ADB

Board of Directors

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R87-18
24 August 2018

Proposed Grant
Fourth Greater Mekong Subregion Corridor Towns Development Project
(Lao People's Democratic Republic)

1. The Report and Recommendation of the President (RRP: LAO 50099-003) on the proposed grant to the Lao People's Democratic Republic for the Fourth Greater Mekong Subregion Corridor Towns Development Project is circulated herewith.

2. This Report and Recommendation should be read with (i) *Country Partnership Strategy: Lao People's Democratic Republic, 2017–2020—More Inclusive and Sustainable Economic Growth*, which was circulated to the Board on 31 August 2017 (DOC.Sec.M17-17); and (ii) *Country Operations Business Plan: Lao People's Democratic Republic, 2018–2020*, which was circulated to the Board on 27 September 2017 (DOC.IN.374-17).

3. In the absence of any request for discussion and in the absence of a sufficient number of abstentions or oppositions (which should be communicated to The Secretary by the close of business on 14 September 2018), the recommendation in paragraph 37 of the paper will be deemed to have been approved, to be so recorded in the minutes of a subsequent Board meeting. Any notified abstentions or oppositions will also be recorded in the minutes.

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Report and Recommendation of the President to the Board of Directors

Project Number: 50099-003
August 2018

Proposed Grant
Lao People's Democratic Republic: Fourth Greater Mekong Subregion Corridor Towns Development Project

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 16 August 2018)

Currency unit	–	kip (KN)
KN1.00	=	$0.000118
$1.00	=	KN8,508

ABBREVIATIONS

ADB	–	Asian Development Bank
DPWT	–	Department of Public Works and Transport
EMP	–	environmental management plan
GDP	–	gross domestic product
GMS	–	Greater Mekong Subregion
Lao PDR	–	Lao People's Democratic Republic
MPWT	–	Ministry of Public Works and Transport
O&M	–	operation and maintenance
PAM	–	project administration manual
PCU	–	project coordination unit
PIU	–	project implementation unit
SWM	–	solid waste management
SWTP	–	small-scale wastewater treatment plant
UDAA	–	Urban Development Administration Authority

WEIGHTS AND MEASURES

km	–	kilometer
m	–	meter
m^2	=	square meter
m^3	–	cubic meter

NOTES

(i) The fiscal year (FY) of the Government of the Lao People's Democratic Republic ends on 31 December. "FY" before a calendar year denotes the year in which the fiscal year ends, e.g., FY 2018 ends on 31 December 2018.

(ii) In this report, "$" refers to United States dollars.

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PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 50099-003

Project Name	Fourth Greater Mekong Subregion Corridor Towns Development Project	**Department /Division**	SERD/SEUW
Country	Lao People's Democratic Republic	**Executing Agency**	Ministry of Public Works and Transport
Borrower	Government of the Lao People's Democratic Republic		

2. Sector	**Subsector(s)**	**ADB Financing ($ million)**
✓ **Water and other urban infrastructure and services**	Other urban services	14.00
	Urban flood protection	10.00
	Urban sanitation	13.00
	Urban solid waste management	11.00
	Total	**48.00**

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	High
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns Urban environmental improvement	**ADB Financing** Adaptation ($ million)	7.26
Regional integration (RCI)	Pillar 4: Other regional public goods		

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

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

6. Risk Categorization: Low

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

8. Financing

Modality and Sources	**Amount ($ million)**
ADB	**48.00**
Sovereign Project grant: Asian Development Fund	48.00
Cofinancing	**0.00**
None	0.00
Counterpart	**6.06**
Government	6.06
Total	**54.06**

Source: Asian Development Bank

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed grant to the Lao People's Democratic Republic (Lao PDR) for the Fourth Greater Mekong Subregion (GMS) Corridor Towns Development Project.

2. The proposed project will improve urban environmental services and enhance regional economic connectivity in the towns of Paksan and Thakhek—the least developed towns along the GMS Central Corridor. It will finance (i) construction of sewerage networks and small-scale wastewater treatment plants (SWTPs) to improve sanitation, (ii) construction of controlled landfills and solid waste collection vehicles to improve municipal waste collection and management, (iii) improvement of the drainage network and river embankment for flood protection, (iv) rehabilitation and conservation of the old town center at Thakhek to promote regional tourism, and (v) preparation of town master plans to promote regional economic connectivity.

