. Also Assist with the renewal of licenses of private water supply operators.	Government budget and staff. Lack resources but these are improving.	Have the mandate through Government policies and laws to provide supervisory and regulatory oversight.
Ministry of Public Works and Transport (MPWT)	<p>Overall function of facilitation, coordination and development of urban wastewater systems and septage management and desludging operators either public or private operators licensed by MPWT and the provincial/ municipal governments throughout the country; and promotion and mobilization of all available resources toward achieving set goals and objectives.</p> <p>As the EA for the wastewater, sewerage and septage management subprojects of PWSSP has a key monitoring and oversight role. Influences implementing agencies (DPWT) at provincial level..</p> <p>Oversight of PMU within General Department of Public Works (GDPW) for project management.</p>	<p>People in the subproject towns lack adequate wastewater services and sanitation, contributing to poor hygiene and sanitation in households.</p> <p>Lack of funding is a constraint on the progressive development of sanitation in Cambodia's towns and cities in line with national plans and priorities.</p> <p>Lack of capacity and experience in the MPWT and IAs to manage the design and effective implementation of PWSSP.</p> <p>There is a demonstrated demand for the provision of improved sanitation in most urban towns and cities that has been confirmed by this PPTA through the participatory stakeholder engagement.</p> <p>Appropriate connection fees and tariff policies have to be applied to ensure cost recovery and at least O&M costs for the wastewater and sanitation subprojects.</p>	Government budget, assets and staff and ADB loan.	<p>GoC/MPWT policies and legislation for provision and regulation of urban wastewater and sanitation.</p> <p>Will be beneficiary of project capacity building activities and community behavioural change communication program.</p>
General Department of Public Works (GDPW).	Responsibility for urban infrastructure – roads, wastewater, septage management, drainage, solid waste with authority for these responsibilities coming from a sub-decree of 13 October 2016.	<p>Needs to ensure wastewater planning in sub-project areas.</p> <p>Responsible for technical aspects of wastewater and septage management and needs to exercise monitoring and oversight role for MPWT.</p>	Government budget, assets and staff and ADB loan.	GoC/MPWT policies and legislation for provision and regulation of urban wastewater and sanitation.

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
		Must support DPWTs and provincial/municipal government for subproject implementation and for the efficiency and effectiveness of the extended and improved sewerage and wastewater treatment plants, and septage management facilities.		Beneficiary of project capacity building activities and community awareness and behavioral change programs.
Provincial and Municipal Governments	<p>Primary responsibility for: assisting coordination, facilitation, and support in the development of urban water supply, wastewater systems and septage management.</p> <p>Environmental sanitation and community hygiene considerations; providing leadership to local population for acceptance and use of the improved services.</p> <p>Collaboration with MIH and the General Department of Potable Water Supply and MPWT and the General Department of Public Works for the establishment of regulations requiring connection to and use of the extended services.</p>	Need to provide support and assistance for project design and implementation at provincial and municipal level.	Staff resources and organization is in place and able to assist	<p>Presently lack authority to oversee management and operation of water and sanitation utilities even though Cambodia's Law on Decentralization and Deconcentration is being implemented.</p> <p>Indirect gains of provincial and municipal development.</p>
District Governments	Responsible for inputs relating to local environmental and design considerations and providing advice on subproject impacts. Support for consultation and discussions with Communes/ Sangkats and villages. Assistance with planning and the conduct of socio-economic surveys.	Assistance is necessary for coordination and approvals of socio-economic and other surveys and consultation meetings with communities. Vital involvement is secured and maintained to assist project implementation.	Staff and organization is in place and well able to assist.	Have mandate to assist in manner described and will gain improved knowledge of PWSSP and relevant subproject, with understanding of likely impacts and methods for mitigation of any potential impact.

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
Commune and Sangkat Leaders, Village Chiefs and Village Committees	Commune and Sangkat members, Chiefs, Deputy Chiefs and village committees constitute the "administrative bodies" that manage local and village affairs and implement development priorities in the village.	<p>Need to ensure and promote Commune and village participation in project, including dissemination of information about water supply, sanitation, hygiene and health.</p> <p>Need to promote and facilitate upgrading of sanitation facilities for poor households, and provide liaison between project and community members.</p>	Organisations in place and well able to assist	<p>Have mandate for involvement as described and this and knowledge on PWSSP will strengthen commune level governance.</p> <p>Role in assisting the project with knowledge and skills gained will improve relationship with the community they represent.</p>
Provincial Water Works (PWWs)	<p>Management and operation of water supply development in urban and suburban areas within their respective boundaries and the management of operations on a commercial basis in accordance with forward plans and the Prakas for the performance of all public waterworks, Setting Performance Indicators for evaluation under the jurisdiction of MIH.</p> <p>Significant influence in supplying water at a given service level within subproject areas, setting tariffs and recovering costs within accepted indicators for clean water supply, performance, human resources capacity, and governance – designed for cost effective and improvement of the water supply operations.</p>	<p>Capacity and skills to operate and manage water supply services including customer relations.</p> <p>Ability to meet consumer demand for improved water supply.</p>	Government and Project budget, assets and staff. Revenue from water supply operations.	<p>Have the mandate through Government policies and laws to operate the provincial town water supply</p> <p>Beneficiaries of project capacity building activities and community behavioural change communication program.</p>

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
Provincial DPWT Wastewater and Treatment Plant Units	<p>Management and operation of wastewater treatment plants and systems, and septage facilities within municipalities and provincial towns where these facilities exist, or are proposed by PWSSP.</p> <p>Significant influence in the provision of wastewater services at acceptable levels for the subprojects, setting tariffs according to fees and charges approved jointly by MEF and MPWT</p>	<p>Capacity and skills to operate and manage wastewater treatment plants, sewerage networks and septage facilities, including customer relations.</p> <p>Ability to meet consumer demand for improved wastewater services and improved septage management.</p>	Government and Project budget, assets and staff. Revenue (limited) from wastewater and septage activities.	<p>Have the mandate through Government policies and laws to operate the provincial wastewater and septage undertakings.</p> <p>Beneficiaries of project capacity building activities and community behavioural change communication program.</p>
Resettlement Committees and Groups				
<p>Inter-Ministerial Resettlement Committee.</p> <p>MEF Resettlement Group.</p>	<p>Overall responsibility for correctness of approach, and resettlement framework and compensation matrix.</p> <p>Closely coordinated with PRSC-WG in leading the detailed measurement survey (DMS) and guiding all resettlement implementation procedures.</p>	<p>Need to be consulted and informed about the project as the Committee provides overall authority for land Acquisition and Resettlement (LAR) procedures aligned to Asian Development Bank's (ADB's) relevant policies and guidelines (Safeguard Policy Statement 2009) and Government policies.</p>	Committee structure, staff and budget.	Government and MEF mandate for role.
Provincial Resettlement Committee (PRSC)	<p>PRSC handles overall supervision and guides all LAR activities with involvement in the consultation process.</p> <p>PRSC administers the compensation with the working group (WG) as the "technical arm" of PRSC.</p>	<p>Involved in determining land acquisition requirements and entitlements for compensation and rehabilitation; and coordinates issuance of land titles.</p> <p>Need to be consulted and advised on safeguards requirements of the project as the committee assumes later responsibility for the RP.</p>	Committee structure, staff and budget.	Government and provincial mandate for role.
District, Commune Village Working Group (WG)	<p>WG acts as LAR planner and support for the project.</p> <p>Plays the role of facilitator and mediator between district, commune and villages</p>	<p>Need to be consulted and advised on safeguards requirements of the project.</p>	Committee and working groups established and in place	Role mandated by district and village authorities.
Civil Society; Non-Government Organizations				
Civil society groups that consist largely of NGOs in Cambodia but may	Major focus is on facilitating improved access to water supply and sanitation services for poorer and vulnerable households in urban and peri-urban	Executing agencies have limited past involvement or partnership with NGOs/civil society and have limited awareness on the role and value	Resources are more concentrated in the field of advocacy than actual water supply or	NGOs are civil society have their own mandates but have

Stakeholder Group	Stakeholder's Interest	Perceived Problems	Resources	Mandate
also include local community groups that are without incorporation and therefore unrecognized within the NGO community. There has been only limited involvement or interface with larger scale water supply and sanitation projects.	<p>contexts, especially households that are threatened with or have been involuntarily resettled.</p> <p>There is scope to network the resources and experience to participate in IEC campaigns and raising public and community awareness and support for development projects.</p>	<p>adding that NGOs could contribute to urban water and sanitation development.</p> <p>Civil society groups have been more interested in the provision of small-scale water supply infrastructure such as neighborhood water collection points and smaller-scale storage tanks and basic sanitation that are more suited to rural contexts than urban contexts.</p>	sanitation infrastructure investment and are unlikely to change. Is recognition by most civil society groups that they lack the financial resources to make such investments on anything but a very small- scale and this is largely in rural areas or an ad-hoc and temporary basis in urban areas.	<p>received little support or recognition from GOC.</p> <p>Potential beneficiary of project</p>
Donor Partners				
ADB	Donor agency offering financial assistance to Royal Government of Cambodia (GoC) for project.	<p>Influences project financing in accordance with agreed development programs, and in compliance with ADB policies and guidelines.</p> <p>Many donors are involved in Cambodia's water sector and there is a need for donor coordination to optimize the use of resources and capacity and to avoid duplication.</p>	Resources include loan monies for investment in urban infrastructure such as water supply and sanitation for PWSSP.	ADB Mandate is established
Agence Française de Développement (AfD)	Donor agency offering financial assistance to Royal Government of Cambodia (GoC) for project	Influences project financing in accordance with agreed development programs, and in compliance with policies and guidelines applying to AFD funding.	Resources include loan monies for investment in urban infrastructure such as water supply and sanitation for PWSSP.	ADB Mandate is established

IX. ANTICORRUPTION POLICY

104. ADB reserves the right to investigate, directly or through its agents, any violations of the Anticorruption Policy relating to the Project.³² All contracts financed by ADB shall include provisions specifying the right of ADB to audit and examine the records and accounts of the executing agency and all Project contractors, suppliers, consultants and other service providers. Individuals/entities on ADB's anticorruption debarment list are ineligible to participate in ADB - financed activity and may not be awarded any contracts under the Project.³³

105. To support these efforts, relevant provisions on good governance frameworks are to be included in the loan agreement/regulations and grant agreement/regulations and the bidding documents for the Project.

