

**THE PROJECT FOR IMPROVEMENT
OF PUBLIC BUS OPERATION
IN PHNOM PENH**

PROJECT COMPLETION REPORT

SEPTEMBER 2022

Japan International Cooperation Agency (JICA)

International Development Center of Japan Inc.

Oriental Consultants Global Co., Ltd.

Katahira & Engineers International

Pacific Consultants Co., Ltd.

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TECHNICAL PRODUCT

- TECHNICAL PRODUCT 1: MANUAL ON BUS OPERATION AND MANAGEMENT SYSTEM
- TECHNICAL PRODUCT 2: CBA BUS MAINTENANCE MANUAL AND CBA BUS REPAIR MANUAL
- TECHNICAL PRODUCT 3: DRIVERS MANUAL
- TECHNICAL PRODUCT 4: DRAFT SUB DECREE OF ESTABLISHMENT OF CITY BUS COMPANY
- TECHNICAL PRODUCT 5: MOBILITY MANAGEMENT GUIDEBOOK, GUIDEBOOK ON PUBLIC TRANSPORT PRIORITY MEASURES AND BUS FACILITY PLANNING GUIDEBOOK

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Abbreviation

ADB	Asian Development Bank
BOMS	Bus Operation and Management System
C/P	Counterpart
CBA	City Bus Authority
DPWT/PPCA	Department of Public Works and Transport/ Phnom Penh Capital Authority
GOC	Government of Cambodia
GOJ	Government of Japan
GPS	Global Positioning System
GTFS	General Transit Feed Specification
ICT	Information and Communication Technology
IDCJ	International Development Center of Japan Inc.
JCC	Joint Coordinating Committee
JICA	Japan International Cooperation Agency
KEI	Katahira & Engineers International
KPI	Key Performance Index
M/P	Master Plan
MEF	Ministry of Economy and Finance
MM	Mobility Management
MPWT	Ministry of Public Works and Transport
NSDP	National Strategic Development Plan
OCG	Oriental Consultants Global Co., Ltd.
OJT	On the Job Training
OS	Operation System
PCKK	Pacific Consultants Co., LTD.
PDM	Project Design Matrix
PO	Plan of Operation
PPCA	Phnom Penh Capital Administration
RD (R/D)	Record of Discussion
RHS	Ride Hailing Service
SNS	Social Networking Service
UPS	Uninterruptible Power Supply