II. THE PROJECT

A. Rationale

3. **Macroeconomic context**. The Lao PDR has a strong record of sustaining high economic growth. During 2011–2016, the average annual gross domestic product (GDP) growth rate was 7.5%. In 2017, the country's GDP grew by 6.8%, increasing GDP per capita to $2,550.[1] However, significant development challenges remain, including (i) a high fiscal deficit, (ii) accumulated public and publicly guaranteed debt, (iii) an undiversified resource-based economy, and (iv) rapid urbanization with lagging urban services. The Lao PDR's Five-Year National Socio-Economic Development Plan, 2016–2020 recognizes the challenges and promotes sustainable small town development, particularly along major transport corridors, to help improve economic competitiveness, reduce poverty, and improve the environment.[2]

4. **Greater Mekong Subregion Central Corridor**. The Lao PDR is among the fastest urbanizing countries in Southeast Asia. It had an urban population of about 2.14 million in 2015, up from 0.77 million in 1995, with an urban population growth rate of about 4.1% while overall country population has grown at an average of 1.5% annually over the same period.[3] Growth in the urban economy and increasing agglomeration of economic activities in and around cities are increasing urbanization. The Lao PDR prioritizes the development of towns along the important GMS corridors, as it shares a border with all GMS countries. The GMS Central Corridor along the Mekong River is the backbone of the country—connecting Vientiane, the national capital, to the second largest economic center of Pakxe through the key provincial capitals of Kaysone Phomvihane, Paksan, and Thakhek. This 1,600 kilometer (km) corridor from the Lao PDR to Cambodia crosses 13 towns, with about 20 million people along the corridor, potentially generating more than $20 billion in regional economic output.[4]

5. **Towns along the central corridor.** On the GMS Central Corridor, the provinces of Bolikhamxay and Khammouan exhibit potential for economic growth. However, the capitals of the

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[1] Country Economic Indicators (accessible from the list of linked documents in Appendix 2).

[2] Government of the Lao PDR, Ministry of Planning and Investment. 2016. *8th Five-Year National Socio-Economic Development Plan (2016–2020)*. Vientiane.

[3] Lao Statistics Bureau. 2016. *Results of Population and Housing Census 2015*. Vientiane.

[4] The corridor population comprises the people living 50 km on either side of the Mekong River. The Asian Development Bank (ADB) calculated the economic output based on the provincial GDP per capita multiplied by the corridor population.

two provinces, Paksan and Thakhek, are the least developed towns along the corridor, struggling to capture increasing regional trade and investment and creating incentives for local economies in their hinterlands.

(i) Paksan, the capital of Bolikhamxay Province, is located at the juncture of the San and Mekong rivers. It is a small regional town with an urban population of about 26,000, growing at 2.5% annually. Paksan plays a key role as a logistics center for regional agricultural exports. In 2019, the construction of a new bridge connecting with Bueng Kan in Thailand will commence with funding from the Government of Thailand under the GMS initiative to improve regional linkages.

(ii) Thakhek, the capital of Khammouan Province, has a population of about 90,500 and is growing at 2.3% annually. The most significant sectors in the town's economy are tourism, trade, transport, and government services. Tourism could be developed by strengthening urban infrastructure and services in and around the town. The Third Thai–Lao Friendship Bridge links with the province of Nakhon Phanom in Thailand. In 2017, the bridge served 153,000 travelers to the Lao PDR, an increase of 41% from 2013, while 495,000 Laotians crossed it to go to Thailand.[5] The flow of tourism and trade into Thakhek provides economic opportunities to the town, but increases pressure on the already limited local infrastructure.

6. **Access to services and key issues**. The Lao PDR has focused its efforts on improving community health and hygiene through awareness and provision of improved sanitation services. This has resulted in a substantial improvement in the coverage of toilets and access to sanitation facilities—the coverage of improved sanitation facilities in urban areas rose to 94% in 2015 from 86% in 2008.[6, 7] Improved sanitation is currently limited to connecting pour-flush toilets to soak pits, septic tanks, and pit latrines,[8] while towns need improved wastewater collection and treatment systems to control surface water and groundwater pollution. Although major towns have a solid waste management (SWM) service, households and commercial and public buildings are not regularly serviced for collection, and disposal sites are typically open dump sites without appropriate environmental control and mitigation measures.[9] Regarding flood control and drainage, towns along the Mekong River face increased land erosion and fluvial flooding, which is exacerbated by the impacts of climate change, resulting in widespread damage.

7. **Policy framework**. The institutional and governance systems to manage urban areas in the Lao PDR are nascent. Various policies and legislation have been drafted to improve the urban governance and planning framework: the Sam Sang Policy, Local Administration Law 2015, and draft urban sanitation strategy. These aim to sharpen the government's approach toward decentralization and the identification of municipal areas as development or management units. However, institutionalizing these legislative changes—forming institutions, staffing them, and stabilizing their operations—will take time before they start responding to urbanization challenges. These delays are expected to affect infrastructure creation and service delivery, at least in the immediate term. Municipal entities require significant capacity development and regulatory mechanisms need to be set up to manage urban areas more effectively.