106. In all instances, the Loan Agreement shall be the overriding legal document. ADB Procurement Guidelines (2015, as amended from time to time) and ADB Guidelines on the Use of Consultants by the Asian Development Bank and its Borrowers (2013, as amended from time to time), shall be applied pursuant to the Loan Agreement as they may be modified by the Loan Agreement. The Government of Cambodia's policies and procedures shall be applicable to the extent there is no discrepancy with the Loan Agreement or ADB's Procurement Guidelines and Consulting Guidelines. In the event there is a discrepancy, then the Loan Agreement, the Procurement Guidelines and the Consulting Guidelines shall apply.

X. ACCOUNTABILITY MECHANISM

107. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism.³⁴

XI. RECORD OF CHANGES TO THE PROJECT ADMINISTRATION MANUAL

108. All revisions/updates during course of implementation should be retained in this Section to provide a chronological history of changes to implemented arrangements recorded in the PAM.

- Discussion and endorsement of the PAM during loan negotiations held [Date to be inserted] 2017

³² Available at <http://adb.org/Documents/Policies/Anticorruption-Integrity/Policies-Strategies.pdf>

³³ ADB's Integrity Office web site is available at: <http://www.adb.org/integrity/unit.asp>.

³⁴ Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>.

Appendix 1

PIAC Detailed Terms of Reference

Cambodia - Provincial Water Supply and Sanitation Project

Consultant's Terms of Reference

Project Implementation Assistance (PIA) Consultant Package

A. Background

1. **Macro-economic context.** Cambodia's 2016 population is estimated at 15.2 million, spread across 24 provinces, 26 cities, and district towns. This population is predicted to exceed 17 million by 2022. While Cambodia remains almost 80% rural, urbanization is accelerating and the urban population is expected to reach 30% of the national total by 2030. This urban growth has mostly been centered in and around the capital, Phnom Penh. Over the past decade, provincial cities and towns have increasingly come to play an important role in the country's economy and are impacted by increasing urbanization. This is particularly the case in the cities of Battambang, Kampong Cham, Siem Reap, and Sihanoukville, which have grown to become important secondary cities, commercial and connectivity hubs, and tourism centers.³⁵ Rapid economic development and urban migration in the cities have stressed basic urban services, especially WSS, and necessitated the upgrading and expansion of the infrastructure and improvement in service quality.

2. **Access to Services.** Countrywide, population access to improved water supply in urban areas (excluding Phnom Penh) is 69.7%, while access to piped water supply is low at only 42.2%. So, rapid expansion of the infrastructure is required to meet the government's 2025 target of 100% population access to potable water. Population access to improved sanitation in urban areas is 80.2%, while access to sewerage and wastewater treatment is only 10.7%; a large proportion (69.3%) have individual systems (septic tanks). Open defecation in urban areas remains unacceptably high at 17.3%.³⁶ The low sanitation coverage across the country has also led to widespread pollution, affecting rivers, coastal areas, and tourist areas. Except for Phnom Penh, the government has not invested adequately in urban WSS since the mid-1990's resulting in significant service delivery gaps due to: (i) inadequate funds for capital investment and operation, (ii) weak regulatory framework and sector planning, and (iii) weak institutional capacity to implement and provide sustainable services.³⁷

3. **Policy Framework.** Cambodia's National Water and Sanitation Policy³⁸ laid basic principles for urban and rural WSS service delivery in the country, including duties and responsibilities for planning and implementation, standards, oversight, and evaluation. For urban areas, the National Strategic Development Plan (NSDP) 2014-2018 provides key actions for water

³⁵ The tourism industry benefits many different sectors within Siem Reap with over 2.1 million international and around 3 million domestic visitors in 2015. Ministry of Tourism 2015.

³⁶ Improved urban water supply includes piped water to households, public tap/standpipe, boreholes, protected wells and improved rainwater collection. Improved sanitation includes flush/pour flush to piped sewers, septic tanks, and pit latrines with slab. Tables 9 and 11 of Cambodia Socio-Economic Survey, Ministry of Planning, 2014.

³⁷ Urban water supply investments were mostly centered on Phnom Penh, where today the Phnom Penh Water Supply Authority (PPWSA) is recognized regionally as one of the most efficient water utilities in Asia. Sanitation nationwide is lagging significantly.

³⁸ Royal Government of Cambodia. 2003. *National Water and Sanitation Policy*. Phnom Penh.

supply but actions for sanitation are not well defined.³⁹ Consequently, to support the subsector's development, a draft sanitation roadmap⁴⁰ was prepared under the technical assistance (TA).⁴¹

4. Institutional Arrangements. Responsibility for the WSS sector is fragmented, requiring cooperation among ministries and by overcoming structural and organizational weaknesses. Urban water supply falls under the responsibility of the Ministry of Industry and Handicraft (MIH) and service delivery is entrusted to the provincial waterworks (PWWs), under the provincial government. Urban sanitation is the responsibility of the Ministry of Public Works and Transport (MPWT) while operation and maintenances falls under the provincial wastewater units (PWUs), under the provincial governments. However, the PWWs and PWUs have limited autonomy – PWWs operate using their revenues from water tariffs while PWUs must operate with limited revenues as recovery of sanitation tariffs is mixed with the provincial revenues. In late 2016, the Department of Potable Water Supply of MIH was upgraded to a general department, to better support the sector with increased staffing and improved organization of activities. While this change is significant for sector development, capacity development/training is required to support these expanded activities, which will be supported by the project. A dedicated Department for Urban Sanitation has also been created at MPWT, with similar needs. Recent and continuing government reforms, as described in para 8, are transforming the sector and improving coordination between agencies, but additional support is needed to accelerate this work.

5. Service delivery through the private sector. In many cities and towns, small-scale private water operators have filled the gap, but these services generally only provide water to the more profitable core areas of the town and many households remain unconnected, particularly the poor.⁴² However, the infrastructure, water quality, and service standards of private water operators remain poor, and lack technical expertise and financial capacity to support any form of private sector development. Given the low participation levels by the private sector, MIH continues to expand service delivery by the PWWs where there is significant demand.

6. Sector reforms and improving financial performance. In 2014, MIH launched a sector reform program to improve urban water supply services and financial performance of PWWs, focusing on operational improvements and efficiency gains. The program is based on the reforms that made PPWSA one of the most efficient water utilities in Asia.⁴³ Minor tariff increases were made where needed and possible as the law only permits tariffs adjustments once every five years. Based on MIH's reform program, in 2017: (i) all PWWs are recording positive incomes, (ii) nonrevenue water is mostly below 20%, and (iii) service quality has improved. Tariffs are now at

³⁹ National Strategic Development Plan 2014–2018, Royal Government of Cambodia, Phnom Penh, 2014. Key actions for water supply in the NSDP are: (i) development of a legal framework for urban water supply; (ii) promotion of decentralization and deconcentration; (iii) transfer of full autonomy for service delivery to all PWWs; (iv) mobilization of urban water sector financing; (v) improvement of sector performance and public access to safe, affordable, and sustainable water supplies; and (vi) improvement in the protection of water sources and enforcement of regulations.

⁴⁰ The draft 20-year sanitation roadmap (expected to be adopted by 2020) provides directions on (i) tariff setting and cost recovery, (ii) subsidies to encourage increased uptake of sanitation, and (iii) city-wide sanitation planning and implementation. It also presents common aims and standards for all DPWTs to (i) reduce the differences in capacity, (ii) improve planning for increased sanitation coverage, and (iii) improve coordination between the WSS subsectors.

⁴¹ TA-8556 REG: Supporting the Cities Development Initiative for Asia (CDIA) supported in developing pre-feasibility studies and preliminary engineering designs for the project and a draft sanitation roadmap.

⁴² Investment by the private sector has been hindered using 3-year water licenses, limited access to finance, and poor capacity. In 2014, MIH issued a ministerial decree that provides more clarity about the licensing process and grants a 20-year license term for operators in a defined service area.

⁴³ The success of PPWSA is characterized by strong and long-lasting leadership, autonomy to allow the freedom to operate on corporate principles, continuous staff development, performance-based bonus system, customer orientated service, high quality infrastructure and equipment, and a strong focus on nonrevenue water reduction, energy efficiency, and expansion of coverage.

sustainable levels for financing operation and maintenance (O&M) but are insufficient to finance the capital costs required for system expansion. Support for capital investments to expand infrastructure coverage and increase the customer base is now an urgent priority for the MIH and is crucial for PWWs to achieve financial autonomy by 2019 in line with the NSDP.

7. **Supporting the sanitation subsector.** Although the sanitation subsector has made positive steps in terms of coverage, overall the wastewater (including collection and treatment) remains in the early stages of development. A new focus on sanitation has evolved through recent ADB urban development projects and good government support now exists to increase sanitation coverage, enhance sustainability through improving revenues for O&M, and reduce pollution to watercourses draining to the Tonle Sap lake and the sea.⁴⁴ Piped sewer systems and wastewater treatment plants (WWTPs) are present in only three provincial cities,⁴⁵ and expansion is needed for the environmental and health benefits to be realized. For other cities and towns, like Kampong Cham, formal sanitation services are absent and septage management needs to be introduced as a first step in mainstreaming sanitation countrywide.

8. **Project specific constraints.** Given that the government's ongoing sector reform is showing good results, the immediate demand is for capital investment to support expansion of services. The project will support ongoing water supply and sanitation service improvement in key economic growth centers that experience the following constraints:

- (i) In Battambang, population with access to piped water supply is about 31% and to sewerage is 5%. The WWTP capacity is inadequate to treat and discharge the sewage.
- (ii) In Kampong Cham, population with access to piped water supply is about 37% and there is no access to a formal sanitation system.
- (iii) In Sihanoukville, while other projects are expanding access to water supply, the population with access to sewerage is 22% but WWTP capacity is inadequate and needs expansion together with the sewerage system.
- (iv) In Siem Reap, while other ongoing projects will expand access to water supply, the population with access to sewerage is 50%. However, the trunk sewer is structurally and hydraulically inadequate, resulting in pollution of local watercourses.

9. **ADB's assistance and lessons learned.** ADB has supported the urban WSS sector since 1995, starting with supporting water supply improvements in Phnom Penh. The project incorporates lessons learned in implementation: (i) improving specifications for materials and equipment to enhance project quality and sustainability; (ii) introducing energy efficiency measures to reduce O&M and capture carbon emissions; (iii) providing higher levels of project supervision to improve project deliverable quality; (iv) continuing provision of capacity building support to improve sector sustainability; and (v) considering the use of design-build contracts to promote design flexibility and expedite project delivery through private sector efficiency.