CHAPTER 1. INTRODUCTION

1.1 Outline of the Project

1.1.1 Background of the Project

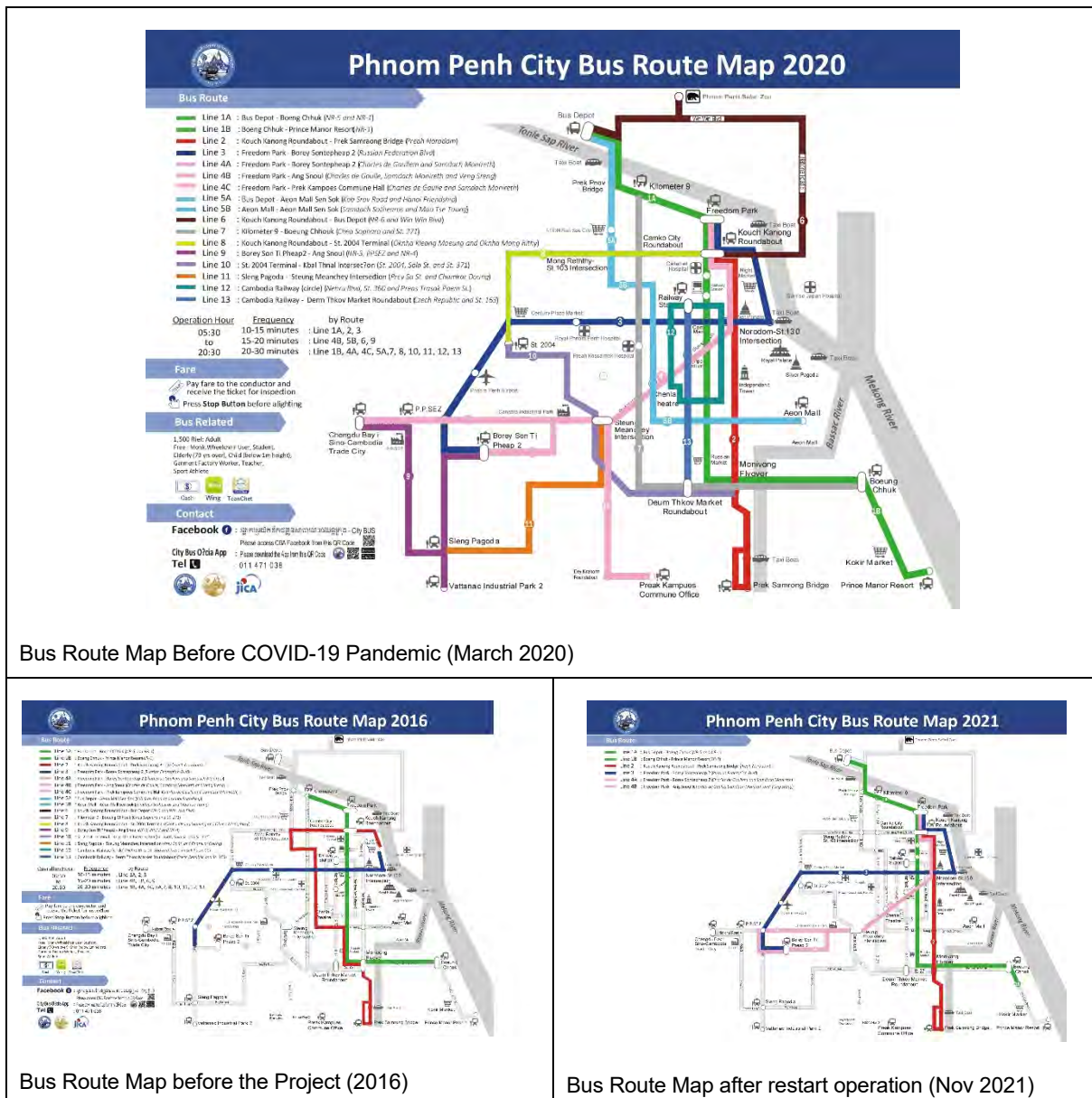
Phnom Penh, Cambodia's capital city, is the political and economic center of Cambodia with a population of 1.25 million (2012). Due to recent economic development, the number of registered vehicles increased from 62,000 in 2000 to 365,000 in 2015. As a result, traffic congestion is becoming more serious as the travel speed falls from 20 km/h in 2001 to below 15 km/h in 2012. Traffic accidents also continue to increase, and the city seriously needs drastic traffic improvement measures.

In response to the official request of Cambodia, JICA implemented 'the Project for Comprehensive Urban Transport Plan in Phnom Penh City (2014 M/P)' in 2014. This 2014 M/P formulates a road map for the development of public transport system, road network and traffic management in Phnom Penh, accommodating the projected future population of 2.87 million in 2035. As part of public transport system proposed in 2014 M/P, introduction of the bus transport system was considered as the most priority project to ease the traffic congestion in the city. Following this proposal, JICA conducted one month trial for the bus operation in the designated route in the city in 2014.

Following the good result of the trial and proposals made in 2014 M/P, PPCA established CBA and has purchased 57 used bus fleets and expanded the bus operation which ran 3 bus routes. Furthermore, PPCA also planned to expand the bus operation to 10 bus routes, following the bus transport system proposed in 2014 M/P. Development of safety and convenient public bus routes, once accomplished, will contribute to easing traffic congestion and improving urban mobility and environment in the city.

