



# Report and Recommendation of the President to the Board of Directors

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Project Number: 41123-015  
September 2017

## Proposed Loan Kingdom of Cambodia: Road Network Improvement Project

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Asian Development Bank

## CURRENCY EQUIVALENTS

(as of 14 August 2017)

Currency unit	–	riel/s (KR)
KR1.00	=	\$0.00024
\$1.00	=	KR4,111

## ABBREVIATIONS

ADB	–	Asian Development Bank
DED	–	detailed engineering design
EMP	–	environmental management plan
GMS	–	Greater Mekong Subregion
GRM	–	grievance redress mechanism
HTAP	–	HIV/AIDS and human trafficking awareness and prevention program
IEE	–	initial environmental examination
JICA	–	Japan International Cooperation Agency
km	–	kilometer
MPWT	–	Ministry of Public Works and Transport
NRSC	–	National Road Safety Council
PAM	–	project administration manual
PBC	–	performance-based contract
PMU	–	project management unit
SEC	–	Southern Economic Corridor
TA	–	technical assistance

## NOTE

- (i) In this report, “\$” refers to United States dollars.

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## PROJECT AT A GLANCE

<b>1. Basic Data</b>		<b>Project Number:</b> 41123-015	
<b>Project Name</b>	Road Network Improvement Project (formerly Second Road Asset Management Project)	<b>Department /Division</b>	SERD/SETC
<b>Country Borrower</b>	Cambodia Ministry of Economy and Finance	<b>Executing Agency</b>	Ministry of Public Works and Transport
<b>2. Sector</b>		<b>ADB Financing (\$ million)</b>	
✓ <b>Transport</b>	Road transport (non-urban)		70.00
		<b>Total</b>	<b>70.00</b>
<b>3. Strategic Agenda</b>		<b>Climate Change Information</b>	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Adaptation (\$ million)	4.00
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns	Climate Change impact on the Project	High
Regional integration (RCI)	Pillar 1: Cross-border infrastructure		
<b>4. Drivers of Change</b>		<b>Gender Equity and Mainstreaming</b>	
Governance and capacity development (GCD)	Organizational development	Effective gender mainstreaming (EGM)	✓
Knowledge solutions (KNS)	Application and use of new knowledge solutions in key operational areas		
Private sector development (PSD)	Public sector goods and services essential for private sector development		
<b>5. Poverty and SDG Targeting</b>		<b>Location Impact</b>	
Geographic Targeting	No	Nation-wide	High
Household Targeting	No		
SDG Targeting	Yes		
SDG Goals	SDG5, SDG9		
<b>6. Risk Categorization:</b>		Low	
<b>7. Safeguard Categorization</b>		Environment: B Involuntary Resettlement: C Indigenous Peoples: C	
<b>8. Financing</b>			
<b>Modality and Sources</b>		<b>Amount (\$ million)</b>	
<b>ADB</b>		<b>70.00</b>	
Sovereign Project (Concessional Loan): Ordinary capital resources		70.00	
<b>Cofinancing</b>		<b>0.00</b>	
None		0.00	
<b>Counterpart</b>		<b>6.70</b>	
Government		6.70	
<b>Total</b>		<b>76.70</b>	



## I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the Kingdom of Cambodia for the Road Network Improvement Project.

2. The project aims to provide efficient transportation on the Greater Mekong Subregion (GMS) Southern Economic Corridor (SEC), which passes through Cambodia, through the improvement of the national road sections in Prey Veng, Siem Reap, and Svay Rieng provinces of Cambodia that are unsafe and prone to flooding.<sup>1</sup> The project will also (i) support the Ministry of Public Works and Transport (MPWT) in road asset management by (a) strengthening its axle load control operation, (b) introducing a quality assurance system, and (c) improving road maintenance execution; and (ii) help project communities in improving their safety and health by implementing a gender-responsive community-based road safety program and an HIV/AIDS and human trafficking awareness and prevention program (HTAP).<sup>2</sup>

## II. THE PROJECT

### A. Rationale

3. In Cambodia, road transport is the dominant mode of transport. Roads are critical to social and economic development, especially in areas where they are the only available transport mode. The core development problem with Cambodia's road subsector is low connectivity and inefficiency. These problems are caused by incomplete regulatory frameworks, low institutional capacity, limited private sector participation, lack of sustainability, and the incomplete state of the road network. The Government of Cambodia is addressing these issues with the assistance of the Asian Development Bank (ADB), the Japan International Cooperation Agency (JICA), the World Bank, and bilateral donors. The project will further help the government address the lack of connectivity, limited private sector participation, and lack of sustainability.