10. **Development Coordination.** The project has been closely designed with the Japan International Cooperation Agency (JICA) and the AFD, which are active in this sector. While the World Bank has been less active in the sector, coordination continues as it has plans to re-enter the sector. JICA is working in numerous provinces to increase urban water supply coverage in core areas, and is providing extensive capacity development support for PWWs. AFD is financing

⁴⁴ Battambang, Kampong Cham, and Siem Reap are cities in the Tonle Sap basin whose drainage systems flow to the Tonle Sap lake. While Sihanoukville is the main coastal city where drainage systems discharge to the sea.

⁴⁵ Battambang, Siem Reap, and Sihanoukville, all with support from previous ADB-financed projects.

a new water treatment plant in Phnom Penh, and has a parallel cofinanced project in Siem Reap for a water treatment plant to provide water for the distribution zone financed by ADB.

11. **Strategic Context.** The project is aligned with: (i) phase 3 of the government's rectangular strategy for growth, employment, equity, and efficiency;⁴⁶ (ii) Cambodia's NSDP; (iii) the action plans of the MIH to strengthen the management of publicly owned waterworks, and integrate urban water supply with urban environmental management; and (iv) MPWT requirements for improved and effective urban sanitation. The project is consistent with the three pillars of the ADB Country Partnership Strategy (2014–2018) and supports ADB's Water Operational Plan and ADB's Urban Operational Plan.⁴⁷

12. **Value added by ADB assistance.** ADB's continued assistance to the government's sector development strategy is important to ensure access to equitable WSS services in Cambodia's towns and cities. It will provide not only the finance and capacity development required to implement the project but (i) incorporate high-level technologies addressing cost-effective wastewater treatment, energy efficiency and advanced construction techniques (trenchless methods for pipe laying), (ii) use design-build procurement modalities to expedite design and construction and benefit from private sector experience and capacity, (iii) support PWWs' progress toward financial autonomy by 2019 by expanding the customer base, and (iv) promote sustainability of the PWUs, through ring-fencing of revenues dedicated for O&M and development of a financially sustainable tariff policy.

13. **The Project.** The project will expand and improve urban water supply and sanitation (WSS) services in four of Cambodia's largest provincial cities, which are important commercial, industrial, and tourist centers but lack access to piped WSS services.⁴⁸ The project will also improve institutions' capacity to provide sustainable WSS services.

B. Project Objectives

14. **Impact and outcome.** The project is aligned with the following impact: improved urban environments and quality of life for the urban residents. The project will have the following outcome: sustainable piped WSS services provided in selected provincial cities.

15. **Output 1. Water supply systems improved.** The project will finance two water supply subprojects (in Battambang and Kampong Cham), including two new water treatment plants (WTPs) with a combined capacity of 61,600m³/day and new distribution networks with a combined length of 161 km, which will also assist in reducing NRW. The expanded systems will serve an additional 209,000 people (about 40,000 connections) by 2022 (achieving a population coverage of around 90%), increasing revenues and reducing unit costs through increased economies of scale. A subsidized connection policy will be developed, similar to the PPWSA approach,⁴⁹ to encourage connection by poor and disadvantaged households (covering about 15% of connections). New laboratory equipment will improve monitoring and water quality testing.

⁴⁶ Royal Government of Cambodia. 2013. *Rectangular Strategy for Growth, Employment, Equity, and Efficiency – Phase III*. Phnom Penh.

⁴⁷ ADB. 2014. *Country Partnership Strategy: Cambodia, 2014–2018*; Manila. ADB. 2011. *Water Operational Plan, 2011–2020*. Manila; ADB. 2012. *Urban Operational Plan, 2012–2020*. Manila.

⁴⁸ 2015 estimated populations: Battambang (257,600), Kampong Cham (86,100), Siem Reap (200,000), and Sihanoukville (78,250).

⁴⁹ PPWSA approach provides subsidies of 100%, 70%, 50%, and 30% depending on household income and financial situation. The balance after the subsidy can be paid over a period of up to 24 months through water billing.

16. **Output 2. Sanitation services improved.** The will finance four sanitation subprojects, including (i) a new 10,625 m³/day capacity WWTP at Battambang and 15.4 km of new sewers, (ii) a septage management system (collection, treatment, and disposal) in Kampong Cham, (iii) expansion of the Sihanoukville WWTP from 6,900 m³/day to 20,500m³/day and 32.1 km of new sewers, and (iv) a new 3.7 km trunk sewer in Siem Reap, constructed using trenchless technology to limit disturbance to business and tourism activities.

17. **Output 3. Capacity developed to support sustainable development, and operation and management.** The project will address institutional effectiveness through improved coordination between MIH and MPWT, provide continued support to help PWWs and PWUs achieve financial autonomy, and support the MIH to develop its regulatory role. It will improve staff capacity in project implementation of urban WSS projects and O&M through on-job training. The project will help develop a new master's program in water and wastewater engineering with the Institute of Technology Cambodia to support future graduates in the sector.⁵⁰

C. Objectives of the Assignment

18. **Project implementation and organization.** The project is scheduled for implementation over 5 years from March 2018 to February 2023. MIH will be the Executing Agency and a Coordinating Committee will be established for project and sector coordination between MIH and MPWT. MIH will have responsibility for the coordination and consolidation of reports to MEF and ADB.

19. Two PMUs will be established in (i) the General Department of Potable Water Supply within MIH for the water supply subprojects, and the General Department of Public Works within MPWT for the wastewater/septage subprojects, with full-time staff to execute and manage the Project. An English-speaking project coordinator will be assigned to each PMU. PIUs will be established in the PWWs at Battambang and Kampong Cham, and the DPWTs at Battambang, Kampong Cham, Sihanoukville and Siem Reap, with responsibility for daily oversight and supervision of subproject implementation.

20. The PMUs will ensure effective project execution, including overall project planning; ensuring designs and contract documents are prepared and approved; ensuring contracting and procurement of goods, works and services under the project; monitoring and reporting to the Government and ADB on project implementation; ensuring compliance with project safeguards and loan covenants; and assist PIUs with project and construction supervision, monitoring and reporting and day-to-day management of project activities.

21. The PMUs and PIUs will require assistance in managing and implementing the project. This will be provided through the provision of consulting services under the proposed project implementation assistance consultants (PAIC) package. A team of international and national consultants (the PIAC) will be recruited under ADB guidelines to provide this assistance.

22. The overall objectives of the PIAC is to enhance the effectiveness of the PMUs and PIUs and to ensure (i) the proposed project is managed and implemented efficiently, (ii) subproject designs and specifications are appropriate for the intended purpose and of the required quality, (iii) procurement is conducted in a timely manner, (iv) a high quality of construction for all subprojects completed to program; (v) project performance is maintained and the project completed on time; and (vi) monitoring of social and environmental safeguards is undertaken correctly and in a timely manner. Key objectives of the assistance provided by the PIAC are:

⁵⁰ Further information is provided in the Project Administration Manual (accessible the list of linked documents in Appendix 2).

D. Scope of Services

23. The scope of the consulting services comprises the following tasks to complete project outputs 1 to 3 as described in the preceding paragraphs:

- (i) Provide project implementation and management support to the MIH and MPWT, including compliance with ADB safeguards, procurement, and progress and performance monitoring for ADB on a quarterly basis.
- (ii) Provide the required engineering and procurement services to MIH for implementation of design-build water supply projects, including (i) review of submitted bids and engineering designs, (ii) assistance with any required contract clarifications and negotiations, (iii) assistance with preparation of final contract documents, (iv) full-time construction supervision services, and (v) commissioning and handover of the works.
- (iii) Provide the required engineering and procurement services to MPWT for implementation of design-build wastewater treatment and septage treatment projects, including (i) completion of preliminary design and bidding documents, including further studies, surveys, and investigations as needed; (ii) assistance with prequalification, bidding, and procurement activities; (iii) review of submitted bids and engineering designs; (ii) assistance with any required contract clarifications and negotiations; (iii) assistance with preparation of final contract documents, (iv) full-time construction supervision services; and (v) commissioning and handover of the works.
- (iv) Provide the required engineering and procurement services to MPWT for implementation of sewerage projects, including (i) studies, surveys, investigations, as needed; (iv) detailed engineering design and bidding documents, using admeasurement contract(s), (ii) assistance with bidding and procurement activities; (iii) review of submitted bids, (ii) assistance with any required contract clarifications and negotiations, (iii) assistance with preparation of final contract documents, (iv) full-time construction supervision services, and (v) commissioning and handover of the works.
- (v) Assist the government with the procurement of other contracts as needed for the project.
- (vi) Undertake surveys, studies, and investigations necessary to satisfy the social, environmental, gender, and other requirements of the project.
- (vii) Develop the capacity of the government staff to effectively manage project execution and downstream activities.
- (viii) Develop the capacity of the government staff in operation and maintenance of the facilities developed and equipment purchased under the project.

24. Contract strategy and status of the main works packages are summarized below:

- **Battambang Water Supply:** bidding documents completed and procurement of the design-build package ongoing by the EA covering intake, raw water transmission, water treatment plant, and distribution network.
- **Kampong Cham Water Supply:** bidding documents completed and procurement of the design-build package ongoing by the EA covering intake, raw water transmission, water treatment plant, and distribution network.

- **Siem Reap Trunk Sewer:** bidding documents completed and procurement of the design-build package ongoing by the EA.
- **Wastewater Treatment and Septage Treatment for Battambang, Sihanoukville, and Kampong Cham:** preparation of prequalification documents, final studies and investigations for preliminary design, and final bidding documents (using admeasurement contract) require preparation by the PIAC.
- **Sewerage for Battambang and Sihanoukville:** PIAC to prepare detailed engineering design (including conduct of studies, surveys, and investigations), and bidding documents.

25. The PIAC will prepare procurement documents including specifications for required plant and equipment contracts to the satisfaction of the government.

26. The PIAC will prepare detailed designs and cost estimates—accurate to plus or minus five percent—and bidding documents in line with the procurement plan and ADB’s standard bidding documents. The PIAC will support the government to manage and administer construction contracts, including any variation orders. The Consultants will also support the PMUs and PIUs in the supervision of construction to ensure quality control and compliance with all aspects of the project designs and specifications.

27. All design and procurement documents prepared by the Consultants will be in accordance with national and international norms and procedures as required. The PIAC will coordinate closely with and support the PMUs and PIUs in all aspects of the consultancy design and supervision services. Bidding and Contract Documents shall be in accordance with the *ADB Procurement Guidelines (2015 as amended from time to time)*, ADB’s Standard Bidding Documents for Procurement of Works, or Procurement of Goods, and government procurement rules and regulations.