To address these urban transport issues, JICA conducted 'the Preparatory Survey for the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh (2016 Preparatory Survey)' in 2016. Following the result of 2016 Preparatory Survey, the GOJ, through Japanese Grant Aid scheme, committed to providing bus fleets to PPCA and CBA, to be utilized for expansion of the bus routes as planned. However, CBA is still a new organization, established in 2014, and the organization structure is fragile and the service level of bus operation, in terms of travel speed and time scheduling, is still low. Bus operation and management capacity, particularly that in CBA, needs to be improved to ensure proper operation and management of the bus fleets procured under Japanese Grant Aid scheme. Therefore, GOC requested GOJ to implement technical assistance 'the Project for

Improvement of Public Bus Operation in Phnom Penh (the Project or PiBO) in line with the said Grant Aid project.



Source: JICA Expert Team

Figure 1.1.1 Project Location Map

1.1.2 Objectives of the Project

The Project aims to strengthen the system for improving public bus services in Phnom Penh by: i) improving the bus operational management capacity of CBA; ii) improving the inspection and maintenance capacity of bus fleet of CBA; iii) improving the safety driving and human resource development system of CBA; iv) improving bus business management capacity; and v) improving the capacity of PPCA and DPWT to formulate bus priority measures, and through these activities contributes to promoting public transport ridership in the Phnom Penh.

1.1.3 Project Area

Phnom Penh Capital (especially in public bus operation areas by CBA)

1.2 Project Design Matrix

1.2.1 PDM version 0 and version 1.0

Prior to commencement of the Project, the Detailed Planning Survey was conducted in October 2016, to scope the Project. The Project Design Matrix (PDM) (PDM ver. 0), which demonstrates the goal, purpose, outputs and activities of the Project, has been discussed and agreed, involving key stakeholders of PPCA and Ministry of Public Works and Transport (MPWT), during the Detailed Planning Survey for the Project.

In the initial stage of the Project, existing situation survey and training needs survey were conducted by means of interviewing to the concerned agencies. The result of these surveys suggested key project outputs proposed to remain same, focusing the following five areas; “Output 1: Improvement of bus operation capacity of CBA”, “Output 2: Improvement of bus vehicle inspection and maintenance capacity of CBA, “Output 3: Establishment of training system of drivers/conductors and management system of safety driving and labor management of CBA, “Output 4: Improvement of business management capacity of CBA”, and “Output 5: Improvement of capacity on policy planning for the public transport priority measures of CBA and DPWT/PPCA”. Based on the interviews and existing situation survey, PDM was revised from PDM ver.0 to PDM ver.1 incorporating with numerical monitoring indexes.

On 9th May, 2017, the first Joint Coordinating Committee (JCC) meeting was held to discuss the PDM and the members of the JCC agreed with amendment of the PDM ver. 1. The amended PDM ver.1 shows as follows.

Table 1.2.1 PDM Ver.1 agreed in 1st JCC Meeting

<p><u>Overall Goal</u> Ridership on the public transport (city bus) in Phnom Penh is promoted.</p>
<p><u>Project Purpose</u> Bus operation management capacity in Phnom Penh is improved.</p>
<p><u>Output</u></p> <ol style="list-style-type: none"> 1. Bus operation capacity of CBA is improved. 2. Maintenance and inspection capacity on bus fleets of CBA is improved. 3. Training system of bus drivers and conductors, drivers' management system for safe driving and labor management system are established in CBA. 4. CBA's business management capacity is improved. 5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved.
<p><u>Activities</u></p> <ol style="list-style-type: none"> 1-1. To implement training for bus operation 1-2. To develop bus operation manual and implement OJT for practice 1-3. To establish bus operation system with GPS 1-4. To analyze bus operation data to review the existing operation plan 1-5. To formulate education and training plan for reliable and safety operation (examination of necessary measures) 1-6. To implement OJT on the reliable and safety operation