4. The road network managed by the MPWT comprises 2,254 kilometers (km) of one-digit national roads, connecting the country with its borders and the GMS network; 5,007 km of two-digit national roads; and 8,144 km of provincial roads. With the assistance of development partners, the government has focused on rehabilitating national roads and brought the paved road network to 3,403 km (about 47% of national roads, as of 2016) with asphalt concrete, cement concrete, and double bituminous surface treatment. With rapidly increasing traffic, there is a need to upgrade the national and provincial roads to higher standards to provide a better level of service. Therefore, the MPWT targets to (i) upgrade all one-digit national roads to asphalt concrete, (ii) increase the paved road ratio to 90%, and (iii) improve unsafe provincial roads by 2020.

5. The project will improve two one-digit national roads to asphalt concrete using a hybrid performance-based contract (hybrid PBC) which involves construction and routine maintenance to promote engaging local contractors in road maintenance works. A hybrid PBC is being piloted

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<sup>1</sup> The SEC takes in the following four subcorridors: Central Subcorridor: Dawei–Bangkok–Phnom Penh–Ho Chi Minh City–Vung Tau (SEC-1); Northern Subcorridor: Bangkok–Siem Reap–Stung Treng–Pleiku–Quy Nhon (SEC-2); Southern Coastal Subcorridor: Bangkok–Trat–Kampot–Ha Tien–Nam Can (SEC-3); and Intercorridor Link Sihanoukville–Phnom Penh–Stung Treng–Pakse–Savannakhet (SEC-4). The project roads are along SEC-1 and SEC-2.

<sup>2</sup> The project is included in ADB. 2017. *Country Operations Business Plan: Cambodia, 2017–2019*. Manila.

under the World Bank-financed Road Asset Management Project II.<sup>3</sup> Close coordination with the World Bank has already been initiated and will be pursued to ensure synergies and avoid overlaps.

6. Cambodia has been a key player in developing the GMS transport network. Cambodia completed the SEC subcorridors with a total length of 2,802 km (58% of the SEC) connecting the Lao People's Democratic Republic, Myanmar, Thailand, and Viet Nam that form a part of its national road network. Since 2010, the MPWT has been implementing a national road improvement program (including upgrading the SEC subcorridors to asphalt concrete and/or widening them to four lanes to meet the growing traffic volume and axle loads). The project will support the MPWT's programs by improving two road sections along SEC-1 (a 97-km section of National Road 1) and SEC-2 (a 50-km section of National Road 6).

7. While the MPWT is rehabilitating the road network, road conditions have deteriorated as a result of flooding. The provinces located close to Tonle Sap and the Mekong River, which include the project provinces, are vulnerable to flooding. The MPWT prepared the Climate Change Action Plan for Transport Sector (2014–2018) to address both adaptation and mitigation aspects of climate change in the transport sector. The ongoing ADB-financed Provincial Roads Improvement Project (PRIP) supports the implementation of the climate change action plan.<sup>4</sup> The PRIP prepared design tools for assessing flood risks, developed more climate-resilient roads, and provided emergency management planning. The project will complement the PRIP outcomes by (i) enhancing these design tools through the transaction technical assistance (TA),<sup>5</sup> and (ii) implementing climate adaptation measures for the civil works. To improve project readiness, the TA will also prepare detailed engineering designs (DEDs) and assist procurement of the civil works.

8. By establishing weigh stations to control axle loads, the past ADB and JICA interventions made some headway in preserving the MPWT's road assets from damage caused by overloaded trucks. However, since 2012, the operation of weigh stations has run into operational and technological problems. The damage caused by overloaded vehicles has been estimated at \$100 million. In May 2016, the MPWT requested ADB's support in exploring effective approaches to control axle loads. In February 2017, ADB approved the capacity development TA for Institutional Capacity Building in the Road Sector to undertake deeper analysis on the technology being used in all weigh stations and recommend alternative technologies, approaches, institutional arrangements, and work processes required to effectively control overloading in Cambodia.<sup>6</sup> In parallel, through the project and ongoing provincial roads project, ADB will help the MPWT refurbish the weigh stations and implement the capacity development TA recommendations.

9. High-quality civil works are essential to sustain road assets and optimize available budget allocations. The MPWT recognizes this and, with the assistance of JICA, prepared a series of technical documents providing guidelines for inspecting civil works. However, the MPWT still lacks a comprehensive quality assurance mechanism to undertake quality audit of works. The MPWT has only one laboratory and as it is in Phnom Penh it is not able to carry out routine quality control

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<sup>3</sup> The Second Road Asset Management Project was approved in May 2016 and will provide periodic maintenance on national roads and support for the road asset management system by updating the road database and upgrading the maintenance planning tool. Procurement of civil works and goods and recruitment of consulting services are ongoing.