28. The PIA Consultants will assist and support the PMUs and PIUs in project implementation, management and financing, managing imprest/sub-accounts, monitoring resettlement, and environmental and social safeguards. General tasks include :

- (i) Setting up project accounts.
- (ii) Preparing project administration procedures, manuals, and software.
- (iii) Training PMU and PIUs’ staff on project implementation.
- (iv) Training on ADB procedures for national, provincial and municipal agencies and for other stakeholders as needed.
- (v) Preparing, updating, and implementing resettlement plans, environmental impact assessments, and other social plans—gender action plan—for the project.
- (vi) On-job-training for PMUs, PIUs, and provincial and municipal agencies on (O&M) of the infrastructure improvements to be implemented under the project.
- (vii) Preparation of required project reports—quarterly progress (including safeguards and other monitoring reports), annual project performance monitoring and evaluation, and other required reports.
- (viii) Support the Government and the ADB project team in carrying out milestone reviews—midterm and final reviews, and the preparation of the project completion report (including safeguards and other monitoring reports). The PIAC will also

assist in updating the procurement capacity assessment and other requirements for ADB's midterm review.

29. On-the-job training for PMU and PIUs includes:
- (i) training staff for the effective and efficient implementation of the project.
 - (ii) improving staff capacities in the management of the new facilities.
 - (iii) ensuring adequately trained staff for effective operations and maintenance of the project facilities, and to enhance cost recovery.
 - (iv) strengthening monitoring, reporting and evaluation of the project (project performance management system)
30. The project implementation support includes a training plan to transfer knowledge in all aspects of project management; more specifically:
- (i) **Procurement**—formal and informal training through on-the-job sessions which will include the preparation of bidding documents, specifications, selection criteria as well as bid evaluation processes. It will cover the training of EA, PMUs, and PIUs and will be coordinated with available ADB training.
 - (ii) **Financial management**—the procurement and operationalization, including staff training, of a computerized accounting system for the PMUs and PIUs; training in ADB loan disbursement procedures and the government's standard operating procedures for externally-financed programs and projects; and technical support in project financial management and administration, and project accounting. This will be coordinated with available ADB training.
 - (iii) **Customer relations and stakeholder communications**—training to improve the interface with customers, and the design and operations of an effective billing and collection system. Assistance with the design and implementation of water supply and sanitation awareness and public information campaigns.
 - (iv) **Social safeguards**—training of PMUs and PIUs staff in the design and methodology for undertaking poverty and social assessments (PSA), conducting such surveys, and the necessary data and information analysis. These training programs will incorporate the provisions of the national policies and requirements of ADB's Safeguard Policy Statement. Training to enable staff to review and update the resettlement framework, resettlement plans (RPs), and due diligence reports (DDRs).
 - (v) **Gender mainstreaming**—participatory workshops with provincial and municipal authorities and project staff to update the gender action plan (GAP), to improve knowledge and skills staff in respect of gender issues, increasing women's participation in key decision making and implementation arrangements. On-the-job training will be provided on gender related matters. Information, Education and Communication (IEC) programs will also be implemented to improve the participation of women in urban community development through communities in the two towns. Implementation of workshops and sessions might be done together with MIH's and MPWT's gender working group.
 - (vi) **Environmental management**—training to enable staff to review the Initial Environmental Examination (IEE) reports, DD Rs, and to update the Environmental Management Plans (EMPs). **Note that environmental documents for submission**

to the Ministry of Environment must be prepared by an approved consultant/consulting firm in accordance with the national regulations.

- (vii) **Operation and maintenance of the project facilities**—manuals will be prepared with the PMU and training will be provided on their use in coordination with the manuals and training provided by the design-build contractors and equipment/plant suppliers. Training, through workshop sessions, group discussions and on-the-job training will be provided to the PIUs. Training also will be provided in revenue generation and collections, if needed.
- (viii) **Monitoring, reporting and evaluation**—training to enable the design and implementation of the Project Performance and Monitoring System (PPMS). This will assist the project staff to carry out monitoring, reporting and evaluation activities required during implementation.

31. The training plan will be implemented by the EA through the PMUs, and assisted by the PIAC. Capacity building assistance and training programs on financial and procurement management will need to be closely coordinated with the Ministry of Economy and Finance (MEF), complemented with available ADB training programs. The PMUs will work closely with Ministry of Environment (MOE) on the training programs involving the updating of the EMPs and mitigation measures on environment safeguards. Capacity development on gender considerations will be coordinated with the gender working group within MIH, MPWT, and the Ministry of Women's Affairs (MOWA), and sustainability measures will be developed during project implementation. The training programs for O&M of will be coordinated by the PMUs and may utilize the expertise of Phnom Penh Water Supply Authority, where available.

E. Team Composition and Qualification Requirements for the Key Experts

32. The PIA Consultant team to be fielded will prepare detailed engineering designs, bidding, undertake construction supervision, and to implement the training will require an estimated 525 person-months of consultants—92 person-months of international and 433 person-months of national consultants will be required. Proposed staffs may cover more than one position if their qualifications allow and the implementation of the project is not affected. The team will work closely with all relevant stakeholders, particularly the PMUs and the PIUs. All team members are expected to act as resource persons for the training and development activities. The international and national positions required are set out in the table below:

Position & Task	Person-Months	Minimum Qualifications	Minimum Work Experience
<i>International Consultants</i>			
Team Leader and Municipal Engineer	36	Degree in civil/municipal engineering or a related discipline. Professional qualifications from an internationally recognized engineering institution would be an advantage.	20 years' experience in detailed design and construction supervision of urban water supply and sanitation systems, including water and wastewater treatment plants, with at least 10 years in developing countries. Previous experience as team leader of water supply and sanitation projects financed by multilateral development agencies in Southeast Asia is preferred. Experience or familiarity in the operation and maintenance of water and sanitation facilities is also preferred.

Position & Task	Person-Months	Minimum Qualifications	Minimum Work Experience
Water Supply Engineer	12	Degree in civil/municipal engineering or a related discipline.	10 years' experience in the detailed engineering design of urban water supply systems and water treatment plants. Previous experience working on urban water supply projects financed by multilateral development agencies in Southeast Asia is preferred.
Wastewater and Sanitation Engineer	12	Degree in civil/municipal engineering or a related discipline.	10 years' experience in the detailed engineering design of urban wastewater and sanitation systems. Previous experience working on urban wastewater and sanitation projects financed by multilateral development agencies in Southeast Asia is preferred.
Electro-Mechanical Engineer	6	Degree in mechanical or electrical engineering or a related discipline.	10 years' experience in the detailed engineering design of urban water supply and wastewater projects. Previous experience working on water supply and sanitation projects financed by multilateral development agencies in Southeast Asia is preferred.
Environment Specialist	5	Master's Degree in environmental science, engineering, planning or equivalent	10 years' experience in environmental management & assessment in developing countries. Experience in Southeast Asia of urban water supply, sanitation, or related projects financed by multilateral development agencies is preferred.
Social Safeguards and Resettlement Specialist	5	Degree in relevant social sciences discipline	10 years' experience in social development, land acquisition, and resettlement preferably within urban and peri-urban communities. Experience in Southeast Asia on urban water supply and sanitation projects financed by multilateral development agencies is preferred.
Finance Specialist	2	Degree in finance, accounting, business management or a related discipline.	10 years of experience of financial management & accounting of projects financed by multilateral development funding agencies, with 5 years' experience on the financing of urban water supply and sanitation projects and on designing cost recovery systems. Previous experience working on projects in Southeast Asia financed by multilateral development agencies is preferred.
Institutional/Training Specialist	4	Master's degree in human resource management or a related discipline or an equivalent professional qualification.	15 years of working experience in institutional development and capacity building of public entities and water utilities, preferably involved in urban water supply and sanitation service delivery. Experience in designing and conducting training courses/assignments in urban water supply and sanitation is essential and previous work on projects in Southeast Asia financed by multilateral development agencies is preferred.
Wastewater Treatment Specialist	4	Master's degree in engineering or the sciences relating to process design and hydraulics.	10 years' experience in process design of wastewater treatment plants. Previous experience working on urban wastewater projects financed by multilateral development agencies in Southeast Asia is preferred.

Position & Task	Person-Months	Minimum Qualifications	Minimum Work Experience
Project Performance Monitoring System (PPMS) Specialist	3	Master's degree in project management or a related discipline.	10 years of experience in project management and planning of projects financed by multilateral development funding agencies. Previous experience working on water supply and sanitation projects in Southeast Asia financed by multilateral development agencies is preferred.
Utility Training Specialist	3	Degree in civil/municipal engineering or a related discipline. Professional qualifications from an internationally recognized engineering institution would be an advantage.	15 years' experience in the operation and maintenance of urban water supply and sanitation systems, including water and wastewater treatment plants, with at least 10 years in utility management and 5 years in developing countries. Previous experience of water supply and sanitation projects financed by multilateral development agencies in Southeast Asia is preferred.
TOTAL	92	Person Months of International Consultants	
<i>National Consultants</i>			
Deputy Team Leader/ Water Supply Engineer	44	Degree in civil or municipal engineering or a related discipline	15 years' experience in detailed design and construction supervision of urban water supply, sanitation and related projects. Previous work experience on projects with multilateral development agencies, with 3 years' experience as a deputy team leader on such projects. Fluency in written and spoken English is required. Experience working on projects financed by multilateral development agencies and with water utilities is preferred.
Water Supply Engineer	40	Degree in civil engineering or a related discipline specializing in water supply.	10 years' experience in the detailed engineering design of urban water supply systems and water treatment plants. Fluency in written and spoken English is required. Must have a demonstrated ability to work within a multi-disciplinary consulting team with counterparts and other project stakeholders. Experience working on projects financed by multilateral development agencies is preferred.
Sanitation Engineer	40	Degree in civil engineering or a related discipline specializing in wastewater and sanitation.	10 years' experience in the detailed engineering design of urban wastewater and sanitation systems. Fluency in written and spoken English is required. Must have a demonstrated ability to work within a multi-disciplinary consulting team with counterparts and other project stakeholders. Experience working on projects financed by multilateral development agencies is preferred.
Electrical Engineer	12	Degree in electrical engineering or a related discipline specializing in water supply.	10 years' experience in the detailed engineering design of projects, with preferably 5 years' experience in urban water supply systems and wastewater systems. Fluency in written and spoken English is required. Must have a demonstrated ability to work within a multi-disciplinary consulting team with counterparts and others project stakeholders. Experience working on projects financed by multilateral development agencies is preferred.