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[5] Government of the Lao PDR, Ministry of Information, Culture and Tourism. 2017. *Statistical Report on Tourism in Laos 2016*. Vientiane.

[6] An improved sanitation facility is defined in the World Health Organization–United Nations Children's Fund Joint Monitoring Program as one that hygienically separates human excreta from human contact.

[7] United Nations Children's Fund and World Health Organization. 2015. *Progress on Sanitation and Drinking Water: 2015 Update and MDG Assessment*. Vientiane.

[8] Government of the Lao PDR, MPWT. 2017. *Wastewater Management and Development in Laos*. Virachith Douangchanh. Vientiane.

[9] Open dump sites have little or no planning, management, record keeping, compaction, or covering of the solid waste. Liquid leachate pollutes surface water and groundwater, and landfill gas is released directly into the atmosphere.

8. **Institutional arrangements**. The Ministry of Public Works and Transport (MPWT), through the provincial Department of Public Works and Transport (DPWT), is responsible for riverbank protection works including operation and maintenance (O&M). The Urban Development Administration Authority (UDAA), under the provincial government, is responsible for wastewater and sanitation management, SWM, urban drainage, and urban renewal in the towns. The UDAA is also responsible for collecting fees for urban environmental services.

9. **Project-specific constraints**. The project towns experience the following constraints:

(i) In Paksan, 75% of the population has access to piped water supply but no sewer network is in place. Only 12% of households have properly constructed and managed septic tanks. The ongoing Asian Development Bank (ADB)-funded Water Supply and Sanitation Sector Project will expand water supply, which requires a proper wastewater treatment system.[10] The municipal waste collection system only serves 50% of households in 15 of the 22 villages. The collected waste is disposed of in open dump sites or elsewhere, often blocking drainage canals. Flooding and riverine erosion are major issues, as the town is at the confluence of the Mekong and San rivers.

(ii) In Thakhek, 62% of the population has access to piped water supply, but no sewer network is in place and only 20% of the households have septic tanks. Solid waste is collected from only 60% of the households in 26 of the 35 villages, and there is no appropriate waste dump site to ensure proper treatment and disposal. Flooding from the Mekong River and from increasingly intense rainfall and riverine erosion are major issues. Only about 30% of the town has roadside drains, many of which are blocked because waste collects in the drains.

10. **Financial management**. The income of Bolikhamxay and Khammouan DPWTs and the towns' UDAAs relies on funding from the central government. In fiscal year (FY) 2016, Bolikhamxay DPWT's annual local revenue covered only 26% of its recurrent expenditures, while Khammouan DPWT's annual local revenue accounted for 37%. Similarly, the Paksan and Thakhek UDAAs are heavily dependent on provincial and central government transfers. For FY2016, Paksan UDAA's annual local revenue accounted for only 50% of its recurrent expenditure while Thakhek UDAA's annual local revenue accounted for 12%.

11. **ADB's assistance and lessons learned**. Lessons incorporated from previous projects and two ongoing GMS corridor towns development projects in the Lao PDR include (i) concentrating investments in the same sector (i.e., sanitation and flood protection) and the same GMS corridor to achieve synergies in development impact; (ii) ensuring the project finances household connections and onsite plumbing costs, as these are crucial to the operational and financial viability of the wastewater system; and (iii) providing advisory support for developing a financial sustainability road map for all investments.[11]

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[10] ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Grant to the Lao People's Democratic Republic for the* Water Supply and Sanitation Sector Project. Manila.

[11] ADB. 2014. *Assessing Impact in the Greater Mekong Subregion: An Analysis of Regional Cooperation Projects*. Manila; Independent Evaluation Department. 2018. *Topical Paper: Leading Factors of Success and Failure in Asian Development Bank Urban Sanitation Projects.* Manila: ADB; ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan, Grant, and Administration of Grant to the Lao People's Democratic Republic for the Greater Mekong Subregion East–West Economic Corridor Towns Development Project*. Manila; and ADB. 2015. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Lao People's Democratic Republic for the Second Greater Mekong Subregion Corridor Towns Development Project*. Manila.

12. **Development coordination**. ADB is a lead partner in the Lao PDR's water and other urban infrastructure and services.[12] Japan International Cooperation Agency has supported the development of a master plan for Vientiane and financed urban environment and water supply investment in the city. The Agence Française de Développement has mainly focused on rural development and heritage conservation projects. In Thakhek, the project will complement Japan International Cooperation Agency's water supply project and the Agence Française de Développement's tourism project. The Norwegian Agency for Development Cooperation supports capacity development in the water supply sector along with ADB's ongoing Small Towns Water Supply and Sanitation Project.[13] Other partners such as the World Health Organization, the United Nations Children's Fund (UNICEF), and the World Bank's Water and Sanitation Program have been actively involved in water supply and sanitation.