<sup>4</sup> ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia for the Provincial Roads Improvement Project*. Manila.

<sup>5</sup> ADB. 2015. *Technical Assistance to the Kingdom of Cambodia for the Second Road Asset Management Project*. Manila. Additional financing of a \$1 million grant from the Project Readiness Improvement Trust Fund was approved on 17 February 2017. The preparation of DEDs is ongoing.

<sup>6</sup> ADB. 2017. *Technical Assistance to the Kingdom of Cambodia for Institutional Capacity Building in the Road Sector*. Manila (TA 9300-CAM). The consulting services are ongoing.



testing for road works throughout the country. Hence, there is a need to develop a quality assurance mechanism within the MPWT and establish regional laboratories to provide timely and quality testing of construction materials.

10. Road safety in Cambodia is a growing concern. In 2015, the Road Crash Victim Information System of the National Road Safety Council (NRSC) recorded the fatality rate of 14.8 per 100,000 inhabitants, which is the second highest among member countries of the Association of Southeast Asian Nations. With limited budget and human resources, the NRSC has been striving to implement the road safety programs in Cambodia, focusing primarily on Phnom Penh where the fatalities are the highest. While 80% of Cambodian's live in rural areas, the government's road safety initiatives in these areas are limited. ADB has been providing road safety assistance as part of every road subsector intervention since 2008. The project will continue such efforts by improving awareness of road traffic regulations at the commune level, since about 90% of crashes are attributable to road user error or behavioral issues. It is important to seek commune engagement in road safety to ensure the best possible results in changing road user behavior.

11. **Value added by ADB assistance.** ADB has been one of the government's leading partners in developing the road subsector. ADB helped the government develop the road network, improve road asset management, and adopt climate adaptation measures, and has developed a close and successful partnership with the MPWT. The project will further build on this partnership by strengthening the capacity of the MPWT in implementing civil works by (i) improving contract models and using hybrid PBCs (para. 5) that provide (a) clear service levels and response times, (b) appropriate risk distribution between the MPWT and contractors, and (c) implementable penalty and incentive mechanisms; and (ii) introducing a quality assurance and quality control system (output 3). The project will also add value by introducing a technical audit to conduct due diligence on procurement and execution of hybrid PBCs.

12. The project's design has incorporated lessons learned in procurement and project implementation. The TA (para. 7) will contribute to greater efficiency of civil works by providing advance preparation of the DEDs and procurement support and capacity building for the MPWT and local contractors with hybrid PBCs.<sup>7</sup>

13. The project aligns with the priorities in the country partnership strategy, 2014–2018 to reduce poverty and vulnerability in Cambodia.<sup>8</sup> The project supports the government's Rectangular Strategy Phase III for 2013–2018 that emphasizes the need for development of physical infrastructure along with three other core areas (agriculture sector promotion, private sector development and employment, and capacity building and human resource development) by improving national and regional connectivity and building institutional capacity, and the National Strategic Development Plan 2014–2018.<sup>9</sup> The project contributes to the GMS network development priorities and to ADB's climate adaptation finance targets (para. 23).

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<sup>7</sup> The consulting services commenced in June 2017. DEDs are expected to be completed in September 2017 and the bidding documents are expected to be issued in October 2017.

<sup>8</sup> ADB. 2014. *Country Partnership Strategy: Cambodia, 2014–2018*. Manila.

<sup>9</sup> Rectangular Strategy for Growth, Employment, Equity, and Efficiency Phase III of the Royal Government of Cambodia of the Fifth Legislature of the National Assembly, Royal Government of Cambodia, Phnom Penh, 2013. National Strategic Development Plan 2014-2018, Royal Government of Cambodia, Phnom Penh, 2014.

## B. Impact and Outcome

14. The project is aligned with the following impact: developed transport infrastructure to enhance national competitiveness and people's welfare. The project will have the following outcome: increased transport efficiency on the national road sections along the GMS SEC.<sup>10</sup>

## C. Outputs

15. **Output 1: More safe and climate-resilient national roads delivered.** The project will improve about 147 km of flood-prone and unsafe national roads through provision of periodic maintenance of NR6 (50 km) and rehabilitation of NR1 (97 km) with asphalt concrete pavement. The climate resiliency measures, such as reinforced embankment slope protection, increased drainage capacity, and additional urban drains and outlets, will be provided on the project roads to ensure all-year access and help reduce the vulnerability of communes to climate change.