Position & Task	Person-Months	Minimum Qualifications	Minimum Work Experience
Mechanical Engineer	12	Degree in mechanical engineering or a related discipline specializing in water supply.	10 years' experience in the detailed engineering design of projects, with preferably 5 years experience in urban water supply systems and sanitation projects. Fluency in written and spoken English is required. Must have a demonstrated ability to work within a multi-disciplinary consulting team with counterparts and others project stakeholders. Experience working on projects financed by multilateral development agencies is preferred.
Structural Engineer	12	Degree in civil or structural engineering or a related discipline.	10 years' experience in the detailed engineering design of civil engineering structure, with preferably 5 years' experience in urban water supply and sanitation projects. Fluency in written and spoken English is required. Must have a demonstrated ability to work within a multi-disciplinary consulting team with counterparts and others project stakeholders. Experience working on projects financed by multilateral development agencies is preferred.
Geotechnical Engineer	6	Master's degree in civil or geotechnical engineering or related subject	8 years' experience of geotechnical engineering & soil mechanics for urban water supply and sanitation projects. Fluency in written and spoken English is required. Must have a demonstrated ability to work within a multi-disciplinary consulting team with counterparts and others project stakeholders. Experience working on projects financed by multilateral development agencies is preferred.
Procurement Specialist <i>(to be recruited as individual consultant by the EA)</i>	n/a	n/a	n/a
Environment Specialist	18	Degree in environmental science, engineering, planning or a related discipline	8 years of experience in environmental management, safeguards. or environmental impact assessments. Experience on urban water supply and sanitation or related assignments financed by multilateral development agencies (preferably ADB) would be beneficial, as is experience on climate change related studies. Fluency in written and spoken English is required and must be on MOE's approved list of consultants for environmental assessments.
Resettlement Specialist	12	Degree in social sciences, development sociology or a related discipline.	5 years' experience of working with social safeguards in development projects. Experience on urban water supply and sanitation or related assignments financed by multilateral development agencies (preferably ADB). would be beneficial. Fluency in written and spoken English is required.

Position & Task	Person-Months	Minimum Qualifications	Minimum Work Experience
Social Development & Gender Specialist	12	Degree in social sciences, development sociology or a related discipline.	5 years' experience of working with social safeguards in development projects. Experience on urban water supply and sanitation projects or related assignments financed by multilateral development agencies (preferably ADB). would be beneficial. Fluency in written and spoken English is required.
Financial Management / Accounting Specialist <i>(to be recruited as individual consultant by the EA)</i>	n/a	n/a	n/a
Human Resource / Training Coordinator	12	Master's degree in human resource management, governance or another related institutional development discipline or an equivalent professional qualification.	5 years or more of working experience in consultancy assignments and/or at senior level. Experience on urban water supply and sanitation or related assignments financed by multilateral development agencies related to human resources and training assignments would be beneficial. Fluency in written and spoken English is required.
Wastewater Treatment Specialist	6	Master's degree in engineering or the sciences relating to process design and hydraulics.	5 years' experience in process design of wastewater treatment plants. Previous experience working on urban wastewater projects financed by multilateral development agencies is preferred. Fluency in written and spoken English is required.
PPMS Specialist	12	Master's degree in project management or a related discipline.	5 years of experience in project management and planning of projects financed by multilateral development funding agencies. Previous experience working on water supply and sanitation projects in Southeast Asia financed by multilateral development agencies is preferred. Fluency in written and spoken English is required.
Utility Training Specialist	9	Degree in civil/municipal engineering or a related discipline.	8 years' experience in the operation and maintenance of urban water supply and sanitation systems, including water and wastewater treatment plants, with at least 5 years in utility management. Previous experience of water supply and sanitation projects financed by multilateral development agencies is preferred. Fluency in written and spoken English is required.
Site Engineers (5 positions)	138	A degree in civil, structural or municipal engineering or a related discipline.	5 years of experience in construction supervision of urban water supply or related infrastructure development projects financed by a multilateral development agencies would be beneficial Fluency in written and spoken English is required. Five positions are required as follows: Siem Reap wastewater – 18 months Sihanoukville wastewater – 30 months Battambang water supply – 30 months Battambang wastewater – 30 months Kampong Cham water supply and sanitation – 30 months

Position & Task	Person-Months	Minimum Qualifications	Minimum Work Experience
AutoCAD Operators (4 positions)	12	Degree or diploma in computer aided technical design.	5 years of experience in the preparation of computer aided detailed engineering designs using AutoCad software for urban infrastructure. Familiarity with the design of urban water supply facilities would be beneficial, as would experience working on projects financed by a multilateral development agencies. Fluency in written and spoken English is required. Three positions for civil works design and 1 position for electro-mechanical works.
TOTAL	433	Person Months of National Consultants	
GRAND TOTAL	525	Person Months of International and National Consultants	

F. Detailed Terms of Reference for Key Experts

33. Team Leader and Water Supply Specialist (International, 36 person-months)

- (i) Responsible for overall project implementation and delivery of all aspects including but not limited to procurement, safeguards, detailed engineering design, financial and social development, and construction supervision
- (ii) Responsible for signing off on the final project and infrastructure designs for all outputs.
- (iii) Develop strong working relationship with executing agencies, implementing agencies, and PIUs, and ensure smooth coordination among them.
- (iv) Confirm commitments to project implementation from all stakeholders.
- (v) Develop detailed time bound implementation schedules.
- (vi) Management of a project performance management system that includes links to the gender action plan, and loan covenants.
- (vii) Provide initial training in project management and oversight for PMU, PIUs, and NGO members.
- (viii) Help ensure compliance with the relevant policies and guidelines of the Government and ADB.
- (ix) Check as necessary detailed designs, cost estimates, bidding documents, and other contract documentation for all outputs.
- (x) Provide regular oversight to PMU and PIU staff and local consultants in the management of civil works and goods contracts and in the supervision of construction and subsequent commissioning of works for all outputs.
- (xi) Provide oversight for overall subproject financial management, accounting, disbursements and audit requirements.
- (xii) Coordinate cross-cutting in the project amongst team members.
- (xiii) Assist the PMU in evaluation of bid proposals and preparing bid evaluation report, contract negotiations with the successful bidders and preparing contract documents for all outputs.

- (xiv) Assist in arranging for smooth handover of the project facilities to the agencies responsible for operation and maintenance including advice and assistance on the preparation of all documentation necessary (i.e. as-built drawings) to close out contracts.
- (xv) Ensure proper and timely submission of regular progress reports to executing agencies and ADB, particularly the progress against target indicators. Incorporate information from other consulting packages for respective outputs.
- (xvi) Initiate actions in the event of any adverse, oblique and/or other variances against the original plan.
- (xvii) Provide overall guidance to the implementation of training.
- (xviii) Assist in ensuring all resettlement and environmental impact mitigation measures are fully implemented, ensure associated reporting is completed, and minimize adverse environmental impacts during construction.
- (xix) Provide site management guidance to PIUs and local consultants in relation to the construction for the all outputs.
- (xx) Assist in project planning, scheduling, and reporting of subproject activities.
- (xxi) Assist in ensuring the quality of all of the infrastructure components.
- (xxii) Provide support to the training of executing agency, implementing agency, and PMU and PIU staff on ADB procurement guidelines.
- (xxiii) Assist in the detailed monitoring and evaluation surveys for the project.
- (xxiv) Provide overall support for selection of contractors and suppliers, contract management, and quality control and inspection.
- (xxv) Ensure annual submission of project performance monitoring reports against the PPMS developed.
- (xxvi) Ensure implementation of gender and social development measures, including the implementation and monitoring of the GAP and community participation plan.
- (xxvii) Develop the PPMS based on projected targets, performance indicators, assumptions and risks specified in the Design and Monitoring Framework (DMF) and undertake the following tasks:
 - a) Advise and train Project staff in Project requirements for monitoring and evaluation including performance against overall project milestone, safeguards monitoring and financial commitments;
 - b) Assist and train project staff prepare detailed data monitoring formats, survey designs and schedule of monitoring and evaluation activities;
 - c) In association with social safeguards and environmental specialists advise and train Project Staff in the monitoring of social and environment safeguard indicators;
 - d) (Provide guidance for baseline data and information gathering, including the conduct of surveys and analysis of survey results; and
 - e) Assist in harmonizing the Government requirements for monitoring and evaluation with those of ADB;

34. **Water Supply Engineer** (International, 12 person-months)

- (i) Assist the PMU during the bidding of the water supply subprojects.
- (ii) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information for water supply projects.
- (iii) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for Battambang and Kampong Cham water supply projects.
- (iv) Resolve any technical issues with the PMU and design-build contractors.
- (v) Coordinate closely with the Electro-Mechanical Engineers, Geotechnical Engineers, and Structural Engineers to ensure technical designs are compatible.
- (vi) Coordinate closely with the Environmental Specialists to ensure compatibility of the designs with the EMP.
- (vii) Prepare specifications, cost estimates, and bidding documents for other water supply works and goods packages, as required.
- (viii) Support the team in completing the procurement of contracts and finalization of water supply contract packages.
- (ix) Support the contract start-up activities and review final designs and specifications submitted by the contractors after award of the contracts.
- (x) Assist the Training Specialist in developing water supply related training programs based on actual needs of the implementing agencies
- (xi) Contribute to the final design report and other reports as required by the Team Leader.
- (xii) Assist in any other related works as deemed necessary by the Team Leader.

35. **Wastewater and Sanitation Engineer** (International, 12 person-months)

- (i) Review the viability of the proposed wastewater and sanitation subprojects prepared/identified by the PPTA Consultants and revised. Identify any potential changes based on the current situation at each town.
- (ii) Discuss with the Team Leader and the PMU and reconfirm the priority areas and finalize the infrastructure investment subproject scope.
- (iii) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information for wastewater and sanitation subprojects.
- (iv) Assess all viable technical options and identify the least-cost analysis and review and define design criteria and standards.
- (v) Finalize the preliminary design and prepare design-build bidding documents for the wastewater treatment and septage treatment package covering Battambang, Sihanoukville, and Kampong Cham.
- (vi) Prepare the detailed engineering design, specifications, and bidding documents (admeasurement contract) for the sewerage projects in Battambang and Sihanoukville.
- (vii) Coordinate closely with the Electro-Mechanical Engineers, Geotechnical Engineers, and Structural Engineers to ensure technical designs are compatible.

