TERMS OF REFERENCE FOR CONSULTANTS
Attached Technical Assistance on
Sri Lanka: Expressway Operations Improvement Project

I. Background

1. The Government of Sri Lanka has applied for a loan from the Asian Development Bank (ADB) for the South Asia Subregional Economic Cooperation (SASEC) Port Access Elevated Highway Project. The project aims to alleviate traffic congestion in the densely populated areas and to improve connectivity between potential economic hinterland along the expressway network and both the commercial center and international gateway in Colombo. The Ministry of Higher Education and Highways (MOHEH) is the executing agency, and the Road Development Authority (RDA) is the implementing agency of the project. The proposed technical assistance will be attached to the loan project to further improve operations of expressways.

2. The RDA has expanded its expressway network since the Southern Expressway, Sri Lanka's first expressway, was opened to traffic in 2011. The Colombo–Katunayake Expressway (CKE) has been in operation since 2013, and a part of the Outer Circular Highway (OCH) since 2014. The current toll rate policy and toll collection system have been historically developed on a project-by-project basis so toll rates and collection systems differ among expressways. However, once the rest of the OCH is completed, the three expressways will be connected with each other. The planned new Central Expressway leading to the OCH will also join the network. Furthermore, the New Kelani Bridge, funded and implemented by the Japan International Cooperation Agency, links the Colombo–Katunayake Expressway to the proposed toll elevated highway; the proposed project will become a part of the expressway network. The expansion of the expressway network will require a comprehensive, modern, and consistent toll policy and collection system.

3. **Toll rate management.** The current toll rates consist of fixed fee and variable fee based on project-specific parameters such as recovery period, construction cost, and traffic volume. These parameters are, in principle, kept constant; thus, there is no in-built mechanism to regularly review and update the rates. The current rates and toll policy may be neither reasonable nor sustainable in the emerging landscape because (i) the application of different rates to each expressway would be unfair and even confusing to road users under the network; (ii) the expanding expressway network has yet to be incorporated in the toll rate policy; (iii) parameters used for the calculation do not include augmentation of expressway capacity, vehicle volume, and operation and maintenance costs; (iv) no inflation factor is considered; and (v) the impact of new toll collection technology needs to be fully incorporated. The technical assistance (TA) will assist in developing a new accountable toll rate management tool to address long-term operational sustainability for the expanding expressway network.

4. **Toll collection system.** The toll collection system also varies among the expressways. The CKE uses both manual toll collection (MTC) and electronic toll collection (ETC) with a simple open tolling system but the OCH and the Southern Expressway use only MTC with a closed system. The ETC system adopted in the CKE is very limited with radio-frequency identification (RFID) passive technology, compared with the more advanced system currently in operation in other countries. The RDA thus decided to adopt a new ETC system of multi-lane free flow for the proposed SASEC Port Access Elevated Highway Project, which will be expanded to other expressways as a national ETC system architecture. Although the operation and maintenance of the system are basically outsourced through a service agreement, this would still require policy-level initiatives and institution-level human resource development. The TA will thus support (i) preparation of an action plan to create an enabling environment for the ETC system, (ii)

preparation of an information technology (IT)-related organizational structure and identification of required human resources in the RDA, and (iii) training of staff of the new IT section to efficiently manage the system. The TA will also assist in enhancing expressway management capacity by obtaining key operational parameters to be secured by the newly introduced electronic toll collection system.

II. Scope of Services

5. The TA will have two components: (i) improvement of toll rate management, and (ii) capacity enhancement for the implementation of ETC.

A. Component 1 (improvement of toll rate management)

6. A firm (or a joint venture) will be recruited to carry out component 1 (TA Output 1).

7. The consultants under the firm shall provide the following services for TA Output 1 in consultation with RDA officials:

(i) review existing toll policies and best practices of the toll rate policy in other countries;
(ii) prepare a fair and sustainable toll policy model with due consideration of cost recovery, sustainability, and accountability; and
(iii) prepare a toll rate policy to be applied to the expressway network with a toll rate review framework. All parameters to be considered for the toll rate settings and its regular review shall be clearly identified.