16. **Output 2: Axle load control enhanced.** The project will help the MPWT control vehicle overloading through (i) refurbishing six weigh stations by (a) installing required equipment at Bavet, Puok, and Thnal Tutoeng weigh stations; and (b) constructing office buildings for the Kompong Thom, Kratie, and Steuong Treng weigh stations; (ii) providing portable weigh scales and vehicles for two mobile teams; and (iii) providing on-the-job training for staff in weigh stations and mobile teams. The project will implement pilot axle load control at selected goods' places of origin and introduce conditions to the civil works contract to require contractors to follow load limits when transporting construction materials.

17. **Output 3: Quality assurance for civil works in the Ministry of Public Works and Transport strengthened.** The project will help the MPWT to (i) establish a dedicated quality assurance wing to undertake quality audit on the completed civil works to ensure the quality meets the specifications; (ii) establish and make operational four regional laboratories—in Kampot, Kratie, Pursat, and Siem Reap provinces—to efficiently and effectively test construction materials; (iii) create a computerized laboratory information management system to integrate the activities of the regional laboratories; (iv) prepare standard operating procedures for the quality assurance wing and laboratory management and train staff in the operation of the new quality assurance process and procedures; and (v) purchase equipment for material testing and surveying road conditions.

18. **Output 4: Road safety enforcement in project communes improved.** This output focuses on community-based road safety activities through three pillars of activities: data compilation and analysis, safe school zones, and enhanced law enforcement. Since Cambodia has a relatively well-established data collection system—the Road Crash Victim Information within the NRSC—road crash data at the commune level will be compiled and analyzed for formulating road safety activities effective for communes. These data, along with school characteristics, are gathered to design safe school zones under this output. Finally, law enforcement is also supported by engaging (such as support with training and equipment) traffic police in the project area to focus on enforcing the law to minimize the most common offenses for crashes: speeding, drunk-driving behavior, and negligence in wearing helmets. The community-driven education will focus on community awareness raising for changing behaviors that cause fatal crashes.

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<sup>10</sup> The design and monitoring framework is in Appendix 1.

19. Small works for safe school zone infrastructure, such as safety signs, humps, and lane markings (for schools along all project roads), will be provided. To supplement these road safety activities, detailed design will include low-cost road safety engineering measures.<sup>11</sup>

#### D. Summary Cost Estimates and Financing Plan

20. The project is estimated to cost \$76.7 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).<sup>12</sup> The project will finance civil works, equipment, consulting services, project administration, operation and maintenance of the project facilities (weigh stations and regional laboratories), and taxes and duties.

**Table 1: Summary Cost Estimates**  
(\$ million)

Item	Amount <sup>a</sup>
<b>A. Base Cost<sup>b</sup></b>	
1. Output 1: More safe and climate-resilient national roads delivered	52.83
2. Output 2: Axle load control enhanced	1.79
3. Output 3: Quality assurance for civil works in MPWT strengthened	8.99
4. Output 4: Road safety enforcement in project communes improved	1.00
<b>Subtotal (A)</b>	<b>64.61</b>
<b>B. Contingencies<sup>c</sup></b>	<b>9.98</b>
<b>C. Financial Charges During Implementation<sup>d</sup></b>	<b>2.11</b>
<b>Total (A+B+C)</b>	<b>76.70</b>

MPWT = Ministry of Public Works and Transport.

<sup>a</sup> Includes taxes and duties of \$6.38 million, of which \$3.38 million will be financed by the government in cash contribution. The Asian Development Bank-financed taxes and duties do not represent an excessive share of the project cost.

<sup>b</sup> In mid-2017.

<sup>c</sup> Physical contingencies computed at 8.0% for base cost. Price contingencies computed at average of 1.5% on foreign exchange costs and 3.5% on local currency costs; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.

<sup>d</sup> Interest during construction for the concessional loan has been computed at 1.0% per year during the grace period and 1.5% per year thereafter.

Source: Asian Development Bank estimates.

21. The government has requested a concessional loan in various currencies equivalent to \$70 million from ADB's ordinary capital resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years, with 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.

22. The summary financing plan is in Table 2. ADB will finance civil works, equipment, consulting services, project administration, contingencies, and financial charges during implementation, and taxes and duties. The government will finance an estimated \$6.7 million to cover financial audit, project implementation staff salary supplement, operation and maintenance of the weigh stations and laboratories, and duties and taxes on civil works.

<sup>11</sup> Output 4: Road Safety Enforcement in Project Communes Improved (accessible from the list of linked documents in Appendix 2).