- (viii) Coordinate closely with the Environmental Specialists to ensure compatibility of the designs with the EMP.
- (ix) Assist the PMU with bidding and procurement of all wastewater and sanitation packages (civil works and goods).
- (x) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for Battambang, Sihanoukville, and Kampong Cham wastewater package.
- (xi) Resolve any technical issues with the PMU and design-build contractors.
- (xii) Support the team in completing the procurement of contracts and finalization of wastewater and sanitation contract packages.
- (xiii) Support the contract start-up activities and review final designs and specifications submitted by the contractors (design build contract) after award of the contract.
- (xiv) Assist the Training Specialist in developing wastewater and sanitation related training programs based on actual needs of the implementing agencies
- (xv) Contribute to the final design report and other reports as required by the Team Leader.
- (xvi) Assist in any other related works as deemed necessary by the Team Leader.

36. **Electro-Mechanical Engineer** (International, 6 person-months)

- (i) Review the viability of the proposed subprojects already prepared/identified by the PPTA Consultants.
- (ii) Discuss with the Team Leader and the PMU and confirm the priority areas and finalize the infrastructure investment subprojects.
- (iii) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information required for detailed engineering design.
- (iv) Assess all viable technical options and identify the least-cost analysis and review and define design criteria and standards.
- (v) Coordinate closely with the Water Supply and Sanitation Engineers and Structural Engineers to ensure technical designs are compatible.
- (vi) Coordinate closely with the Environmental Specialists to ensure compatibility of the design with the EMP.
- (vii) Prepare detailed engineering designs, cost estimates, and specifications, and provide inputs to the bidding documents for all required selected subprojects.
- (viii) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for all subprojects.
- (ix) Resolve any technical issues with the PMU and design-build contractors.
- (xvii) Contribute to the final design report and other reports as required by the Team Leader.
- (x) Assist in any other related works as deemed necessary by the Team Leader.

37. **Environment Specialist** (International, 5 person-months)

- (i) Ensure ADB Environment safeguard category remains B or below.

- (ii) Assist the PMU in ensuring the incorporation of relevant mitigation measures in the detailed designs, coordinated public consultations and disclosure and information dissemination with the social and resettlement team, and that the RGC's environmental assessment requirements will not cause delay in the commencement of the construction phase.
- (iii) Update and finalize and the IEEs and EMPs, as necessary, based on the detailed engineering designs, and ensure consistency, where applicable, with other safeguard plans.
- (iv) Assist the PMU in preparing for procurement by: (i) ensuring that the SPS-compliant EMP is part of the tender documents and civil works contracts; and (ii) establishing and incorporating environmental criteria, scoring and weight in the evaluation of bids in coordination and agreement with the procurement committee.
- (v) Assist the PMU in ensuring that contractors prepare their respective contractor's EMP (C-EMP) based on the SPS-compliant EMP and actual site conditions and in evaluating the contractor's EMPs (C-EMPs).
- (vi) Assist the PMU in preparing for the activation of the grievance redress mechanism, undertaking pre-construction environmental quality monitoring as recommended in the EMP, and reviewing and evaluating Contractor's EMPs to ensure they are fully responsive to the SPS-compliant EMPs.
- (vii) Design a tool or system to facilitate effective consultations, monitoring and inspection and reporting by the PMU.
- (viii) Coordinate with the MOE and TSA on regulatory compliance issues—for water quality in the the Tonle Sap, noise and dust from construction sites, sanitation in workers campsite, etc.
- (ix) Provide training lectures and/or seminars on the EMP and its implementation.
- (x) During construction and operation, guide the PMU in supervising, monitoring, and reporting EMP implementation.
- (xi) Assess the operation and observance of the grievance redress mechanism, and recommend improvements.
- (xii) Review the results of the environmental effects monitoring. Recommend investigations and recommend corrective actions, as necessary
- (xiii) Assist the PMU and PIUs in follow up consultations.
- (xiv) Conduct visits to work sites to provide guidance to, and advise the PIUs and operators on environmental management concerns arising during project construction and operation, respectively, and recommend corrective measures.
- (xv) Prepare the necessary status reports for compliance with the conditions set out in approved Royal Government of Cambodia's IEE and EIA Reports.
- (xvi) Assist in the preparation of monthly and quarterly environmental monitoring reports (EMRs) and finalize the monthly EMRs for input to the PMU's monthly progress report and quarterly EMR for submission to the ADB.
- (xvii) Recommend measures to ensure effective EARF and EMP compliance and/or implementation, as necessary.
- (xviii) Ensure that capacity development in environmental management is carried out through "hands on" training during the implementation of the EARF and EMPs, through lectures, seminars and other activities on the EARF and EMP implementation.
- (xix) Assist in any other related works as deemed necessary by the Team Leader.

38. Social Safeguards and Resettlement Specialist (International, 5 person-months)

- (i) Ensure ADB social safeguards category remains B or below.
- (ii) Work closely with PMUs and local authorities at all levels on all social development and social safeguards (resettlement and indigenous peoples) matters, in updating and implementing the resettlement due diligence reports, including the gender action plan and related activities for all outputs.
- (iii) Ensure that the EA confirms with the loan covenants on land acquisition and resettlement activities.
- (iv) Assist in the public consultation activities and include the feedback into the project design as necessary.
- (v) Ensure that grievances are addressed promptly and properly and that grievance redress mechanism is functioning well.
- (vi) Provide necessary training on grievance if needed.
- (vii) Establish and implement procedures for ongoing internal monitoring for land acquisition and resettlement activities in accordance with the updated RF, RPs, and DDRs and include it in the internal monitoring report for the subproject prior to contract awards.
- (viii) Assist in the preparation of monthly and quarterly monitoring reports and finalize the monthly reports for input to the PMU's monthly progress report and quarterly monitoring reports for submission to the ADB.
- (ix) Design and deliver capacity development activities for all relevant agencies, as needed, in the areas of ADB resettlement and indigenous peoples policy; participation and communication; gender and development; and livelihood restoration.
- (x) Assist in any other related works as deemed necessary by the Team Leader.

39. Finance Specialist (International, 2 person-months)

- (i) Review ongoing activities for the different implementing agencies.
- (ii) Identify issues and problems and propose tariff structures in consideration of the affordable limits of target beneficiaries, O&M cost, economic efficiency, and sustainability.
- (iii) Review the financial performance of service delivery and capacity of implementing agencies regarding cost recovery, borrowing capacity, collection of fees and taxes, accounts receivable, and subsidies, as appropriate.
- (iv) Develop a tariff setting and subsidy methodologies designed to achieve financial sustainability.
- (v) Monitor project financial performance of the investments and the sector, considering the proposed financial structure and tariff setting methodology.
- (vi) Draft recommendations regarding an effective and appropriate regulatory mechanism to ensure requisite service quality and tariffs.
- (vii) Assist in any other related works as deemed necessary by the Team Leader.

40. Institutional/Training Specialist (International, 4 person-months)

- (i) Develop a detailed capacity development and/or training plan for the project, catering to the needs of the PMU and PIUs.
 - (ii) Prepare, deliver, evaluate and follow-up on training courses.
 - (iii) Ensure that training records are sex-disaggregated for each session.
 - (iv) Ensure that at least 40% of training opportunities are allocated to women in project implementation structures.
 - (v) Design and contribute to project workshops, training events, and reports as required.
 - (vi) Prepare a monitoring table for capacity development and training activities.
 - (vii) Prepare a capacity development and training evaluation report format for the Team Leader to complete at project end.
 - (viii) Assist in any other related works as deemed necessary by the Team Leader.
41. **Wastewater Treatment Specialist** (International, 4 person-months)
- (i) Analyze the influent characteristics at all required locations where new treatment plants are to be provided and/or existing plants modified.
 - (ii) Coordinate with the Wastewater and Sanitation engineers and Environmental Specialist and prepare appropriate process designs and specify and design the treatment process at each required, including providing details for cost estimates, specifications, and bidding documents as needed.
 - (iii) Coordinate with the Environmental Specialists to ensure compatibility of the design with the EMP.
 - (iv) Contribute to all necessary reporting under the project, as determined by the Team Leader.
 - (v) Assist in any other related works as deemed necessary by the Team Leader.
42. **Project Performance Monitoring System (PPMS) Specialist** (International, 3 person-months)
- (i) Review the project planning and prepare a performance monitoring system for the project.
 - (ii) Develop a training program and provide training on the PPMS system to team members and PMU and PIU staff.
 - (iii) Contribute to all necessary reporting under the project, as determined by the Team Leader.
 - (iv) Assist in any other related works as deemed necessary by the Team Leader.
43. **Utility Training Specialist** (International, 3 person-months)
- (i) Review the training plans and capacities of the implementing agencies.
 - (ii) Develop and role out a training program for the staff of the implementing agencies.
 - (iii) Contribute to all necessary reporting under the project, as determined by the Team Leader.
 - (iv) Assist in any other related works as deemed necessary by the Team Leader.

44. **Deputy Team Leader/Water Supply Engineer** (National, 44 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Be responsible for overall project implementation and delivery of all aspects including but not limited to procurement, safeguards, detailed engineering design, financial and social development for all outputs.
- (ii) Develop strong working relationship with executing agencies, implementing agencies, civil society organizations and PIUs, and ensure smooth coordination among them.
- (iii) Confirm commitments to project implementation from all stakeholders.
- (iv) Work with the Team Leader to develop detailed time bound implementation schedules.
- (v) Provide initial training in project management and oversight for PMUs and PIUs.
- (vi) Help ensure compliance with the relevant policies and guidelines of the Royal Government of Cambodia and ADB.
- (vii) Check as necessary detailed designs, cost estimates, bidding documents, and other contract documentation.
- (viii) Provide regular oversight to PMU and PIU staff and local consultants in the management of civil works and goods contracts and in the supervision of construction and subsequent commissioning of works.
- (ix) Provide oversight for overall subproject financial management, accounting, disbursements and audit requirements.
- (x) Assist in arranging for smooth handover of the project facilities to the agencies responsible for operation and maintenance including advice and assistance on the preparation of all documentation necessary (i.e. as-built drawings) to close out contracts.
- (xi) Ensure proper and timely submission of regular progress reports to executing agencies and ADB, particularly the progress against target indicators.
- (xii) Initiate actions in the event of any adverse, oblique and/or other variances against the original plan.
- (xiii) Provide overall guidance to the implementation of training and community awareness programs.
- (xiv) Assist in ensuring all resettlement and environmental impact mitigation measures are fully implemented, ensure associated reporting is completed, and minimize adverse environmental impacts during construction.
- (xv) Provide site management guidance to PIUs and local consultants in relation to the construction.
- (xvi) Assist in project planning, scheduling, and reporting of subproject activities.
- (xvii) Assist in ensuring the quality of all of the infrastructure components.
- (xviii) Update the draft procurement plan from time to time (at least annually).
- (xix) Train executing agency, implementing agency, and PMU and PIU staff on ADB procurement guidelines.
- (xx) Assist in the detailed monitoring and evaluation surveys.

