ADB

Report and Recommendation of the President to the Board of Directors

Project Number: 50102-002
July 2018

Proposed Loan and Grant Kingdom of Cambodia: Second Urban Environmental Management in the Tonle Sap Basin Project

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Asian Development Bank

CURRENCY EQUIVALENTS
(as of 6 July 2018)

Currency unit	–	riel (KR)
KR1.00	=	$0.000247
$1.00	=	KR4,055.28

ABBREVIATIONS

ADB	–	Asian Development Bank
EMP	–	environmental management plan
GDR	–	General Department of Resettlement
km	–	kilometer
MPWT	–	Ministry of Public Works and Transport
m^3	–	cubic meter
O&M	–	operation and maintenance
PAM	–	project administration manual
DPWT	–	Department of Public Works and Transport
PMC	–	project management consultant
PMU	–	project management unit
TSUADF	–	Tonle Sap Urban Areas Development Framework
WWTP	–	wastewater treatment plant

NOTE
In this report, "$" refers to United States dollars.

Vice-President	Stephen Groff, Operations 2
Director General	Ramesh Subramaniam, Southeast Asia Department (SERD)
Director	Vijay Padmanabhan, Urban Development and Water Division, SERD
Team leader	Sameer Kamal, Urban Development Specialist, SERD
Team members	Linda Adams, Senior Social Development Specialist, SERD Jogendra Ghimire, Senior Counsel, Office of the General Counsel Satoshi Ishii, Principal Urban Development Specialist, SERD Katrina Jayme, Senior Environment Officer, Sustainable Development and Climate Change Department (SDCC) Michael John Lacambacal, Operations Assistant, SERD Emma Marsden, Senior Environment Specialist, SDCC Rangina Nazrieva, Safeguards Specialist (Resettlement), SERD Genevieve O'Farrell, Environment Specialist (Safeguards), SERD Melody Ovenden, Social Development Specialist (Resettlement), SERD Ratha Sann, Senior Project Officer (Infrastructure), SERD Stella Tansengco-Schapero, Senior Financing Partnerships Specialist, SERD
Peer reviewer	Sonia Sandhu, Senior Advisor to the Vice-President, Knowledge Management and Sustainable Development

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PROJECT AT A GLANCE

1. Basic Data				**Project Number:** 50102-002
	Project Name	Second Urban Environmental Management in the Tonle Sap Basin Project	**Department /Division**	SERD/SEUW
	Country	CAM	**Executing Agency**	Ministry of Public Works and Transport
	Borrower	Kingdom of Cambodia		

	2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓	**Water and other urban infrastructure and services**	Urban flood protection	7.60
		Urban policy, institutional and capacity development	1.10
		Urban sewerage	64.12
		Urban solid waste management	16.18
		Total	**89.00**

3. Strategic Agenda	**Subcomponents**	**Climate Change Information**	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Medium
Environmentally sustainable growth (ESG)	Disaster risk management	**ADB Financing**	
	Global and regional transboundary environmental concerns	Adaptation ($ million)	3.20
	Urban environmental improvement		

4. Drivers of Change	**Components**	**Gender Equity and Mainstreaming**	
Governance and capacity development (GCD)	Institutional development	Effective gender mainstreaming (EGM)	✓
	Institutional systems and political economy		
	Organizational development		
Knowledge solutions (KNS)	Knowledge sharing activities		

5. Poverty and SDG Targeting		**Location Impact**	
Geographic Targeting	No	Urban	High
Household Targeting	Yes		
SDG Targeting	Yes		
SDG Goals	SDG6, SDG11, SDG15		

6. Risk Categorization: Low

7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** B **Indigenous Peoples:** B

8. Financing

Modality and Sources	Amount ($ million)
ADB	**89.00**
Sovereign Project grant: ADF Disaster Risk Reduction Fund	1.27
Sovereign Project (Concessional Loan): Ordinary capital resources	87.73
Cofinancing	**0.00**
None	0.00
Counterpart	**8.70**
Government	8.70
Total	**97.70**

Source: Asian Development Bank

CAMBODIA

SECOND URBAN ENVIRONMENTAL MANAGEMENT IN THE TONLE SAP BASIN PROJECT

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I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan and (ii) a proposed grant, both to the Kingdom of Cambodia for the Second Urban Environmental Management in the Tonle Sap Basin Project.

2. The project will improve urban environmental infrastructure in Battambang, Serei Saophoan, and Stueng Saen—three provincial cities around the Tonle Sap lake.[1] It will also improve the institutional effectiveness of stakeholders to provide sustainable services and support an improved policy and planning environment for urban drainage, wastewater, and solid waste management.