<sup>12</sup> Project Administration Manual (accessible from the list of linked documents in Appendix 2).

**Table 2: Summary Financing Plan**

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (concessional loan)	70.00	91.27
Government	6.70	8.73
<b>Total</b>	<b>76.70</b>	<b>100.00</b>

Sources: Asian Development Bank estimates.

23. **Climate change adaptation and finance.** The project is classified as being at high risk from future climate change impacts. A climate risk and vulnerability assessment completed under the transaction TA indicated an increased risk of extreme rainfall events and flood because of climate change. Climate adaptation measures are estimated to cost around \$4 million. ADB will finance 92.5% of adaptation costs. The project does not include specific climate mitigation measures. However, the improved road condition has been calculated to result in a net reduction of 45,687 tons of carbon dioxide emissions per year.

## E. Implementation Arrangements

24. The executing agency will be the MPWT and the implementing agency will be the project management unit (PMU). The PMU will have overall coordination and implementation responsibility and be supported by (i) implementation and construction supervision consultants for implementing outputs 1–3, (ii) road safety consultants for implementing output 4, (iii) a technical auditor for execution of a hybrid PBC, and (iv) a procurement consultant for undertaking procurement of small civil works and goods. Because they have undertaken several ADB-financed projects, the MPWT and PMU have experience in and a detailed understanding of ADB's procurement and financial management policies and procedures. In addition, the PMU will benefit from the capacity development TA for Strengthening Capacity for Improved Implementation of Externally Funded Projects in Cambodia and further strengthen its skills in project management.<sup>13</sup> The implementation arrangements are summarized in Table 3 and described in detail in the PAM.

**Table 3: Implementation Arrangements**

Aspects	Arrangements		
Implementation period	January 2018–December 2022		
Estimated completion date	31 December 2022		
Estimated loan closing date	June 2023		
Management			
(i) Oversight body	Ministry of Economy and Finance		
(ii) Executing agency	Ministry of Public Works and Transport		
(iii) Key implementing agencies	Project Management Unit 3		
(iv) Implementation unit	Phnom Penh, 24 staff		
Procurement	International competitive bidding	4 contracts	\$53.47 million
	National competitive bidding	7 contracts	\$3.24 million
	Shopping	3 contracts	\$0.19 million
Consulting services	Quality- and cost-based selection	609 person-months	\$3.47 million
	Individual consultant selection	12 person-months	\$0.08 million

<sup>13</sup> ADB. 2017. *Technical Assistance to the Kingdom of Cambodia for Strengthening Capacity for Improved Implementation of Externally Funded Projects in Cambodia*. Manila. The TA will build the capacity of executing and implementing agencies in the areas of procurement, financial management, monitoring and evaluation, inclusive development and/or gender mainstreaming, and other aspects relating to project management.

Aspects	Arrangements
Retroactive financing and/or advance contracting	Advance contracting for recruitment of implementation and supervision consultants and procurement of civil works.
Disbursement	The loan proceeds will be disbursed following ADB's <i>Loan Disbursement Handbook</i> (2015, as amended from time to time) and detailed arrangements agreed between the government and ADB.

ADB = Asian Development Bank.

Source: Asian Development Bank estimates.

### III. DUE DILIGENCE

#### A. Technical

25. The project was assessed as technically viable. Several climate adaptation measures and road safety measures, such as reinforced embankment slope protection, increased drainage capacity, and additional urban drains and outlets, have been included in the project design to keep the completed roads open to users and traffic in all weather conditions. The provision of local capacity building to operate and maintain the project's weigh stations and regional laboratories has been incorporated in the project.

#### B. Economic and Financial

26. The project is economically viable. The economic internal rate of return is 17.9%, and the net present value is \$27.1 million at a 9.0% discount rate. Additional benefits from the avoidance of potential future flooding on project roads, better safety and axle load control, and improved quality of maintenance works were not included in the quantitative analysis but would improve the economic returns of the project.<sup>14</sup>

27. Financial analysis demonstrated that funds allocated from the national budget to the MPWT have steadily increased since 2014, although a major portion of the national and provincial road network still needs maintenance and rehabilitation.<sup>15</sup> Road maintenance funding must be in place in a sustainable manner. The ongoing capacity development TA (para. 8) will assist the MPWT in exploring several alternative road financing options in addition to the national budget to help sustain road assets at desirable levels. Outputs 2 and 3 will help avoid premature deterioration of roads from overloaded trucks and poor quality of civil works at both the construction and maintenance stages. In addition, the World Bank's Road Asset Management Project II will enhance the current maintenance planning process that will optimize maintenance priority of the MPWT's roads, including the project roads, based on road conditions and traffic volumes. These arrangements will make the project more sustainable.