13. **Strategic context**. The project aligns with ADB's Strategy 2030 and Urban Operational Plan.[14] It also aligns with the Lao PDR's Five-Year National Socio-Economic Development Plan, 2016–2020, highlighting the need to address the challenges of rapid urbanization such as waste management, traffic safety, migration, and other socioeconomic issues (footnote 2). It addresses key development challenges in ADB's country partnership strategy for the Lao PDR, 2017–2020[15]— that responds to limited progress in delivery of urban environmental services, leading to environmental degradation and low economic competitiveness.

14. **ADB's value addition.** ADB's support to GMS corridor towns is a unique long-term engagement to transform the regional transport corridor into an economic corridor.[16] This engagement has two significant benefits. First, the project effectively complements other ADB-financed projects in the towns. While the GMS Tourism Infrastructure for Inclusive Growth Project supports tourism around Thakhek,[17] this project will ensure the environmental infrastructure in the city is able to manage the waste from the increased tourist flow sustainably. Second, the project will pilot test a decentralized wastewater system, construct SWTPs for sparsely populated areas, and provide a platform for the Lao PDR to observe the performance and replicate the model in other small towns if successful. This approach to improved sanitation will allow the country to promote its Urban Sanitation Strategy effectively.

[12] Development Coordination (accessible from the list of linked documents in Appendix 2).
[13] ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant and Administration of Grants to the Lao People's Democratic Republic for the Small Towns Water Supply and Sanitation Project.* Manila.
[14] ADB. 2017. *Country Partnership Strategy: Lao People's Democratic Republic, 2017–2020—More Inclusive and Sustainable Economic Growth*. Manila; ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila; and ADB. 2013. *Urban Operational Plan, 2012–2020*. Manila.
[15] ADB. 2017. *Country Partnership Strategy: Lao People's Democratic Republic, 2017–2020—More Inclusive and Sustainable Economic Growth.* Manila.
[16] Guided by ADB. 2011. *The Greater Mekong Subregion Economic Cooperation Program Strategic Framework, 2012–2022*. Manila; ADB. 2018. *The Ha Noi Action Plan, 2018–2022*. Manila; and ADB. 2015. *Greater Mekong Subregion Urban Development Strategic Framework, 2015–2022*. Manila.
[17] ADB. 2014. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Lao People's Democratic Republic for the Greater Mekong Subregion Tourism Infrastructure for Inclusive Growth Project.* Manila.

B. Impact and Outcome

15. The project is aligned with the following impact: balanced regional and local development achieved (footnote 2). The project will have the following outcome: improved urban services in Paksan and Thakhek.[18]

C. Outputs

16. **Output 1: Urban environmental infrastructure improved.** This will include (i) four SWTPs with a combined capacity of 900 cubic meters per day (m^3/day) for wastewater treatment and 20 km of new sewers, a 220,000 m^3 controlled landfill, a 23 km drainage network, and a 1,840 meter (m) river embankment in Paksan; and (ii) four SWTPs with a combined capacity of 800 m^3/day for wastewater treatment and 7 km of new sewers, a 300,000 m^3 controlled landfill, a 9 km drainage network, and a 4,230 m river embankment in Thakhek.[19] Urban renewal and heritage conservation in Thakhek includes an 850 m riverfront promenade, renovation of the old town square, and restoration and conversion of the post office building into a tourist center.

17. **Output 2: Institutional effectiveness improved.** This will strengthen the government's capacity to support the provision of environmental infrastructure and includes (i) training 25 government staff in urban service delivery, asset management, O&M of urban facilities, and other institutional arrangements for improving urban service delivery; (ii) increasing women's representation in decision-making and technical positions to 35% in the project coordination unit (PCU) and 30% in the project implementation units (PIUs) in Paksan and Thakhek; (iii) preparing urban development strategies and master plans with climate-resilience and gender-responsive measures for Paksan and Thakhek; and (iv) preparing financial sustainability plans for the UDAAs and DPWTs in Bolikhamxay and Khammouan provinces, including budgeting, tariff setting for wastewater and SWM, and operational effectiveness.

D. Summary Cost Estimates and Financing Plan

18. The project is estimated to cost $54.06 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).[20]

Table 1: Summary Cost Estimates ($ million)

Item		Amount[a]
A.	**Base Cost**[b]	
	1. Urban environmental infrastructure improved	42.07
	2. Institutional effectiveness improved	4.55
	Subtotal (A)	**46.62**
B.	**Contingencies**[c]	**7.44**
	Total (A+B)	**54.06**

[a] Includes taxes and duties of $4.13 million. The government will finance value-added taxes and duties through exemption and cash contribution for staff salaries.
[b] In April 2018 prices.
[c] Physical contingencies computed at 11.1%. Price contingency is computed on foreign exchange costs of 1.5% from 2018 to 2020, and 1.6% from 2021 and onward; and local currency costs of 2.0% in 2018, 2.5% in 2019, 3.0% from 2020 to 2021, and 3.5% from 2022 onward; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
Source: Asian Development Bank estimates.