II. THE PROJECT

A. Rationale

3. **Macroeconomic context.** In 2016, Cambodia had an estimated population of 15.2 million in 25 provinces, 26 cities, and numerous district cities. It is mainly a rural country, but rapid urbanization is expected to bring the urban population to 30% by 2030. Garments, construction, and tourism have driven Cambodia's robust 7% economic growth from 2013-2017.[2] With an increasingly urban economy, urban services contribute to environmentally sustainable and inclusive growth by laying basic infrastructure for businesses and households, creating jobs, safeguarding the surrounding environment, and reducing exposure to flooding and other extreme weather events. They also contribute to the health, welfare, and protection of Cambodia's people. Strong urban–rural linkages mean that developments in Cambodia's growing provincial cities—including Battambang (Battambang Province), Serei Saophoan (Banteay Meanchey Province), and Stueng Saen (Kampong Thom Province)—spread to rural areas where poverty is more acute.

4. **Tonle Sap basin.** The Tonle Sap basin is home to about a third of Cambodia's population, and nearly half of its population depends on the lake's resources, particularly its fish, for livelihood. The basin hosts one of the most productive inland fisheries in the world, contributing about 60% of the country's total production. Between 1998 and 2013, Cambodia's urban population growth rate of about 4% (one of the highest in Southeast Asia), combined with unprecedented rural–urban migration, has led to significant growth in the basin's cities.[3] The three project cities in the largely rural region—together with Kampong Chhnang, Pursat, and Siemreap—are key for economic growth in the basin and their development is linked to the surrounding environment.

5. **Urbanization and environmental impact.** Rapid urbanization has resulted in significant environmental impact, including pollution, on the basin, which is designated a United Nations Educational, Scientific and Cultural Organization (UNESCO) biosphere reserve. While flooding is important for maintaining the basin's ecosystem services, severe flooding can cause damage to life and infrastructure and exacerbate pollution, as receding floodwaters leave accumulated solid

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[1] The project builds on the ongoing Integrated Urban Environmental Management in the Tonle Sap Basin Project, which supports flood protection, wastewater management, and solid waste management in two other provincial cities located around the lake, Kampong Chhnang and Pursat (Asian Development Bank [ADB]. Cambodia: Integrated Urban Environmental Management in the Tonle Sap Basin Project. https://www.adb.org/projects/42285-013/main).

[2] ADB. 2018. *Asian Development Outlook 2018: How Technology Affects Jobs.* Manila.

[3] Government of Cambodia. 2014. *Cambodia Socio-Economic Survey 2014*. Phnom Penh.

and liquid waste. The basin's urban areas are located next to rivers and are sensitive to climate change, with most experiencing flooding during the wet season.[4]

6. **Access to services.** Except in Phnom Penh, the urban population's access to improved water supply during the dry season was 69.7% in 2014, while access to piped water supply was 42.2%. Wastewater and solid waste services are inadequate. While about 80.2% of the urban population had access to improved sanitation in 2014, 69.3% had individual systems (septic tanks) and only 10.7% had access to sewerage and wastewater treatment.[5] More than 75% of households in urban areas, excluding Phnom Penh, do not have access to solid waste services. Rapid urbanization will worsen these challenges. The main reasons for these service delivery gaps are (i) inadequate coverage and delivery of urban environmental infrastructure and services; (ii) inadequate management of public investments; and (iii) poor urban planning that did not consider environmental management, disaster risk, and climate change events.

7. **Policy framework.** Cambodia's National Strategic Development Plan, 2014–2018 identifies key priorities for the urban sector, which include developing a national strategy for cities and master plans for urban infrastructure; ensuring environmental sustainability; installing solid and liquid waste management systems; and developing laws related to land management, urbanization, and construction.[6] However, the actions for sanitation and solid waste are not well defined. Regarding sanitation, the National Policy on Water Supply and Sanitation (2003) calls for greater private sector participation, improved cost recovery, cross subsidies where needed, autonomy of public utilities, and the establishment of a regulatory body.[7]

8. **Institutional arrangements.** The Ministry of Public Works and Transport (MPWT) handles asset creation for urban sanitation, and the provincial Departments of Public Works and Transport (DPWT) handle operation and maintenance (O&M). Solid waste management is the city's responsibility. Because of limited technical capacity in provinces and municipalities, MPWT continues to be involved in the construction of large-scale infrastructure such as sewerage networks, wastewater treatment plants (WWTPs), and controlled landfills.

9. **Role of the private sector.** Private sector investment in these urban services is limited, given the public nature of the assets, limited revenue potential, and limited capacity of the private sector. The exception is solid waste collection, where services are outsourced to the private sector in many cities, including the three project cities.

10. **Project-specific constraints**. The project cities experience the following constraints:

(i) In Battambang, 56% of the population of about 160,000 has access to piped water supply, but only 5% has access to sewerage because of the limited coverage of the existing sewer network (west of the river). Ongoing Asian Development Bank (ADB) projects will expand water supply and address sewage collection and treatment west of the river, but not to the east. Solid waste collection covers less than 25% of the city's population.