1-7	To monitor and manage implementation of Action Plan developed under 'Preparatory Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh'
2.1	To develop bus vehicle inspection and maintenance manual
2.2	To implement training for bus vehicle inspection/ maintenance technologies and OJT for practice
2.3	To monitor and manage inspection and maintenance works
3.1	To develop driver training manual (driving technology including theory and practice)
3.2	To develop work manual for drivers and conductors
3.3	To implement trainings for trainers of drivers
3.4	To implement series of trainings for both existing and newly-employed drivers by trainers
3.5	To implement trainings for trainer of conductors
3.6	To implement series of trainings for conductors by trainers
3.7	To establish monitoring system for drivers and conductors by camera installed inside bus and drive recorders etc., and implement OJT for practice
4.1	To implement training for financial accounting and management accounting
4.2	To develop manual for existing fare and ticket management
4.3	To manage operation cost/expenses and passenger data
4.4	To implement market research in bus operation area
4.5	To formulate annual business plan including budget and accounting management
4.6	To review and examine the bus fare system and subsidy policy
4.7	To provide technical support on introduction of smart card system for fare collection based on Japanese experience
5.1	To implement training for traffic management
5.2	To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/ signal
5.3	To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes
5.4	To implement pilot project and social experiments for the proposed traffic management measures
5.5	To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc.
5.6	To introduce bus information and operation management system
5.7	To implement training for mobility management to promote modal shift
5.8	To implement pilot projects for mobility management
<u>Counterpart Organization:</u> CBA, DPWT/PPCA, PPCA	
<u>Relevant Organization:</u> MEF, Traffic Police	
<u>Project Period:</u> From January 2017 to December 2020 (48 months)	

1.2.2 Revision of PDM

(1) PDM 1.1

The Project was designed under the precondition that 80 buses would be procured by the Japanese Grant Aid. And the Project started with the assumption that the first batch of 30 buses would be delivered to the Cambodia by December 2017 and the second and last batch of 50 buses by February 2018. However, the consultant service contract for the bus procurement project was delayed, resulting in an 8- to 10-month delay in the delivery of the buses from the original schedule.

Due to this delay, the first periodic inspection, which is part of the project activities, would take place in December 2020, the last month of the project period, and the project activities

would not be fully effective; therefore, the Cambodian and Japanese sides agreed to extend the project period for three months up to April 2021.

(2) PDM 1.2

The PPCA and CBA's bus services were completely suspended starting on March 26, 2020, to prevent the spread of COVID-19, which began in early 2020. During the period of suspension of bus operation, CBA's bus service was limited to essential workers such as medical personnel and those travelers entering the country who need to move from the airport to designated hotels. During these periods, CBA actively prepared for the resumption of bus operations by providing training on how to prevent the spread of infection, introducing protection shields on buses, and introducing awareness campaign to prevent the spread of infection of COVID-19.

In October 2020, the PPCA and CBA began preparations for the resumption of bus operations, and on the other hand, the JICA Expert Team was still unable to carry out activities in Cambodia since March 2020. In view of these circumstances, discussions were held between PPCA and JICA, and it was agreed to extend the project period by additional 11 months, which was reflected and revised in PDM 1.2. The revision of PDM 1.2 is limited to the extension of the project period and does not change the activities of the Project.

(3) PDM 1.3

The suspension of CBA bus service to prevent the spread of COVID-19 infection was in place since March 26, 2020. Then, in November 2021, the Cambodian government officially announced the "New Normal" policy, and at the same time, it was officially decided that the CBA bus service resumes on November 2, 2021. This resumption of service was limited to four routes (Line 1A, Line 2, Line 3, and Line 4A/B) with 60 buses. In appreciation of the efforts of the PPCA and CBA in actively promoting the resumption of operations, and considering that the JICA Experts' activities during the suspension period were carried out from outside Cambodia, the PPCA and JICA agreed to extend the project period by additional 6 months, up to August 2022. The revision of PDM 1.3 is only limited to the extension of the project period, with no changes to the project activities.

Table 1.2.2 Summary of Revision of PDM

PDM version	Contents of Revision	Date of Agreement
0	-	October 12, 2016
1.0	Setting numerical indicators to PDM version 0	May 17, 2017
1.1	Extension of the Project period (by 3 months)	April 2020
1.2	Extension of the Project period (by 11 additional months)	October 2020
1.3	Extension of the Project period (by 6 additional months)	November 2021

1.3 Project Implementation Period

As agreed upon by the PPCA and JICA in the Record of Discussion in October 2016, the project period was initially for 4 years (January 2017-December 2020). As mentioned in the previous section, in April 2020, October 2020, and November 2021, the PPCA and JICA

agreed to revise the PDM and extend the project period after discussions and in the occasion of the JCC. The final project period is extended to 5 years and 8 months (68 months), from January 2017 to August 2022.