B. Component 2 (capacity enhancement for the implementation of ETC)

8. Individual consultants shall provide the following services for TA Output 2 (action plan to create enabling policy environment) in consultation with RDA officials:

(i) identify remaining policy bottlenecks to implement and enforce the new toll collection system;
(ii) based on the bottlenecks identified in the above, prepare prerequisite and mid-term action plans to create an enabling policy environment; and
(iii) advise contingency and/or transition plans toward full implementation and enforcement of the toll collection system.

9. Individual consultants shall provide the following services for TA Output 3 (preparation of the organization structure and human resources plan for the IT division) in consultation with the RDA officials:

(i) assess the current IT capacity of the RDA to manage and operate the new toll collection system and leverage the system for effective expressway management;
(ii) propose an appropriate structure of IT division in due consideration of effective operation and management capacity of the toll collection system as well as utilization of the collected data from the toll collection system for expressway management; and
(iii) prepare staffing and qualification requirements for the proposed IT division.

10. Individual consultants shall provide the following services for TA Output 4 (provision of training for IT division staff) in consultation with RDA officials:

(i) assess the capacity of the IT division staff, and prepare the training program required; and
(ii) provide IT training to the IT division staff to operate, manage, and fully utilize the toll collection system.

11. Individual consultants shall provide the following services for TA Output 5 (enhancement of expressway management capacity) in consultation with RDA officials:

(i) identify necessary financial and operational parameters to be obtained from the new toll collection system;
(ii) propose the parameters to be used for design specifications for procurement of the toll collection system; and
(iii) provide the RDA with management support to prepare (i) an expressway operation and management plan including toll rate revision; (ii) a traffic management plan; (iii) road safety; and (iv) safeguards, by leveraging data and information obtained by the toll collection system.

III. Deliverables

12. The consultants shall prepare reports for TA Output 1 as follows:

(i) **Interim report.** The consultants shall analyze the existing toll rate policy and identify critical issues of the current toll rate when applying it to the expressway network. The consultants shall also present several good practices of toll rate policy in other countries. Fair and sustainable toll policy models in due consideration of cost recovery, sustainability, and accountability need to be included in the interim report.
(ii) **Final report.** The consultants shall consolidate all activities for TA Output 1, its assessment and findings, and recommendations. The consultants shall prepare a toll rate policy to be applied to the expressway network with a toll rate review framework. All parameters to be considered for the toll rate settings and its regular review shall be clearly identified and incorporated into the guidelines.

IV. Input Requirements

13. **TA Output 1.** The assignment for TA Output 1 will be for 6 months and is expected to commence in April 2019 and end in October 2019. A total of 4 person-month inputs of international experts and 4.5 person-month inputs of a national expert will need to be provided as in the table.

14. Quality- and cost-based selection method with a quality:cost ratio of 90:10 and biodata technical proposals shall be used for this recruitment. Output-based contracts with reimbursable items based on actual expenses will be used.

15. **TA Outputs 2–5.** The assignments for TA Outputs 2–5 will be carried out by individual consultants. A total of 6 person-month inputs of international experts and 36 person-month inputs of the national expert will need to be provided as in the table.