[4] The Tonle Sap river, which connects the Tonle Sap lake to the Mekong river, reverses its flow seasonally. During the wet season when the basin is flooded, the lake's surface area is four to six times larger than during the dry season (Mekong River Commission. 2010. *Assessment of Basin-Wide Development Scenarios: Technical Note 10—Impacts on the Tonle Sap Ecosystem*. Phnom Penh).

[5] Footnote 3. Improved sanitation includes flush and/or pour flush to sewers, septic tanks, and pit latrines with slab.

[6] Government of Cambodia. 2014. *National Strategic Development Plan, 2014–2018*. Phnom Penh.

[7] Of the three project cities, only Battambang has an existing wastewater system, for which tariffs are collected through the water supply bill with a 90% collection efficiency. Private companies collect solid waste fees and cover 15%–25% of the cities' populations.

(ii) About 46% of Serei Saophoan's population of about 61,000 and 35% of Stueng Saen's population of about 96,000 have access to piped water supply. They have no sewerage networks or WWTPs. About 20% of the population in Serei Saophan and less than 20% in Stueng Saen have regular solid waste collection, with waste disposed in open dump sites.[8]

11. **Financial management.** The income of DPWTs and city governments is highly dependent on national government transfers. DPWT revenue sources include transfers from the MPWT (more than 90% of revenue) and income from the sale and rental of properties, fines, and penalties. Major recurrent costs are salaries and administrative costs and O&M of facilities (mainly roads). On average, local revenues can only cover 10%–15% of recurrent expenditures. However, surplus funds available for capital expenditures averaged $0.6 million–$2.4 million in 2015–2017 for the three DPWTs. For cities, local revenues covered only 14%–39% on average of recurrent expenditures in 2016, with the remaining expenditure supported through national government allocations, including for solid waste collection and cleaning of public areas.

12. **Support for urban environmental services in the Tonle Sap basin**. ADB's Tonle Sap Basin Strategy highlighted the importance of the basin from an ecological, environmental, and poverty perspective, while the Urban Sector Assessment, Strategy, and Road Map highlighted urban development in Tonle Sap as one of three priority areas.[9] The Tonle Sap Urban Areas Development Framework (TSUADF), 2014–2030 identified and prioritized urban infrastructure needs for the six largest cities and provincial centers in the basin.[10]

13. **Ongoing support in the basin.** The ongoing first phase project focuses on infrastructure investments and services (drainage, flood protection, solid waste management, and a natural wastewater treatment pond) in the two cities of Kampong Chhnang and Pursat. It also focuses on small-scale environmental improvements, coordination, and training.[11] This project will continue the programmatic implementation of the TSUADF by supporting the preparation of risk-sensitive urban master plans; providing urban environmental services that factor disaster and climate risk considerations; and strengthening institutional effectiveness in the next three priority cities of Battambang, Serei Saophoan, and Stueng Saen.[12]

14. **ADB's assistance and lessons learned**. ADB's support for Cambodia's urban development has focused on cities in the Tonle Sap basin, along the Greater Mekong Subregion economic corridors, and in other provincial capitals, with investments in water supply, wastewater management, flood protection, solid waste management, urban roads and markets. This project incorporates lessons learned, namely that (i) lack of financing for household connections and on-site plumbing is detrimental to operational and financial sustainability of wastewater systems; (ii)

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[8] Open dump sites have little or no solid waste planning, management, record-keeping, compaction, or covering.

[9] ADB. 2005. *The Tonle Sap Basin Strategy*. Manila; and ADB. 2012. *Cambodia: Urban Sector Assessment, Strategy, and Road Map*. Manila (update expected in 2018).

[10] Government of Cambodia, MPWT. 2014. *Tonle Sap Urban Areas Development Framework*. Phnom Penh.

[11] ADB. Cambodia: Integrated Urban Environmental Management in the Tonle Sap Basin Project. https://www.adb.org/projects/42285-013/main. ADB approved the first phase in November 2015 and declared it effective in March 2016. Detailed engineering design and bidding documents for the first batch of subprojects is expected to be completed in the second quarter of 2018. Implementation delays are largely because of land acquisition and resettlement challenges and the need to procure four separate consulting services packages, some of which were not large enough to attract good consulting firms. These lessons have informed the design of the proposed second phase of the project.

[12] Other government, ADB, and development partner initiatives cover the urgent investment needs of the remaining city in the TSUADF, Siemreap.

delays in consultant recruitment and detailed designs result in unacceptably long project start-up periods; and (iii) the approach to land acquisition must be comprehensive and practical and aligned with the agreed resettlement framework.[13]

15. **Development coordination.** ADB is a lead partner in Cambodia's urban sector. Project preparation involved coordination with other active development partners in the urban and water sector, including Japan International Cooperation Agency, Agence Française de Développement, and the World Bank. Support from these partners has mostly focused on larger cities such as Phnom Penh and Siemreap, with some engagements in cities such as Kampot, Kep, and Preah Sihanouk. Besides ADB, Japan International Cooperation Agency is the most active partner in the sector, with a strong focus on Phnom Penh and strategic investments.