#### C. Governance

28. All procurement of goods, works and services to be financed by the loan will follow ADB's Procurement Guidelines (2015, as amended from time to time) and Guidelines on the Use of Consultants (2013, as amended from time to time). The risk rating for the project procurement risk assessment is *substantial*. The assessment concluded that the implementation of the recommended mitigation measures are considered satisfactory overall. However, the project includes hybrid PBCs, which have not been used before in Cambodia, and all three contract

<sup>14</sup> Economic Analysis (accessible from the list of linked documents in Appendix 2).

<sup>15</sup> Financial Analysis (accessible from the list of linked documents in Appendix 2).

packages will have prior review by ADB. The transaction TA (para. 7) will provide training for MPWT staff and workshops for local contractors on the use of hybrid PBCs, which will complement the capacity building activities being provided by the World Bank.

29. The financial management assessment confirms that the MPWT has adequate financial management arrangements for implementing the project. The overall financial management risk is *moderate*. The MPWT has good financial management capacity (para. 24), and the ongoing World Bank project will further strengthen this. In addition, with appropriate mitigation measures involving appointment of additional staff and training under the project, the risk will be alleviated.

30. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and the MPWT. The specific policy requirements and supplementary measures are described in the PAM.

#### **D. Poverty, Social, and Gender**

31. The project will benefit about 290,000 persons in 31 communes in three provinces. The poverty rates in the three project provinces are 23.6% in Prey Veng, 17.7% in Siem Reap, and 17.3% in Svay Rieng, and all are in the mid-range of the country's provincial poverty rate, which ranges from 9.0% in Phnom Penh to 33.0% in Battambang.<sup>16</sup> Improved mobility will provide poor rural communities with all-year access to larger markets, health centers, education facilities, and government organizations, and reduced travel times and transport costs will contribute to lower input costs and higher prices for agricultural products. The project civil works will provide job opportunities for the local households, including women, especially during the farming off-season.

32. Improved connectivity and mobility also result in increased social risks, including risks of HIV and sexually transmitted infections, human trafficking, unsafe migration, as well as road crashes. As of 30 November 2016, there were 646 cases of HIV/AIDS in project areas, 59% of whom were women. Over 85% of road crash victims are poor and vulnerable road users, such as pedestrians, motorcycle riders, and bicyclists, many of whom are women. Road user education on road safety is minimal, and high illiteracy rates in rural areas (which are even higher for women than for men) further impede such measures. To address this, the project will include a gender-responsive HTAP and a community-based road safety program.

33. The project is classified as effective gender mainstreaming and a gender action plan has been developed.<sup>17</sup> The project will directly benefit women through (i) access to unskilled employment in civil works with equal pay for work of equal value; (ii) opportunities for meaningful and active participation in consultations; (iii) implementation of a gender-responsive HTAP, which will target 100% of the road workers and the majority of the affected communities, including 50% women; and (iv) implementation of a community-based gender-responsive road safety awareness program. Progress on gender action plan implementation will be monitored and reported to ADB quarterly.

#### **E. Safeguards**

34. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows:

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<sup>16</sup> Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

<sup>17</sup> Gender Action Plan (accessible from the list of linked documents in Appendix 2).

35. **Environment (category B).** An initial environmental examination (IEE) and environmental management plan (EMP), which cover all project facilities, have been prepared.<sup>18</sup> The draft IEE has been disclosed on the ADB website and the final IEE will be disclosed following the DED. Public consultations were carried out to inform the project design and environmental assessment process, and will continue during project implementation. Implementation and construction supervision consultants will provide support for EMP implementation. Environmental complaints will be handled through a grievance redress mechanism (GRM).

36. The project roads generally pass through agricultural land, rice paddy, and plantations, crossing a small number of minor rivers. No protected areas or species have been identified within the project area of influence. The construction of four regional laboratories will be within existing provincial public works and transport department premises. The adverse environmental impacts will primarily occur during construction from dust, noise, vibration, disposal of construction spoils, worker and community health and safety hazards, increased traffic, and disruption of access. The EMP (i) includes mitigation measures during construction and operational phases, including (a) waste management and spoil disposal, (b) materials management, (c) drainage management, (d) temporary transport management, (e) noise and dust control, and (f) worker and public safety; and (ii) identifies responsible parties and budget for implementation and monitoring.