- (xxi) Provide overall support for selection of contractors and suppliers, contract management, and quality control and inspection.
- (xxii) Ensure implementation of gender and social development measures, covering GAP and community participation plan.

45. **Water Supply Engineer** (national, 40 person-months). Assist the International Water Supply Engineers to:

- (i) Assist the PMU during the bidding of the water supply subprojects.
- (ii) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information for water supply projects.
- (iii) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for Battambang and Kampong Cham water supply projects.
- (iv) Resolve any technical issues with the PMU and design-build contractors.
- (v) Coordinate closely with the Electro-Mechanical Engineers, Geotechnical Engineers, and Structural Engineers to ensure technical designs are compatible.
- (vi) Coordinate closely with the Environmental Specialists to ensure compatibility of the designs with the EMP.
- (vii) Prepare specifications, cost estimates, and bidding documents for other water supply works and goods packages, as required.
- (viii) Support the team in completing the procurement of contracts and finalization of water supply contract packages.
- (ix) Support the contract start-up activities and review final designs and specifications submitted by the contractors after award of the contracts.
- (x) Assist the Training Specialist in developing water supply related training programs based on actual needs of the implementing agencies
- (xi) Contribute to the final design report and other reports as required by the Team Leader.
- (xii) Assist in any other related works as deemed necessary by the Team Leader.

46. **Sanitation Engineer** (national, 40 person-months). Assist the International Wastewater and Sanitation Engineer to:

- (i) Review the viability of the proposed wastewater and sanitation subprojects prepared/identified by the PPTA Consultants and revised. Identify any potential changes based on the current situation at each town.
- (ii) Discuss with the Team Leader and the PMU and reconfirm the priority areas and finalize the infrastructure investment subproject scope.
- (iii) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information for wastewater and sanitation subprojects.
- (iv) Assess all viable technical options and identify the least-cost analysis and review and define design criteria and standards.

- (v) Finalize the preliminary design and prepare design-build bidding documents for the wastewater treatment and septage treatment package covering Battambang, Sihanoukville, and Kampong Cham.
- (vi) Prepare the detailed engineering design, specifications, and bidding documents (admeasurement contract) for the sewerage projects in Battambang and Sihanoukville.
- (vii) Coordinate closely with the Electro-Mechanical Engineers, Geotechnical Engineers, and Structural Engineers to ensure technical designs are compatible.
- (viii) Coordinate closely with the Environmental Specialists to ensure compatibility of the designs with the EMP.
- (ix) Assist the PMU with bidding and procurement of all wastewater and sanitation packages (civil works and goods).
- (x) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for Battambang, Sihanoukville, and Kampong Cham wastewater package.
- (xi) Resolve any technical issues with the PMU and design-build contractors.
- (xii) Support the team in completing the procurement of contracts and finalization of wastewater and sanitation contract packages.
- (xiii) Support the contract start-up activities and review final designs and specifications submitted by the contractors (design build contract) after award of the contract.
- (xiv) Assist the Training Specialist in developing wastewater and sanitation related training programs based on actual needs of the implementing agencies
- (xv) Contribute to the final design report and other reports as required by the Team Leader.
- (xvi) Assist in any other related works as deemed necessary by the Team Leader.

47. **Electrical Engineer** (national, 12 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Review the viability of the proposed subprojects already prepared/identified by the PPTA Consultants.
- (ii) Liaise with the International and National Mechanical Engineer regarding design issues and criteria.
- (iii) Discuss with the Team Leader and the PMU and confirm the priority areas and finalize the infrastructure investment subprojects.
- (iv) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information required for detailed engineering design.
- (v) Assess all viable technical options and identify the least-cost analysis and review and define design criteria and standards.
- (vi) Liaise with the AutoCAD operators for the production of electrical drawings.
- (vii) Coordinate closely with the Water Supply and sanitation Engineers and Structural Engineers to ensure technical designs are compatible.

- (viii) Coordinate closely with the Environmental Specialists to ensure compatibility of the design with the EMP.
- (ix) Assist the International Electro-Mechanical Engineer to prepare detailed technical specifications, performance specifications, detailed cost estimates, and quantities relating to the electrical components.
- (x) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for all subprojects.
- (xi) Resolve any technical issues with the PMU and design-build contractors.
- (xii) Contribute to the final design report and other reports as required by the Team Leader.
- (xiii) Assist in any other related works as deemed necessary by the Team Leader.

48. **Mechanical Engineer** (national, 12 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Review the viability of the proposed subprojects already prepared/identified by the PPTA Consultants.
- (ii) Liaise with the International and National Electrical Engineer regarding design issues and criteria.
- (iii) Discuss with the Team Leader and the PMU and confirm the priority areas and finalize the infrastructure investment subprojects.
- (iv) Identify any missing data or information and prepare scopes of work, specifications, and bidding documents for studies, investigations, and surveys to complete the necessary information required for detailed engineering design.
- (v) Assess all viable technical options and identify the least-cost analysis and review and define design criteria and standards.
- (vi) Liaise with the AutoCAD operators for the production of mechanical drawings.
- (vii) Coordinate closely with the Water Supply and Sanitation Engineers and Structural Engineers to ensure technical designs are compatible.
- (viii) Coordinate closely with the Environmental Specialists to ensure compatibility of the design with the EMP.
- (ix) Assist the International Electro-Mechanical Engineer to prepare detailed technical specifications, performance specifications, detailed cost estimates, and quantities relating to the electrical components.
- (x) Assess the technical viability of the designs, specifications, and proposals submitted by the design-build contractors for all subprojects.
- (xi) Resolve any technical issues with the PMU and design-build contractors.
- (xiv) Contribute to the final design report and other reports as required by the Team Leader.
- (xii) Assist in any other related works as deemed necessary by the Team Leader.

49. **Structural Engineer** (national, 12 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Assist the International Structural Engineer to prepare the structural designs for all required civil works structures to national structural design standards.
- (ii) Liaise with the International and National Geotechnical Engineers regarding design issues and criteria relevant to the prevailing soil conditions.
- (iii) Liaise with the AutoCAD operators for the production of structural drawings.
- (iv) Assist the International Structural Engineer to prepare detailed technical specifications, performance specifications, detailed cost estimates, and quantities relating to the structural components.
- (v) Contribute to the final design report.
- (vi) Contribute to all necessary reporting under the Project, as determined by the Team Leader.
- (vii) Assist in any other related works as deemed necessary by the Team Leader.

50. **Geotechnical Engineer** (National, 6 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Assist the International Geotechnical Engineer to prepare scope of work and terms of reference for geotechnical surveys and investigations required for all subprojects.
- (ii) Provide day-to-day supervision of the geotechnical surveys and investigations and report to the International Geotechnical Engineer.
- (iii) Assist with the preparation of preliminary geotechnical designs, and assist with cost estimates for the detailed engineering designs.
- (iv) Assist the International Geotechnical Engineer to prepare detailed geotechnical designs for all subproject works, technical specifications, performance specifications, detailed cost estimates and quantities.
- (v) Undertake regular inspections during construction to ensure that the geotechnical works comply with the design intent and report back any issues to the Team Leader and International Geotechnical Engineer.
- (vi) Contribute to the final design report.
- (vii) Contribute to all necessary reporting under the Project, as determined by the Team Leader.
- (viii) Assist in any other related works as deemed necessary by the Team Leader.

51. **Procurement Specialist** (National). To be recruited as an individual consultant by the EA.

52. **Environment Specialist** (National, 18 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Ensure ADB Environment safeguard category remains B or below.
- (ii) Assist the PMU in ensuring the incorporation of relevant mitigation measures in the detailed designs, coordinated public consultations and disclosure and information dissemination with the social and resettlement team, and that the RGC's environmental assessment requirements will not cause delay in the commencement of the construction phase.

- (iii) Update and finalize and the IEEs and EMPs, as necessary, based on the detailed engineering designs, and ensure consistency, where applicable, with other safeguard plans.
- (iv) Assist the PMU in preparing for procurement by: (i) ensuring that the SPS-compliant EMP is part of the tender documents and civil works contracts; and (ii) establishing and incorporating environmental criteria, scoring and weight in the evaluation of bids in coordination and agreement with the procurement committee.
- (v) Assist the PMU in ensuring that contractors prepare their respective contractor's EMP (C-EMP) based on the SPS-compliant EMP and actual site conditions and in evaluating the contractor's EMPs (C-EMPs).
- (vi) Assist the PMU in preparing for the activation of the grievance redress mechanism, undertaking pre-construction environmental quality monitoring as recommended in the EMP, and reviewing and evaluating Contractor's EMPs to ensure they are fully responsive to the SPS-compliant EMPs.
- (vii) Design a tool or system to facilitate effective consultations, monitoring and inspection and reporting by the PMU.
- (viii) Coordinate with the MOE and TSA on regulatory compliance issues—for water quality in the the Tonle Sap, noise and dust from construction sites, sanitation in workers campsite, etc.
- (ix) Provide training lectures and/or seminars on the EMP and its implementation.
- (x) During construction and operation, guide the PMU in supervising, monitoring, and reporting EMP implementation.
- (xi) Assess the operation and observance of the grievance redress mechanism, and recommend improvements.
- (xii) Review the results of the environmental effects monitoring. Recommend investigations and recommend corrective actions, as necessary
- (xiii) Assist the PMU and PIUs in follow up consultations.
- (xiv) Conduct visits to work sites to provide guidance to, and advise the PIUs and operators on environmental management concerns arising during project construction and operation, respectively, and recommend corrective measures.
- (xv) Prepare the necessary status reports for compliance with the conditions set out in approved Royal Government of Cambodia's IEE and EIA Reports.
- (xvi) Assist in the preparation of monthly and quarterly environmental monitoring reports (EMRs) and finalize the monthly EMRs for input to the PMU's monthly progress report and quarterly EMR for submission to the ADB.
- (xvii) Recommend measures to ensure effective EARF and EMP compliance and/or implementation, as necessary.
- (xviii) Ensure that capacity development in environmental management is carried out through "hands on" training during the implementation of the EARF and EMPs, through lectures, seminars and other activities on the EARF and EMP implementation.
- (xix) Assst in any other related works as deemed necessary by the Team Leader.

53. **Resettlement Specialist** (National, 12 person-months). Assist the international social safeguards and resettlement specialist with:

- (i) Assist the PMU and to review and update the resettlement DDRs as per the detailed design.