16. **Strategic context.** The project aligns with Cambodia's National Strategic Development Plan and the MPWT's requirements for improved and effective urban sanitation and solid waste. It is in line with ADB's country partnership strategy, 2014–2018 for Cambodia and the Urban Operational Plan, 2012–2020, which encourages the economic competitiveness of cities, green development, and inclusive growth.[14]

17. **Value added by ADB assistance.** By 2019, ADB will have ongoing urban and water sector projects in more than 15 of Cambodia's 26 provincial cities. ADB's growing program provides sufficient scale to engage with the government on (i) strategic and policy issues, including master planning (ii) developing road maps for financial sustainability of urban services which include differentiated approaches based on affordability and (iii) exploring innovative nature-based solutions, such as use of constructed wetlands for wastewater treatment.[15]

B. Impact and Outcome

18. The project is aligned with the following impact: sustainable, inclusive, equitable, and resilient growth achieved (footnote 6). The project will have the following outcome: urban services improved in participating cities.[16]

C. Outputs

19. **Output 1: Urban environmental infrastructure improved.** The project will finance (i) a new 4,800 cubic meters (m^3)/day capacity WWTP, 87 kilometers (km) of new sewers and a 350,000 m^3 landfill in Battambang; (ii) a new 2,300 m^3/day capacity WWTP, 39 km of new sewers, 17 km drainage network and a 48,000 m^3 landfill in Stueng Saen; and (iii) a new 2,500 m^3/day capacity WWTP, 78 km of new sewers, 8.5 km drainage network and 130,000 m^3 landfill in Serei Saophoan.[17] It will also finance free house latrines for 760 poor households. The design of the WWTP, access roads, and drainage network will factor disaster and climate risk considerations.

[13] ADB used a technical assistance grant for the preparation of feasibility studies, detailed designs, and bidding documents from the Project Readiness Improvement Trust Fund (financed by the Nordic Development Fund and administered by ADB), in conjunction with resources from the Technical Assistance Special Fund (TASF-V), to ensure higher project readiness. It prepared pre-feasibility studies and a medium-term investment program with support from the Cities Development Initiative for Asia.

[14] ADB. 2014. *Country Partnership Strategy: Cambodia, 2014–2018*. Manila; and ADB. 2013. *Urban Operational Plan, 2012–2020*. Manila.

[15] With the exception of Battambang, none of Cambodia's provincial cities have a master plan or a land use plan.

[16] The design and monitoring framework is in Appendix 1.

[17] The service area for the sewerage network includes the core town areas in each city, covering 20%–30% of each city's population. The project will finance free household connections to the sewer system (i.e., the line from the sewer to the boundary of the property). It also allocates financing for on-site plumbing (i.e., plumbing needed within

20. **Output 2: Institutional effectiveness improved.** The project will strengthen institutional effectiveness by (i) improving staff capacity in critical areas, such as urban service delivery, urban facilities O&M, and public–private partnerships; and (ii) establishing urban service units.[18]

21. **Output 3: Policy and planning environment improved.** The project will develop urban development strategies and risk-sensitive master plans for all three cities. It will develop a road map for financial sustainability for wastewater and solid waste, including a road map and arrangement for tariffs and a mechanism for ensuring household connections. It will build community awareness on the benefits of proper hygiene and sanitation, sewerage systems, and safe disposal of solid waste.

D. Summary Cost Estimates and Financing Plan

22. The project is estimated to cost $97.70 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).[19]

Table 1: Summary Cost Estimates ($ million)

Item			Amount[a]
A.	**Base Cost**[b]		
	1.	Urban environmental infrastructure improved	78.00
	2.	Institutional effectiveness improved	6.12
	3.	Policy and planning environment improved	1.10
		Subtotal (A)	**85.22**
B.	**Contingencies**[c]		**10.02**
C.	**Financial Charges During Implementation**[d]		**2.46**
		Total (A+B+C)	**97.70**

[a] Includes taxes and duties of $7.58 million. Such amount does not represent an excessive share of the project cost. ADB will finance taxes and duties only for incremental administration costs. The government will finance taxes and duties through exemption and/or cash contribution.
[b] Prices as of February 2018.
[c] Physical contingencies computed at 5% for civil works and for field research and development, training, surveys, and studies. Price contingencies computed at 1.5% on foreign exchange costs from 2018 to 2020 and 1.6% from 2021 and onward, and 3.5% on local currency costs in 2018 and onward; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
[d] Includes interest and commitment charges. Interest during construction for the loan has been computed at 1.0% during the grace period and 1.5% thereafter.
Source: Asian Development Bank estimates.

23. The government has requested (i) a concessional loan of $87.73 million equivalent from ADB's ordinary capital resources and (ii) a grant not exceeding $1.27 million from ADB's Special Funds resources (Asian Development Fund), to help finance the project.[20] 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 boundary of the property), which it will provide as a subsidy to identified poor households. The government may choose to recover all or part of this cost from the remaining households. The service area for solid waste covers 50%–75% of each city's population.