37. **Involuntary resettlement (category C).** Civil works for NR1 and NR6 and weigh stations will be confined to existing road widths. Ancillary works, including installation of new drainage and slope protection, are expected to be within unoccupied areas of the road right of way. There may be temporary impacts and/or disturbances during works implementation, such as breakage of concrete pavements in front of shops as well as disturbance to residence entrances and public facilities. Such impacts will be mitigated and restored through implementation of the EMP. Accordingly, no resettlement-related impacts are expected. Nevertheless, a resettlement framework has been prepared to address potential (but at this stage, unlikely) unanticipated resettlement impacts. Following DEDs, a resettlement due diligence assessment will be conducted to either confirm there are no resettlement impacts or inform the nature of resettlement impacts. If resettlement impacts are deemed probable at that stage, the involuntary resettlement categorization will be revised as needed and a resettlement plan prepared in accordance with the agreed resettlement framework.<sup>19</sup>

38. The General Department of Resettlement will be responsible for preparation, implementation, internal monitoring the resettlement framework and resettlement safeguard requirements. Internal monitoring will be reported in the project quarterly monitoring reports. If a resettlement plan is later required, semiannual external resettlement monitoring reports will be prepared and uploaded to the ADB website. All complaints will be handled through a GRM, and all contractors will be briefed by the Inter-Ministerial Resettlement Committee on the GRM. Furthermore, public consultations have been conducted with various stakeholders comprising government agencies, local authorities, and affected households, and will continue during project implementation. The resettlement framework has been disclosed on the ADB website.

40. **Indigenous peoples (category C).** No indigenous peoples or ethnic minorities will be affected by the project. In the project area, less than 1% of the total project beneficiaries are ethnic minorities (276 Cham and 107 Vietnamese) and are integrated into mainstream society.

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<sup>18</sup> Initial Environmental Examination (accessible from the list of linked documents in Appendix 2).

<sup>19</sup> Resettlement Framework (accessible from the list of linked documents in Appendix 2).

## F. Summary of Risk Assessment and Risk Management Plan

41. The overall project's risk is *moderate*. Risk mitigation measures have been established given that (i) the government's commitment to axle load control may not be sustained beyond the project period, resulting in premature deterioration of the project roads; and (ii) the MPWT will use a new contract modality (hybrid PBC). Substantial risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.<sup>20</sup>

**Table 4: Summary of Risks and Mitigating Measures**

Risks	Mitigation Measures
Changes in government priorities shift resources away from axle load control.	MPWT's capacity in controlling axle load is being strengthened under the ongoing capacity development technical assistance for Institutional Capacity Building in the Road Sector <sup>a</sup> to control overloaded trucks in a sustainable manner, in addition to making the key six weigh stations and two additional mobile teams under the project operational. A strategy (with an action plan) to combat vehicle overloading will also be prepared.
Lack of understanding of principles of hybrid PBCs delays procurement of civil works.	Training for MPWT and contractors on hybrid PBCs will be provided by the detailed engineering design consultant prior to bidding, and as well as by the implementation and construction supervision consultants during implementation.

MPWT = Ministry of Public Works and Transport, PBC = performance-based contract.

<sup>a</sup> ADB. 2017. *Technical Assistance to the Kingdom of Cambodia for Institutional Capacity Building in the Road Sector*. Manila (TA 9300-CAM).

Source: Asian Development Bank.

## IV. ASSURANCES

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

## V. RECOMMENDATION

44. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan in various currencies equivalent to \$70,000,000 to the Kingdom of Cambodia for the Road Network Improvement 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.

Takehiko Nakao  
President

4 September 2017

<sup>20</sup> Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).