- (ii) Ensure that ADB's resettlement safeguard categorization remains B or less.
- (iii) Assist PMU in implementing the updated DDRs with a focus on community consultation, and grievance procedures.
- (iv) Assist the PMU to establish and implement procedures for ongoing internal resettlement monitoring.
- (v) Work closely with the local authorities and assist PMU in obtaining local and national clearances and approvals.
- (vi) Establish and implement liaison mechanisms to ensure proper technical and logistical support between the project to the PMU, local administrative authorities, resettlement committees and concerned government departments.
- (vii) Ensure compliance with relevant Royal Government of Cambodia laws and regulations and the ADB SPS (2009) for all project components.

54. **Social Development & Gender Specialist** (National, 12 person-months). Assist the international social safeguards and resettlement specialist with:

- (i) Prepare a detailed action and monitoring plan and design an implementation framework for the implementation of the project's social inclusion, poverty and gender measures and targets in the DMF, GAP, and SPRSS with clear timelines, costing/budgets and responsibilities and prepare a standard template for monitoring social inclusion and poverty reduction measures.
- (ii) Coordinate the implementation of the project's social inclusion, poverty and gender measures as reflected in the project's GAP, SPRSS, Stakeholder Communication Strategy and Participation Plan, with relevant stakeholders including the civil contractor, PWWs, DPWTs, PIUs, NGOs, civil society, local communities to ensure that these measures and targets are implemented in an inclusive and effective manner.
- (iii) Provide social and gender awareness training (at least 50% male participation) to Ministries, Provincial Governments, PMU, and PIUs and relevant stakeholders on social and gender measures and its implementation, monitoring, review, reporting and evaluation process.
- (iv) Provide support to Ministries, Provincial Governments, PMU, and PIUs to develop greater gender sensitive and responsible policies.
- (v) Support female PMU staff training (at least 40% female) in appropriate levels of knowledge on planning, design, financial management, procurement, and operation and maintenance of project facilities.
- (vi) Engage in advocacy with NGOs/CSOs partners in IEC campaign and delivery of training on how to apply for new connection subsidies targeting especially poor households with 50% female participation.
- (vii) Support design of IEC campaign materials to ensure they are simple, gender sensitive, and available in local languages.
- (viii) Ensure the collection of relevant sex disaggregated statistics for all project activities in the development of the PPMS, and guide implementing agencies on how to collect and use sex disaggregated data for input into project PPMS quarterly, mid-term, and final reviews, and bi-annual GAP Progress Performance reports as per ADB template.

- (ix) Continue to track and record, review and update social and gender progress and results from the project in a systematic and easily acceptable form, linked to overall project results.
- (x) Assess and address any inadequacy in social inclusion and gender provisions, and identify remedial actions to review or strengthen social and gender measures if required.
- (xi) Ensure that all review missions include consideration of social and gender progress, involve consultation with men and women beneficiaries and include social and gender reporting in mission reports by providing technical support to mission teams.
- (xii) Assist the international social safeguards and resettlement resettlement specialist and provide necessary support and capacity building to MIH, MPWT, and the PWWs and DPWTs staff for DDR implementation, including orientation and training on the activities and implementation mechanisms to PMU and PIUs.
- (xiii) Assist PIUs with consultations and finalization of DDRs based on the detailed design to reflect any change in impacts, mitigation measures, costs and monitoring plans along with including updated budget and implementation schedules, as required. Ensure that ADB's indigenous peoples safeguard categorization remains C.
- (xiv) Assist PMU in implementing the updated DDRs with a focus on community consultation, and grievance procedures.
- (xv) Assist the PMU in conducting public information campaigns and community participation.
- (xvi) Assist in updating the public information booklets as necessary.
- (xvii) Ensure compliance with relevant Royal Government of Cambodia laws and regulations and the ADB SPS (2009) for all project components.

55. **Financial Management/Accounting Specialist** (National). To be recruited as an individual consultant by the EA.

56. **Human Resource/Training Coordinator** (National, 12 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Carry out initial training needs assessment and participant identification in PMU and in the project towns to cover public infrastructure planning and implementation, operation and maintenance, financial management and cost recovery, procurement, social and environmental safeguards, monitoring, reporting and evaluation, solid waste management, environmental management and climate resilience.
- (ii) Select a representative set of participants for the training program.
- (iii) Prepare training course designs covering all the aspects mentioned above.
- (iv) Provide advice to PIUs on support management, including general administration, logistics and back-up services for the training courses.
- (v) In collaboration with PIUs, undertake primary responsibility for administering the training functions, running the sessions and ensuring that all management support requirements are clearly communicated well in advance to respective PMUs and the other offices involved.

- (vi) Carry out course evaluations, customized for the different target groups making up the set of participant, and involving a mix of questionnaires and interviews.
- (vii) Identify the sources for potential future trainers with the capacity for undertaking subsequent long term capacity-building and suggest the level of additional training such trainers may require.
- (viii) Make recommendations for the type of operational and training manuals that may be required for implementing long term capacity-building programs, with an outline of the contents and the resources required for drafting such manuals.
- (ix) Based on the findings of the pilot activities, make outline recommendations for the form and content of a long term program and identify the options for enhanced sustainability and institutionalization of the proposed program.
- (x) Engage local university and/or vocational training institute and/or any other local education institution for long term engagement on skill and capacity building.

57. **Wastewater Treatment Specialist** (National, 6 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Analyze the influent characteristics at all required locations where new treatment plants are to be provided and/or existing plants modified.
- (ii) Coordinate with the Wastewater and Sanitation engineers and Environmental Specialist and prepare appropriate process designs and specify and design the treatment process at each required, including providing details for cost estimates, specifications, and bidding documents as needed.
- (iii) Coordinate with the Environmental Specialists to ensure compatibility of the design with the EMP.
- (iv) Contribute to all necessary reporting under the project, as determined by the Team Leader.
- (v) Assist in any other related works as deemed necessary by the Team Leader.

58. **PPMS Specialist** (National, 12 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Review the project planning and prepare a performance monitoring system for the project.
- (ii) Develop a training program and provide training on the PPMS system to team members and PMU and PIU staff.
- (iii) Contribute to all necessary reporting under the project, as determined by the Team Leader.
- (iv) Continue to support the operation of the PPMS system and training in the absence of the international specialist.
- (v) Assist in any other related works as deemed necessary by the Team Leader.

59. **Utility Training Specialist** (National, 9 person-months). The national consultant will support the international consultant in carrying out the tasks below:

- (i) Review the training plans and capacities of the implementing agencies.
- (ii) Develop and role out a training program for the staff of the implementing agencies.

- (iii) Contribute to all necessary reporting under the project, as determined by the Team Leader.
- (vi) Continue to support the training activities in the absence of the international specialist.
- (iv) Assist in any other related works as deemed necessary by the Team Leader.

60. **Site Engineers** (National 5 positions, 138 person-months)

- (i) Carry out overall supervision of the works on site and assure quality of construction.
- (ii) Review the Contractor's monthly statements and prepare Payment Certificates.
- (iii) Issue any variation orders regarding the quantities of the works and the period for completion of the works after obtaining the approval of the contracting authority.
- (iv) Supervise and monitor construction of all project components, prepare measurements for works completed and in progress and verify bills for payment to the contractors and suppliers.
- (v) Ensure contractors adhere to the provisions of the land acquisition and resettlement plans and the environmental management plans.
- (vi) Attend third party inspections, as necessary, and provide certification on the quality of the supplies based on such inspections.
- (vii) Monitor and enforce the measures taken to ensure safety of the workers, other project personnel, general public and works.
- (viii) Furnish detailed drawings, with revisions as necessary, to the contractor.
- (ix) Regularly monitor physical and financial progress against the milestones according to the contract to ensure completion on time.
- (x) Assist the Implementing Agency in the resolution of various other contractual issues and overall contract management.
- (xi) Approve "as built" drawings.
- (xii) Prepare the Taking-over Certificate, and Final Acceptance Certificate.

61. **AutoCad Operators** (National 4 positions, 48 person-months)

- (i) Develop and prepare all drawings as requested by the Team Leader and international and national technical specialists.
- (ii) Provide soft and hard copies of as directed by the Team Leader.
- (iii) Ensure correct filing and storage of all hard and soft copy drawings, including systematic and regular back-up of soft copies.

G. Reporting Requirements and Time Schedule for Deliverables

62. The Consultants will prepare the reports as specified in the table below.

Item	Deliverable	Submission Date	Remarks
1.	Inception Report: Draft Final	Within 4 weeks of commencement Within 2 weeks of inception workshop	4 copies + soft copy 6 copies + soft copy
2.	Interim Design Report: Draft Final	Within 5 months of commencement Within 1 month of interim design workshop	4 copies + soft copy 6 copies + soft copy
3.	Final Design Report: Draft Final	Within 12 months of commencement Within 1 month of final design workshop	4 copies + soft copy 6 copies + soft copy
4.	Final Report: Draft Final	2 months prior to project completion By project completion	4 copies + soft copy 6 copies + soft copy
5.	Brief Monthly Reports	Within 5 days of each month end	Format and content to be agreed with the PMU. 4 copies + soft copy
6.	Quarterly Progress Reports (including social, gender, and environmental monitoring reports)	Within 10 days of each quarter end	Format and content to be agreed with the PMU. 4 copies + soft copy
7.	Annual Progress Reports (replaces the quarter 4 progress report)	Within 20 days of each year end	Format and content to be agreed with the PMU. 4 copies + soft copy
8.	Other technical reports and safeguards documents	As agreed during the inception phase to meet the requirements of the project and appropriate government and ADB guidelines and policies	As agreed during the inception phase

63. The Consultants will prepare and conduct technical workshops and training events for the PMU and PIU staff as needed during course of the project, using provisional sums with the approval of the PMU. An initial list of workshops and training events, and their timing, will be identified during the Inception Phase and included in the Inception Report.

64. Taking any action under a civil works contract designating the Consultant as “Engineer”, for which action, pursuant to such civil works contract, the written approval of the Client as “Employer” is required.

H. Client's Input and Counterpart Personnel

65. The Client will the following inputs and counterpart personnel free-of-charge to the consultants' team:

- (i) Office space provided by Ministry of Industry & Handicraft and/or Ministry of Public Works and Transport. For each provincial waterworks and provincial department, the office space will also be provided as needed.
- (ii) Counterpart staff at ministry and provincial levels to assist with project coordination, technical aspects (as needed), and translation/interpretation (as needed).
- (iii) Access to project related documents and reports.
- (iv) Access to project vehicles for official project business.
- (v) Office equipment such as printers, photocopiers, etc.