[18] The urban service units will be semiautonomous agencies responsible for project infrastructure O&M. They will initially be based in the project implementation unit at the DPWT, reporting to the MPWT.

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

[20] The concessional loan includes $1.73 million from the disaster risk reduction financing mechanism under the 11th replenishment of the Asian Development Fund.

24. The summary financing plan is in Table 2. ADB will finance the expenditures in relation to civil works, equipment and materials, consulting services, and incremental administration costs. ADB will not finance taxes and duties, except those relating to incremental administration costs.

Table 2: Summary Financing Plan

Source	Amount ($ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (concessional loan)	87.73	89.8
Special Funds resources (ADF grant)	1.27	1.3
Government	8.70	8.9
Total	**97.70**	**100.0**

ADF = Asian Development Fund.
Source: Asian Development Bank estimates.

25. Incremental climate adaptation and disaster risk reduction measures are estimated to cost $3,200,000. Of this, $1,270,000 will be financed by ADB through a grant from the disaster risk reduction financing mechanism. The remaining $1,930,000 will be financed by the concessional loan, of which $1,730,000 is from the disaster risk reduction financing mechanism while the remaining $200,000 is from the regular concessional loan. Details are provided in the climate change assessment.

E. Implementation Arrangements

26. The implementation arrangements are summarized in Table 3 and described in detail in the PAM (footnote 18).

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	January 2019–December 2023		
Estimated completion date	31 December 2023		
Estimated loan and grant closing date	30 June 2024		
Management			
(i) Oversight body	MPWT secretary of state (chair); Ministry of Land Management, Urban Planning and Construction; Ministry of Economy and Finance; Ministry of Interior; Ministry of Environment; and Tonle Sap Authority (members)		
(ii) Executing agency	MPWT		
(iii) Key implementing agencies	Provincial Departments of Public Works and Transport		
(iv) Implementation unit	General Department of Public Works in MPWT, 8 staff		
Procurement	International competitive bidding	6 contracts	$77,120,000
Consulting services	Quality and cost-based selection	501 person-months	$5,650,000
Advance contracting	MPWT has requested advance action for consulting services.		
Disbursement	The loan and grant proceeds will be disbursed following ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

ADB = Asian Development Bank, MPWT = Ministry of Public Works and Transport.
Sources: Asian Development Bank and Ministry of Public Works and Transport.

27. One project management consultant (PMC) will provide consulting services for the project and the proposed Fourth Greater Mekong Subregion Corridor Towns Development Project (which has the same implementation period) under a single contract. The MPWT requested expressions of interest for PMC recruitment on 11 June 2018.[21] The Project Readiness Improvement Fund

[21] Both projects have a similar scope of work and implementation schedule and are managed by the same project management unit (PMU) in MPWT. Combining their consulting service packages will attract a stronger firm, improve economies of scale, and ensure a strong field presence of key international experts across both projects.

helped improve project readiness (footnote 13). By project effectiveness, the detailed engineering design and bidding documents for wastewater treatment and management in two cities, representing 40% of the project financing, will be completed.

III. DUE DILIGENCE

A. Technical

28. Technical due diligence confirmed the project is technically viable. Wastewater and drainage design is based on projected storm water runoff and wastewater generation, and the required treated effluent quality for receiving waters.[22] Following an alternatives analysis that considered lagoon-based treatment systems and constructed wetlands, the MPWT selected the former as a lowest life-cycle cost solution that are easy to maintain. In Serei Saophoan, the MPWT will explore, during detailed design, the option to integrate a constructed wetland (nature-based approach) in the final stage of treatment. For solid waste, following an alternatives analysis that considered three options (controlled dump site, controlled landfill and a fully engineered sanitary landfill). the MPWT selected controlled landfills for all cities, with sufficient capacity to house waste until 2040. It selected reinjection and recirculation as a practical option for leachate treatment, consistent with ADB guidelines.[23] The project will prepare closure plans for existing dump sites and finance the rehabilitation and closure of two dump sites on public land. The project is classified *medium risk* from future climate change impacts. The project design includes climate adaptation and disaster risk reduction measures for the WWTPs in Battambang and Serei Saophoan (including raising the WWTPs and access roads) and drainage networks where pipes are designed to cater to 10-year flood return periods plus a safety factor for climate change.[24]

B. Economic and Financial

29. **Economic analysis.** The project is economically viable. The economic analysis followed ADB's guidelines and covered 25 years from the start of implementation in 2019 to 2043. The disability-adjusted-life-year approach was used to measure the health and environmental benefits of better wastewater management and the public health benefits from reduced inhalation of toxic fumes associated with burning waste as a result of the solid waste management components. Avoidance of flood damage and losses from disrupted economic activity during floods quantified the benefits of better drainage. The overall project economic internal rate of return for the three cities is 16.9% for the base case scenario and 14.5%–16.8% for the sensitivity tests, above the economic opportunity cost of capital of 9.0%.