[18] The design and monitoring framework is in Appendix 1.
[19] The service area for drainage covers the core town and serves about 25% of its population. The service area for solid waste covers about 75% of the town's population.
[20] Project Administration Manual (accessible from the list of linked documents in Appendix 2).

19. The government has requested a grant not exceeding $48.00 million from ADB's Special Funds resources (Asian Development Fund) to help finance the project. The terms and conditions of the grant are set forth in the draft grant agreement.

20. 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 cost. ADB will not finance taxes and duties, except those relating to incremental administration cost. Climate adaptation is estimated to cost $7.26 million, and ADB will finance 100% of the adaptation costs.

Table 2: Summary Financing Plan

Source	Amount ($ million)	Share of Total (%)
Asian Development Bank		
Special Funds resources (Asian Development Fund Grant)	48.00	88.6
Government	6.06	11.4
Total	**54.06**	**100.0**

Source: Asian Development Bank estimates.

E. Implementation Arrangements

21. The implementation arrangements are summarized in Table 3 and described in detail in the Project Administration Manual (PAM).

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	January 2019–December 2023		
Estimated completion date	31 December 2023		
Estimated grant closing date	30 June 2024		
Management			
(i) Oversight body	Central PSC: Vice Minister, MPWT (chair); Vice Governors from Bolikhamxay and Khammouan provinces; Director General, Department of Housing and Urban Planning; Provincial DPWTs; and representatives from the Ministry of Finance, Ministry of Planning and Investment, and Ministry of Natural Resources and Environment (members). The project coordination unit will be the secretariat. Provincial-level PSCs: will be established in each province comprising the provincial-level officials from the departments in the central PSC.		
(ii) Executing agency	MPWT through the Department of Housing and Urban Planning		
(iii) Key implementing agencies	Provincial DPWTs in Paksan and Thakhek		
(iv) Implementation unit	A project coordination unit at MPWT and project implementing units at the two DPWTs.		
Procurement[a]	International competitive bidding	8 contracts	$36.24 million
	National competitive bidding	3 contracts	$2.03 million
	Shopping	1 contract	$70,000
Consulting services[a]	Quality- and cost-based selection	350 person-months	$2.82 million
	Individual consultant selection	55 person-months	$220,000
Advance contracting	MPWT requested advance contracting of the project implementation consultant (expressions of interest invited on 29 June 2018).		
Disbursement	The 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, DPWT = Department of Public Works and Transport, MPWT = Ministry of Public Works and Transport, PSC = project steering committee, UDAA = Urban Development Administration Authority.

[a] All civil works and goods will be procured in accordance with ADB's Procurement Guidelines (2015, as amended from time to time).

Source: Asian Development Bank.

III. DUE DILIGENCE

A. Technical

22. Technical due diligence confirmed the project is technically viable. The wastewater and drainage design is based on the projected storm water runoff and wastewater generation, and the required treated effluent quality for receiving waters.[21] Analysis of various system and treatment options confirmed that decentralized SWTPs was an economically viable option as this approach (i) supports the Lao PDR's strategy of transitioning from septic tanks and soak pits to a centralized system; (ii) offers low O&M cost; and (iii) builds on ADB's experience in wastewater management where small towns often benefit from an SWTP approach for wastewater based on low population densities.[22] A controlled landfill option, to be built on the existing dump sites with sufficient capacity to accommodate waste until 2040, was selected for solid waste. Reinjection and recirculation were selected as a practical option for leachate treatment, consistent with ADB-recommended practices.[23] The project will finance the retirement of existing waste in the dump sites in a controlled cell. It considered technology by analyzing the O&M budget and technical capacity of local government engineers.

23. The project is classified *high risk* from climate change impacts because of the Lao PDR's high exposure to intensifying weather-related events and the low adaptive capacity of communities and local governments. A detailed climate change assessment has been prepared.[24] The project design includes climate adaptation and disaster risk reduction measures for the drainage networks where pipes have been designed to cater to 10-year flood return periods plus a safety factor for climate change. Additional measures include raising embankments and paving landfill access roads with concrete to ensure all-weather access.