Staffing Requirements, Responsibilities, and Qualifications

Experts	PM	Responsibilities	Qualification Requirements
TA Output 1			
Toll rate expert/team leader (international)	2	- Manage overall team work quality - Assess the existing toll policy, and collect good practices of toll policies in other countries - Identify parameters to be used for a new toll rate policy - Prepare and finalize toll rate policy guidelines and propose a reasonable review framework	- Postgraduate degree in public policy management, economics, transport management, engineering or equivalent - Minimum 15 years professional experience - Minimum 5 years experience in toll settings, and/or expressway operation and management - Familiarity with expressway toll structure and policy - Working experience in developing countries is preferred
Financial management expert (international)	2	- Prepare fair, sustainable, and accountable toll policy models, and compare the models to use for the Sri Lanka expressway network - Prepare and analyze long-term sustainability of the toll policy model with reasonable assumptions to review toll rates	- Postgraduate degree in business, finance, accounting, public policy or equivalent - Minimum 15 years professional experience - Minimum 5 years experience in toll or fare settings, and/or revenue generating infrastructure operation and management - Familiarity with expressway toll structure and financing model - Working experience in developing countries is preferred
Expressway management expert (national)	4.5	- Support international experts to prepare the toll policy models and guidelines - Collect necessary information, data, and institutional and policy constraints as important inputs - Coordinate with the RDA all activities concerned	- Bachelor's degree in engineering, transport economics, finance, or equivalent Postgraduate degree in these fields is preferred - Minimum 10 years professional experience - Minimum 5 years experience in expressway operation and management and/or revenue-generating infrastructure operation and management - Familiarity with expressway toll structure, toll financing model, or SOE management is an advantage
TA Output 2			
ETC policy expert (international)	2	- Identify remaining policy bottlenecks to implement and enforce the new ETC - Prepare prerequisite and mid-term action plans to create an enabling policy environment - Advise a contingency or transition plan toward full implementation and enforcement of ETC	- Postgraduate degree in information technology, or equivalent - Minimum 12 years professional experience - Minimum 5 years experience in ETC system development, installation, and/or operation - Familiarity with enabling policy environment to introduce the ETC system - Working experience in developing countries is preferred
TA Output 3			
ETC institutional expert (international)	2	- Assess IT capacity of the RDA to operate and manage ETC - Propose an appropriate structure of IT division in consideration of the effective operation and management capacity of the ETC system as well as utilization of the collected data from the ETC for expressway management	- Postgraduate degree in information technology, or equivalent - Minimum 12 years professional experience - Minimum 5 years experience in ETC operation and management - Familiarity with institutional settings and requirements for IT-related organization - Working experience in information management system is an advantage - Working experience in developing countries is preferred

Experts	PM	Responsibilities	Qualification Requirements
		- Prepare staffing and qualification requirements for the proposed IT division	
TA Output 4			
IT expert (international)	1	- Assess the capacity of the IT division staff - Prepare the training program required for operation and management of the ETC system	- Postgraduate degree in information technology, or equivalent - Minimum 12 years professional experience - Minimum 5 years experience in IT training and capacity development - Familiarity with ETC system and/or infrastructure management would be preferred - Working experience in developing countries is preferred
IT specialist (national)	12	- Provide IT training to the IT division staff to operate, manage, and fully utilize the toll collection system	- Bachelor degree in information technology, or equivalent - Minimum 6 years professional experience - Minimum 3 years experience in IT training and capacity development - Familiarity with ETC system and/or infrastructure management would be preferred - Working experience in/with the public sector is an advantage
TA Output 5			
Expressway management expert	1	- Identify necessary financial and operational parameters for effective expressway management to be obtained from the new toll collection system - Propose the parameters to be used for design specifications for procurement of the toll collection system	- Postgraduate degree in public policy management, business, economics, transport management, engineering, or equivalent - Minimum 15 years professional experience - Minimum 5 years experience in toll settings, and/or expressway operation and management - Familiarity with organization management and/or management information system - Working experience in developing countries is preferred
Transport planner, road management specialist, and road safety specialist (national)	15 (12, 6 and 6)	- Provide the RDA with management support to prepare (i) expressway operation and management plan including toll rate revision; (ii) traffic management plan; and (iii) road safety, by leveraging data and information obtained by the toll collection system	- Bachelor degree in relevant fields (economics, public policy, civil engineering, environment, etc.) - Minimum 10 years professional experience - Minimum 5 years experience in the relevant fields - Familiarity with transport management would be preferred - Working experience in/with the public sector is an advantage

ETC = electronic toll collection, IT = information technology, PM = person-months, RDA = Road Development Authority.
Source: Asian Development Bank.

V. Counterpart Services and Facilities

16. The RDA shall provide all the necessary data/reports as available within the RDA. The RDA shall also provide the consultants with office space with office furniture, and the necessary counterpart officials.