30. **Financial analysis.** Financial due diligence for each subproject evaluated the financial sustainability of operating the infrastructure, including O&M and any required subsidies. A financial evaluation of the revenue-generating wastewater system and solid waste management in the three cities indicated that the government will be unable to achieve full cost recovery through its projected tariff collection. The financial sustainability risk rating is *substantial* and a subsidy or viability gap financing was estimated. For the wastewater and drainage subprojects, the MPWT supported the Battambang DPWT to enter an agreement with the provincial waterworks to collect a wastewater fee on the water bill and will support the other two DPWTs in establishing a similar

[22] The population density in the service areas (50–150 people per hectare) is sufficient to justify centralized treatment. For context, the average population density in Phnom Penh is 55 people per hectare. WWTPs will meet standards for discharge into public water areas and sewers, i.e., 80 milligrams per liter of 5-day biochemical oxygen demand and 100 milligrams per liter of chemical oxygen demand (*Sub-Decree No. 27 ANRK.BK on Water Pollution Control*).

[23] ADB. 2017. *Integrated Solid Waste Management for Local Governments: A Practical Guide.* Manila.

[24] Climate Change Assessment (accessible from the list of linked documents in Appendix 2).

arrangement. For solid waste, each city will develop a financial sustainability road map to increase service coverage to 80% of the urban population and link compensation to the private operator's performance. The government will ensure that MPWT and/or DPWT will cover any O&M shortfall.

C. Governance

31. ADB developed a risk assessment and risk management plan jointly with the government. The MPWT has experience in ADB-financed projects, and procurement capacity assessments have concluded that the MPWT has strong capacity to conduct procurement in accordance with ADB requirements. The financial management risk is *moderate* due to constrained resources for asset and financial management. A time-bound action plan will mitigate risks through (i) loan covenants on the appropriation of counterpart funds and anticorruption measures, (ii) periodic public financial management training, and (iii) additional mitigation measures described in the risk management plan.[25] ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and MPWT. The specific policy requirements and supplementary measures are described in the PAM.

D. Poverty, Social, and Gender

32. The project will directly benefit about 41,800 households, including 6,850 poor households and 7,940 households headed by women. It is classified *general intervention*. Through improved urban services, project area residents will benefit from reduced loss of productivity, medical expenditures, and indebtedness. Pro-poor design features include (i) free sewerage connections for all households, (ii) sanitation grants to identified poor households requiring replumbing to connect to the sewerage system, and (iii) free toilets for poor households.

33. The project is classified *effective gender mainstreaming.* A gender assessment identified (i) limited access to reliable, safe, and affordable urban services; and (ii) low women's participation in sector representation as key gender issues. Women's priority concerns include improved access to toilets, improved urban services, and affordable urban services. The gender action plan (i) has targets to increase women's representation in PMU and project implementation unit, (ii) includes gender-responsive measures in urban development strategy and urban master plans to ensure equitable access to urban facilities and services, and (iii) has targets for training.

E. Safeguards

34. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as below.[26] For facility sites to be acquired by the government after loan approval, MPWT assessed alternate sites at the feasibility stage and final sites will be confirmed during implementation based on topographic surveys, soil investigations, and detailed designs.

35. **Environment (category B).** The initial environmental examination report and three environmental management plans (EMPs) covering all subprojects are based on the preliminary design.[27] The MPWT disclosed the initial environmental examination report and the EMPs on the ADB website on 9 May 2018. It will obtain approval from the Ministry of Environment after the

[25] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).
[26] ADB. Safeguard Categories. https://www.adb.org/site/safeguards/safeguard-categories.
[27] Initial Environmental Examination; Environmental Management Plan: Stueng Saen; Environmental Management Plan: Serei Saophoan; and Environmental Management Plan: Battambang (accessible from the list of linked documents in Appendix 2).

detailed engineering design. The MPWT carried out public consultations to inform the project design and will continue to do so during implementation. The EMPs detail mitigation and monitoring measures for identified impacts, institutional arrangements, and implementation budget. MPWT will oversee EMP implementation with the PMC's support and a full-time environment PMU environmental safeguard officer.[28]

36. During project preparation, the MPWT confirmed sites for the two wastewater subprojects in Battambang and Stueng Saen. For the WWTP in Serei Saophoan and three landfills in three cities, the EMPs include a preliminary assessment of environmental impacts across several alternate sites, which will be confirmed after approval. The MPWT selected these sites to avoid or minimize impacts. The project will have net positive environmental and health benefits through reduced pollution and floods. Construction will have short-term, localized impacts such as surface water quality deterioration, noise, dust, traffic, and waste generation. During facility operation, effluent discharges and landfill leachate will need to be carefully managed. These impacts can be prevented or minimized through EMP implementation, effective O&M, and capacity building.