B. Economic and Financial

24. **Economic analysis.** The project is economically viable. The economic analysis followed ADB guidelines and covered 25 years from the start of implementation in 2019. Benefits of improved sanitation were quantified in terms of health and environmental benefits using the disability-adjusted life-year approach. Benefits for drainage and riverbank improvement were quantified based on avoidance of flood damage and losses caused by disrupted economic activity during floods. Benefits for improved SWM are reduced pollution in the service areas and avoided contamination of groundwater and pollution in the landfill sites and adjacent areas, which are quantified under the disability-adjusted life-year approach. The benefits of the urban renewal component in Thakhek were quantified based on the marginal increased expenses of foreign tourists visiting the town. The overall project economic internal rate of return for the two towns is 13.0% for the base case scenario and 11.0%–12.9% for the sensitivity tests, which are above the economic opportunity cost of capital of 9.0%.

25. **Financial analysis.** A financial evaluation of the revenue-generating wastewater treatment and SWM components in the two towns indicated that the government will be unable to achieve full cost recovery through the projected tariffs in the medium term. To ensure financial sustainability, it has committed to preparing a financial sustainability road map, including

[21] Wastewater treatment plants will meet standards for discharge into public water areas and sewers (i.e., 30 milligram/liter biological oxygen demand and 125 milligram/liter chemical oxygen demand).
[22] Independent Evaluation Department. 2018. *Topical Paper: Leading Factors of Success and Failure in Asian Development Bank Urban Sanitation Projects.* Manila: ADB.
[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).

incremental wastewater and solid waste fee schemes and realistic tariff collection methods, to strengthen revenue streams. It has also committed to financing all funding shortfalls for O&M costs of the UDAAs and provincial DPWTs, including riverbank protection and urban renewal and heritage conservation.

C. Governance

26. The MPWT is implementing three ADB-funded projects and becoming competent in complying with ADB's financial management and disbursement.[25] It has developed its institutional capacity to undertake international and national competitive bidding for civil works and goods. The financial management risk is *high* mainly because of the provincial implementing agencies' lack of knowledge of ADB procedures, weak recording of transactions, and lack of regular monitoring of fixed assets. Capacity development and training assistance will be provided by the project implementation consultants to the PCU and PIUs on financial and procurement management, asset management, and fund disbursement. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the MPWT and the DPWT. The specific policy requirements and supplementary measures are described in the PAM.

D. Poverty, Social, and Gender

27. The project will benefit about 1,650 households in Paksan, including 17 poor households and 145 households headed by women; and 1,250 households in Thakhek, including 60 poor households and 183 households headed by women, through improved wastewater collection and treatment services. Some 4,205 households in Paksan, including 42 poor households and 445 households headed by women; and 6,440 households in Thakhek, including 199 poor households and 738 households headed by women, will benefit from solid waste collection services under the project. Stormwater drainage in Thakhek will benefit 9,645 households, while the riverbank protection and enhanced urban space in Paksan will benefit 4,465 households. The project 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 in both towns include (i) free wastewater connections for all households in the SWTP service areas and free re-plumbing for poor households; (ii) expanded solid waste collection to un-serviced areas and free solid waste collection for poor households; (iii) livelihood security and safe work conditions for waste pickers linked to controlled landfill investments; and (iv) improved design features of riverbank areas and the town center in Thakhek through better street lighting and public toilets for women and men, which will enhance the livelihoods of self-employed traders and vendors.

28. The project is classified *effective gender mainstreaming.* A gender assessment identified key gender issues as limited access to reliable, safe, and affordable urban services; and low women's participation in sector representation. Women's traditional role as caregivers for sick family members leads to increased responsibilities arising from illnesses linked to poor environmental sanitation. Women's priorities for the project, based on extensive consultations, include reduced local flooding, improved public health, and affordable urban services. The gender action plan includes (i) targets to increase women's representation in PCU and PIU decision-making and technical positions, (ii) gender-responsive measures in the urban development strategy and master plan development, and (iii) targets for training women on planning and service urban service delivery.

[25] ADB. Lao PDR: Greater Mekong Subregion East–West Economic Corridor Towns Development Project; Lao PDR: Second Greater Mekong Subregion Corridor Towns Development Project; and Lao PDR. Pakse Urban Environmental Improvement Project.

E. Safeguards

29. In accordance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows:[26]

30. **Environment (category B).** Two initial environmental examination reports and two environmental management plans (EMPs), one per town, have been prepared based on preliminary designs. The initial environmental examinations and EMPs were disclosed on the ADB website on 5 July 2018. Approval from the Ministry of Natural Resources and Environment and/or provincial Department of Natural Resources and Environment will be obtained before awarding civil works contracts. The EMPs define mitigation and monitoring measures for identified impacts, institutional arrangements, and budget for implementation. The government will oversee EMP implementation with the support of consulting services. Baseline and periodic environmental monitoring of environmental receptors have been included in the costs. Public and stakeholder consultations informed the project design and will continue during implementation. A grievance redress mechanism will help facilitate the resolution of complaints regarding project performance.