**DESIGN AND MONITORING FRAMEWORK**

<b>Impact the Project is Aligned with</b>			
Transport infrastructure to enhance national competitiveness and people's welfare developed. (National Strategic Development Plan 2014–2018). <sup>a</sup>			
<b>Results Chain</b>	<b>Performance Indicators with Targets and Baselines</b>	<b>Data Sources and Reporting Mechanisms</b>	<b>Risks</b>
<b>Outcome</b> Transport efficiency increased on the national road sections along the Greater Mekong Subregion Southern Economic Corridor	By 2023: Average daily vehicle-km increased to 2.252 million for NR1 and 0.995 million for NR6 (2016 baseline: 1.422 million for NR1 and 0.633 million for NR6)	Project benefit monitoring report	Changes in government priorities shift resources away from axle load control.
<b>Outputs</b> 1. More safe and climate-resilient national roads delivered	By 2022: 1a. 97 km of NR1 rehabilitated (2016 baseline: 0)  1b. 50 km of NR6 received periodic maintenance (2016 baseline: 0)  1c. At least 24 km of NR1 and NR6 improved with various climate resilience features (2016 baseline 0) <sup>b</sup>  1d. At least 3.4 km of guardrails and 700 guide posts installed on the project roads (2016 baseline: 0)  1e. At least 20% of unskilled labor days under the civil works contracts undertaken by women (2016 baseline: 0)	1a.–1d. Construction completion report           1e. Project benefit monitoring report	Lack of understanding on the principles of hybrid performance-based contracts delays procurement of civil works. <sup>c</sup>
2. Axle load control enhanced	By 2022 2a. At least six weigh stations refurbished (2016 baseline: 0)  2b. At least two weigh scales and vehicles for two mobile teams provided (2016 baseline: 0)	2a.–2b. Project progress report	
3. Quality assurance for civil works in MPWT strengthened	By 2022: 3a. More than 50% of material quality control testing performed on	3a.–3b. Project progress report	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	<p>government-funded roads (2016 baseline: Not applicable)</p> <p>3b. Quality assurance audit annually conducted on 20% of ongoing road works of MPWT starting in 2020. (2016 baseline: 0 audits conducted)</p>		
4. Road safety enforcement in project communes improved	<p>By: 2022</p> <p>4a. At least 10 safe school zones established (2016 baseline: 0)</p> <p>4b. At least 50,000 residents with increased awareness of traffic safety, of which are 30% are women (2016 baseline: 0)</p>	4a.–4b. Project progress report	

### Key Activities with Milestones

#### 1. More safe and climate-resilient national roads delivered

- 1.1 Award civil works contracts by Q2 2018.
- 1.2 Complete one-digit national roads and provide routine maintenance in Q4 2022.
- 1.3 Implement gender action plan and HIV/AIDS awareness and human trafficking programs by Q3 2022.

#### 2. Axle load control enhanced

- 2.1 Commence procurement of civil works contracts by Q1 2018.
- 2.2 Commence procurement of equipment by Q1 2018.
- 2.3 Provide training for staff in weigh station and mobile teams by Q4 2018.
- 2.4 Operationalize weigh stations and mobile teams to control vehicle overloading by Q2 2019.

#### 3. Quality assurance for civil works in the Ministry of Public Works and Transport strengthened

- 3.1 Undertake detailed design and prepare bidding documents for construction of laboratory buildings by Q1 2018.
- 3.2 Commence procurement of civil works contract for laboratory buildings by Q2 2018.
- 3.3 Complete civil works for laboratories by Q2 2019.
- 3.4 Commence procurement of laboratory equipment by Q2 2018.
- 3.5 Complete installation of equipment and training of staff by Q2 2019.
- 3.6 MPWT approves the standard operating procedure for laboratory network by Q2 2019.
- 3.7 Commence operation of regional laboratories and quality assurance wing in MPWT by Q2 2019.

#### 4. Road safety enforcement in project communes improved

- 4.1 Recruit a consulting firm by Q1 2018.
- 4.2 Carry out community-based road safety program by Q3 2022.
- 4.3 Provide safe school zones along the project roads by Q4 2021.

### Project Management Activities

Start recruitment of project implementation and supervision consultant (advance action): August 2017.

**Inputs**

Asian Development Bank: \$70.00 million (concessional loan from ordinary capital resources)  
Government of Cambodia: \$6.70 million

**Assumptions for Partner Financing**

Not applicable

km = kilometer, MPWT = Ministry of Public Works and Transport, NR = national road, Q = quarter.

<sup>a</sup> Government of Cambodia. 2014. *National Strategic Development Plan 2014–2018*. Phnom Penh.

<sup>b</sup> Includes reinforced embankment slope protection, increased drainage capacity, and additional urban drains and outlets.

<sup>c</sup> Mixture of construction and routine maintenance contract.

Source: Asian Development Bank.

### **LIST OF LINKED DOCUMENTS**

<http://www.adb.org/Documents/RRPs/?id=41123-015-3>

1. Loan Agreement
2. Sector Assessment (Summary): Transport (Road Transport)
3. Project Administration Manual
4. Contribution to the ADB Results Framework
5. Development Coordination
6. Climate Risk Assessment and Management
7. Economic Analysis
8. Financial Analysis
9. Country Economic Indicators
10. Summary Poverty Reduction and Social Strategy
11. Gender Action Plan
12. Initial Environmental Examination
13. Resettlement Framework
14. Risk Assessment and Risk Management Plan

### **Supplementary Document**

15. Output 4: Road Safety Enforcement in Project Communes Improved