37. **Involuntary resettlement (category B).** The project will involve the acquisition of privately owned lands, resulting in temporary and limited permanent impact on incomes from loss of access to farming lands. No physical relocation is expected. During project preparation, the MPWT confirmed sites for two subprojects and prepared draft resettlement plans following ADB's Safeguard Policy Statement and Cambodian laws and regulations. None of the 44 displaced households in Battambang will experience major impacts, but 12 of 20 displaced households in Stueng Saen will experience major impacts. The MPWT has prepared a resettlement framework to screen subproject sites and guide the preparation of resettlement plans after the completion of detailed engineering design for the four sites that will be confirmed after approval.[29] The MPWT will submit resettlement plans to ADB for review and approval before awarding any contracts and will implement them before construction starts. Sites with *category A* impacts will not be financed. The MPWT disclosed the resettlement framework and plans on the ADB website on 23 May 2018.

38. The Ministry of Economy and Finance's General Department of Resettlement (GDR) has the experience and capacity to manage involuntary resettlement impact. The GDR will: (i) conduct training on ADB's Safeguard Policy Statement to build the capacity of relevant stakeholders; (ii) ensure that any physically or economically affected persons are compensated at full replacement cost before civil works begin; and (iii) establish an effective, gender-inclusive grievance redress mechanism to receive, record, and facilitate the resolution of communities' concerns over project impacts, with attention to vulnerable people. The PMU will have dedicated full-time staff to support compliance with ADB safeguard requirements. The GDR will update the draft resettlement plans based on detailed design and in accordance with the resettlement framework and will implement them before civil works begin.

39. **Indigenous peoples (category B).** The poverty and social assessment confirmed that Cham, Vietnamese, and Chinese ethnic minorities (considered indigenous peoples by ADB's Safeguard Policy Statement) reside in the larger project service areas. The two subprojects with confirmed sites will not adversely affect any indigenous peoples. For any unanticipated impacts, the MPWT prepared and disclosed an indigenous peoples planning framework on 9 May 2018.[30]

[28] The MPWT has implemented several ADB projects and understands ADB requirements, but the PMU does not have specialist safeguards resources to date, which is why full-time staff will be appointed.

[29] Resettlement Framework; Resettlement Plan: Stueng Saen; and Resettlement Plan: Battambang (accessible from the list of linked documents in Appendix 2).

[30] Indigenous Peoples Planning Framework (accessible from the list of linked documents in Appendix 2).

F. Summary of Risk Assessment and Risk Management Plan

40. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan (footnote 24).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Lack of financial sustainability from limited cost recovery and/or low willingness of households to connect to sewerage network or pay for improved services	The project includes financing for free household connections and on-site plumbing to ensure up-front connection of the households to the system. The project will develop a financial sustainability road map and will conduct a public awareness campaign.
Construction delays from delayed approval and implementation of land acquisition and/or resettlement	The Ministry of Public Works and Transport identified alternate sites for subprojects with unconfirmed sites. The resettlement framework developed with GDR will guide land acquisition during implementation.
Poor O&M of project infrastructure given limited local capacity for O&M	Subprojects will use simple technology with limited O&M requirements. Consultants will provide dedicated training on O&M.
Low capacity at project implementation units and ineffective transition to USUs	Initially, accounts will be at central level only. Consultancy support and covenants will build capacity for future transition to USUs.

GDR = General Department of Resettlement, O&M = operation and maintenance, USU = urban service unit.
Source: Asian Development Bank.

IV. ASSURANCES

41. The government and the MPWT have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, and disbursement as described in detail in the PAM and loan documents.

42. The government and the MPWT have agreed with ADB on certain covenants for the project, which are set forth in the draft loan and grant agreements.

V. RECOMMENDATION

43. I am satisfied that the proposed loan and grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve:

(i) the loan of $87,730,000 to the Kingdom of Cambodia for the Second Urban Environmental Management in the Tonle Sap Basin Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board; and

(ii) the grant not exceeding $1,270,000 to Kingdom of Cambodia, from ADB's Special Funds resources (Asian Development Fund) for the Second Urban Environmental Management in the Tonle Sap Basin Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant agreement presented to the Board.