31. All project sites have been selected to avoid impacts on sensitive environmental receptors. The construction of SWTPs and controlled landfills and the closure of existing dump sites, improved drainage, flood protection, and improved amenity facilities will have significant environmental and health benefits. Short-term, localized impacts such as surface water quality deterioration, noise, dust, traffic, and waste generation will occur during construction. The key risks during operation are effluent and leachate management. All discharge will be treated to the required national standards and will be closely monitored. Construction and operational environmental impacts and risks can be prevented or minimized to an acceptable degree through effective implementation of the EMP and capacity building.

32. **Involuntary resettlement (category B).** A resettlement plan has been prepared for each town following consultations with affected households. The resettlement plans were disclosed on the ADB website on 5 July 2018 and will be updated at the detailed design stage. An external monitor has been allocated to monitor implementation. The resettlement plans also set out the grievance redress and institutional mechanisms for the implementation of the resettlement plans. In total, 507 households (219 households in Paksan and 288 households in Thakhek) will be affected, but the impact to most households (468 households) will be minor. About 170 persons will be severely affected, either needing relocation (from the riverbank and the solid waste facility) or losing more than 10% of their income because of land acquisition. The project will acquire 39,718 square meters (m^2) of residential land (12,213 m^2 in Paksan and 27,505 m^2 in Thakhek) and 107,297 m^2 of agricultural land (50,342 m^2 in Paksan and 56,955 m^2 in Thakhek) from households in the two towns.

33. **Indigenous peoples (category C).** The Lao PDR encompasses multiple ethnic groups, but the subprojects do not cause any adverse impacts on their identity, social customs, culture, or areas of spiritual importance or interfere with their sociocultural beliefs and livelihood systems.

F. Summary of Risk Assessment and Risk Management Plan

34. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.[27]

[26] ADB. Safeguard Categories. https://www.adb.org/site/safeguards/safeguard-categories.
[27] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Lack of capacity for O&M of project infrastructure in the DPWTs/PIUs	The project considered the O&M cost and the local O&M capacity, and selected a relatively simple technology for wastewater and solid waste management. ADB and MPWT will collaborate with the Bremen Overseas Research and Development Association, which is providing O&M support for similar wastewater facilities in the country, to transfer knowledge; and a PIC engineer will provide O&M training to maintain the facilities.
Limited households connect to the wastewater system, affecting the technical and financial viability of the system	The project will provide free household connections and the MPWT and PCU, and DPWTs and PIUs will conduct public awareness campaigns on the advantages of wastewater and solid waste systems and the benefits to public health. MPWT will hold a dialogue with relevant authorities and towns to update the existing regulation for towns to mandate connections to the wastewater system for new buildings.
Fund shortage for O&M	ADB will support MPWT and urban development administration authorities in preparing financial sustainability (tariff) road maps for project provinces and towns to improve own source revenues and reduce dependence on the national government subsidy for O&M.
Loss of public asset because of poor inventory	MPWT and DPWTs will update the fixed asset registry every year during and after project implementation. The PIC engineer will train provincial government and DPWT staff in fixed asset management, including links to asset preventive maintenance activities.
Lack of accountability because of weak recording of revenues and expenditure in towns and provinces	ADB will support the government in organizing a training program conducted by the PIC financial specialist on financial management and reporting during the initial project period in the towns and provinces.
Lack of knowledge of ADB procurement, disbursement, and reporting standards	ADB will support MPWT and PCU in training PIU staff before the use of direct payments and advance funds, and the preparation of statement of expenditures procedures.

ADB = Asian Development Bank, DPWT = Department of Public Works and Transport, MPWT = Ministry of Public Works and Transport, O&M = operation and maintenance, PCU = project coordination unit, PIC = project implementation consultant, PIU = project implementation unit.
Source: Asian Development Bank.

IV. ASSURANCES AND CONDITIONS

35. 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 grant documents.

36. The government and the MPWT have agreed with ADB on certain covenants for the project, which are set forth in the grant agreement.

V. RECOMMENDATION

37. I am satisfied that the proposed grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the grant not exceeding $48,000,000 to the Lao People's Democratic Republic from ADB's Special Funds resources (Asian Development Fund) for the Fourth Greater Mekong Subregion Corridor Towns Development 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

24 August 2018

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with Balanced regional and local development achieved (Eighth Five-Year National Socio-Economic Development Plan, 2016–2020)[a]			
Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting**	**Risks**
Outcome Urban services in Paksan and Thakhek improved	By 2024: a. Annual flood damage in participating towns decreased by 50% (2017 baseline: average KN600,000 per household per flood event in Paksan and Thakhek) b. At least 20,000 tons per year of solid waste disposed of at controlled landfills (2017 baseline: 11,226 tons per year) c. At least 1,650 households in Paksan and 1,250 households in Thakhek serviced by small-scale wastewater treatment plants (2017 baseline: 0)	a. Socioeconomic household survey b. Monthly records from landfill operator c. Consultant's reports using village population data from provinces	Lack of capacity for operation and maintenance of project infrastructure in the DPWTs and/or PIUs Fund shortage for operation and management Limited households connect to the wastewater system, affecting the technical and financial viability of the system Loss of public asset because of poor inventory
Outputs 1. Urban environmental infrastructure improved	By 2023: 1a. About 32 km of drainage network constructed (2017 baseline: about 19 km) 1b. Eight small-scale wastewater treatment plants with total capacity of about 1,700 m^3 per day constructed (2017 baseline: 0) 1c. About 27 km of sewerage network constructed (2017 baseline: 0) 1d. Two controlled landfills with volume of at least 520,000 m^3 constructed (2017 baseline: not available) 1e. About 6 km of riverbank protection works constructed (2017 baseline: 0.9 km) 1f. Urban renewal and heritage conservation work in Thakhek old town, including an 850-meter riverfront promenade, renovation of old	1a.–1g. Project progress reports	Lack of knowledge of ADB procurement, disbursement, and reporting standards

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	town square, and restoration and conversion of the post office building into a tourist center, completed (2017 baseline: not available) 1g. Wastewater connections to 2,900 households, including 320 households headed by women and 75 low-income and/or poor households provided (2017 baseline: 0)		
2. Institutional effectiveness improved	By 2023: 2a. 25 government staff (including 10 women) reported increased knowledge of urban service delivery, asset management, and operation and maintenance of urban facilities and other institutional arrangements for improving service delivery (2017 baseline: 0) 2b. At least 35% of PCU staff will be women (2017 baseline: MPWT staff 50% women) 2c. At least 30% of PIU staff will be women (2017 baseline: 0%) 2d. Urban development strategy and master plan, with climate-resilience and gender-responsive measures, developed and approved for Paksan and Thakhek (2017 baseline: not available) 2e. Financial sustainability road maps for UDAAs and DPWTs, including budgeting, tariff setting for wastewater and SWM, and operational effectiveness, prepared (2017 baseline: not available)	2a.–2c. Evaluation of training sessions and/or workshops by participants 2d. Draft master plans 2e. Draft business plans for UDAAs	Slow formulation of and agreement on the wastewater and the solid waste tariff road maps

Key Activities with Milestones

1. Urban environmental infrastructure improved

1.1. Complete bidding documents for drainage component by Q3 2019
1.2. Complete bidding documents for SWM component by Q2 2020
1.3. Complete bidding documents for wastewater treatment component by Q4 2020
1.4. Complete bidding document for Thakhek old town component by Q4 2020
1.5. Complete bidding documents for riverbank protection component by Q4 2021
1.6. Complete engagement of drainage contractor(s) by Q1 2020
1.7. Complete engagement of SWM contractor(s) by Q4 2020
1.8. Complete engagement of wastewater treatment contractor(s) by Q3 2021
1.9. Complete engagement of Thakhek old town contractor by Q2 2021
1.10. Complete engagement of riverbank protection contractors by Q2 2022
1.11. Complete land acquisition and resettlement activities in Thakhek by Q4 2021
1.12. Complete land acquisition and resettlement activities in Paksan by Q4 2021
1.13. Complete construction by Q4 2023.

2. Institutional effectiveness improved

2.1. Complete procurement of the PIC consulting service by Q4 2018
2.2. Begin preparation of urban development strategy and master plans by Q2 2019
2.3. Begin preparation of financial sustainability road map by Q2 2019
2.4. Finalize urban development strategy and master plans by Q2 2021
2.5. Financial sustainability road map developed by Q2 2021
2.6. Begin on-the-job training for PCU and PIU staff by Q2 2020
2.7. Complete the PIC consulting service by Q2 2024

Project Management Activities

Environmental management plan key activities, resettlement plan key activities, gender action plan key activities, and communication strategy key activities by Q4 2023

Inputs

ADB: $48.0 million (grant)
Government of the Lao People's Democratic Republic: $6.2 million

Assumptions for Partner Financing

Not applicable

ADB = Asian Development Bank, DPWT = Department of Public Works and Transport, km = kilometer, m^3 = cubic meter, MPWT = Ministry of Public Works and Transport, PCU = project coordination unit, PIC = project implementation consultant, PIU = project implementation unit, Q = quarter, SWM = solid waste management, UDDA = Urban Development Administration Authority.

[a] Government of the Lao People's Democratic Republic, Ministry of Planning and Investment. 2016. *Eighth Five-Year National Socio-Economic Development Plan, 2016–2020*. Vientiane.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=50099-003-3

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