Takehiko Nakao
President

6 July 2018

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with Sustainable, inclusive, equitable, and resilient growth achieved (National Strategic Development Plan, 2014–2018)[a]			
Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting**	**Risks**
Outcome Urban services improved in participating cities	By 2026 a. 69,800 people (35,750 women) serviced by new and improved wastewater collection and treatment facilities (2017 baseline: 6,300) b. 188,800 people (96,700 women) served by improved solid waste management (2017 baseline: 61,900) c. 15,700 people (8,040 women) benefit from reduced flooding through improved drainage (2017 baseline: not applicable)	a–c. Annual reports by DPWTs and MPWT, monitoring reports, ADB loan missions, and project completion report	Lack of financial sustainability from limited cost recovery and/or low willingness of households to connect to sewerage network or pay for improved services
Outputs 1. Urban environmental infrastructure improved	By 2024 1a. 3 new wastewater treatment plants with 9,600 m^3/day capacity constructed (2017 baseline: 0) 1b. 204 km of new sewer networks constructed (2017 baseline: 0) 1c. 26 km of new drainage networks constructed (2017 baseline: 0) 1d. 3 controlled landfills with 528,000 m^3 capacity constructed and operational (2017 baseline: 3 dump sites) 1e. 30% of staff employed in O&M are women (2017 baseline: 0)	1a–e. Project construction records and project progress reports	Construction delays from late approval and implementation of land acquisition and/or resettlement Poor O&M of project infrastructure, given limited local capacity for O&M
2. Institutional effectiveness improved	2a. Semiautonomous USUs established and operational (2017 baseline: not applicable) 2b. 25 government staff (including 10 women) reported increased knowledge on urban service delivery, urban facilities O&M, and public–private partnerships and other institutional arrangements (2017 baseline: 0)	2a. Project progress reports 2b. Training records	Low financial management and technical capacity at PIUs, and ineffective transition to USUs
3. Policy and planning environment improved	3a. Road map for financial sustainability (including tariff road map) developed between MPWT and three provincial governments, with consultation from MEF, MIH, MOWA, MRD, and other agencies (2017 baseline: not applicable)	3a–b. Project progress reports	Ineffective or delayed implementation of financial sustainability road maps

	3b. Urban development strategy and master plan with climate-resilient and gender-responsive measures developed and approved in all three cities (2017 baseline: not applicable)		

Key Activities with Milestones

1. Urban environmental infrastructure improved

1.1 Issue bidding documents for Battambang wastewater and Stueng Saen wastewater and drainage contracts by Q3 2018
1.2 Award works contracts for Battambang wastewater and Stueng Saen wastewater and drainage by Q2 2019
1.3 Complete land acquisition for Serei Saophoan wastewater and all landfills by Q2 2019
1.4 Issue bidding documents for Serei Saophoan wastewater and drainage by Q3 2019
1.5 Issue bidding documents for landfills in all three cities by Q1 2020
1.6 Award works contract for Serei Saophoan wastewater and drainage by Q1 2020
1.7 Award works contracts for landfills in all three cities by Q3 2020
1.8 Complete construction by Q4 2022

2. Institutional effectiveness improved

2.1 Begin on-the-job training for PMU and PIU staff by Q2 2020
2.2 Establish semiautonomous units with adequate staff by Q1 2021
2.3 Conclude on-the-job training for PMU and PIU staff by Q3 2023

3. Policy and planning environment improved

3.1 Begin preparation of urban development strategy and master plans by Q2 2019
3.2 Begin preparation of financial sustainability road map by Q2 2019
3.3 Finalize urban development strategy and master plans by Q4 2019
3.4 Develop financial sustainability road map by Q1 2020

Project Management Activities

Recruit project management consultants by Q1 2019
Ensure the completion of the project management consulting service by Q2 2024
Complete environmental management plan key activities, resettlement plan key activities, gender action plan key activities, and communication strategy key activities by Q2 2024

Inputs

Asian Development Bank: $87.73 million (concessional loan)
Asian Development Fund Disaster Risk Reduction Fund: $1.27 million (grant)
Government: $8.70 million

Assumption for Partner Financing

Not applicable.

ADB = Asian Development Bank; km = kilometer; m^3 = cubic meter, MEF = Ministry of Economy and Finance; MIH = Ministry of Industry and Handicrafts; MOWA = Ministry of Women's Affairs; MPWT = Ministry of Public Works and Transport; MRD = Ministry of Rural Development; O&M = operation and maintenance; DPWT = Department of Public Works and Transport; PIU = project implementation unit; PMU = project management unit, Q = quarter, USU = urban service unit.

[a] Government of Cambodia. 2014. *National Strategic Development Plan, 2014–2018*. Phnom Penh.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=50102-002-3

1. Loan Agreement
2. Grant Agreement
3. Sector Assessment (Summary): Water and Other Urban Infrastructure and Services
4. Project Administration Manual
5. Contribution to the ADB Results Framework
6. Development Coordination
7. Financial Analysis
8. Economic Analysis
9. Country Economic Indicators
10. Summary Poverty Reduction and Social Strategy
11. Risk Assessment and Risk Management Plan
12. Climate Change Assessment
13. Gender Action Plan
14. Initial Environmental Examination
15. Resettlement Plan: Stueng Saen
16. Resettlement Plan: Battambang
17. Resettlement Framework
18. Indigenous Peoples Planning Framework

Supplementary Documents

19. Environmental Management Plan: Stueng Saen
20. Environmental Management Plan: Serei Saophoan
21. Environmental Management Plan: Battambang
22. Stakeholder Communication Strategy
23. Technical Feasibility Studies
24. Financial Management Assessment Report