1.4 Project Implementation Structure and JICA Expert Team

(1) Cambodian Side

A Joint Coordinating Committee (JCC), chaired by the PPCA Deputy Governor, was established for monitoring the performance and providing direction of the Project; the JCC made recommendations to the relevant agencies and provided various coordination to ensure the smooth implementation of project activities.

Table 1.4.1 Cambodian Members of JCC

S/N	Position	Profession/Institution/ Organization	Duration of Engagement
1	Project Director	Deputy Governor, PPCA	Jan 2017 – Aug 2022
2	Deputy Project Director	Deputy Director, DPWT/PPCA	Ditto
3	Project Manager	Governor, CBA	Ditto
4	Member	Director, Direction of Urban Management, PPCA	Ditto
5	Member	Advisor and other management staffs, DPWT/PPCA	Ditto
6	Member	Deputy Governors and other management staffs, CBA	Ditto
7	Member	Director, Department of International Cooperation, MEF	Ditto
8	Member	Department of Public Transport, MPWT	Ditto
9	Observer	Khan Authorities, Traffic Police, other relevant Departments of PPCA	Ditto

Source: JICA Expert Team

(2) JICA Expert Team

The JICA Expert Team mainly provided CBA members and staff with various technical transfers to improve the capacity of CBA regarding the improvement of bus operation and management, bus fleet inspection and maintenance, safety driving and human resource development, and bus business management capacity. The Expert Team also engaged DPWT/PPCA to improve the planning capacity for public transport priority measures.

The Expert Team consists of 21 Experts from the International Development Center of Japan (IDCJ), Oriental Consultants Global (OCG), Katahira & Engineers International (KEI) and Pacific Consultants (PCKK) as shown in the following table.

Table 1.4.2 Members of JICA Expert Team

Assignment	Name	Affiliation
Chief Advisor/ Public Transport Policy	Kiminari Takahashi	IDCJ
Deputy Chief Advisor/ Public Transport Policy (2)	Dr. Kov Monyrath	OCG
Bus Operation Planning	Frits Olyslagers	IDCJ
Bus Vehicle Maintenance	Koji Uzawa	KEI
Bus Driver Training	Minoru Murata	KEI
Business Management	Natsuki Shimegi	PCKK
Traffic Control and Safety	Shuichi Yashiro	KEI
Bus Facility Planning	Hiroyuki Yamashita / Dr. Sungjoon Hong	PCKK
IT System/Data Management	Takayoshi Ito	OCG
Mobility Management	Toshiaki Takeda	PCKK
Stakeholder Management	Mihoko Ogasawara	IDCJ
Monitoring and Evaluation	Kayoko Miyao	IDCJ
Bus Operator Advisory Group (1)	Masaru Yajima	IDCJ
Bus Operator Advisory Group (2)	Kunihiko Sakamoto	IDCJ
Preparatory Survey Review (Team Leader)	Tomohiko Nakamura	KEI
Preparatory Survey Review (Bus Specification and Equipment)	Kiyohito Kobayashi	KEI
Preparatory Survey Review (Bus procurement plan and cost estimation)	Hideaki Baba	KEI
Bus Facility Planning (2)	Takayuki Yoshimi	PCKK
Mobility Management (2)	Yuki Takada	PCKK
Mobility Management (3)	Masaya Nakano	PCKK

Source: JICA Expert Team

Assignment schedule for each expert is shown in the following figures. The total of 141.37 man-months, of which 104.92 man-months are for the work in Cambodia and 36.45 man-months are for the work outside of Cambodia.

1.5 Project Implementation Schedule

The Plan of Operation (PO) is prepared, considering planned and actual activities completed with their schedule.

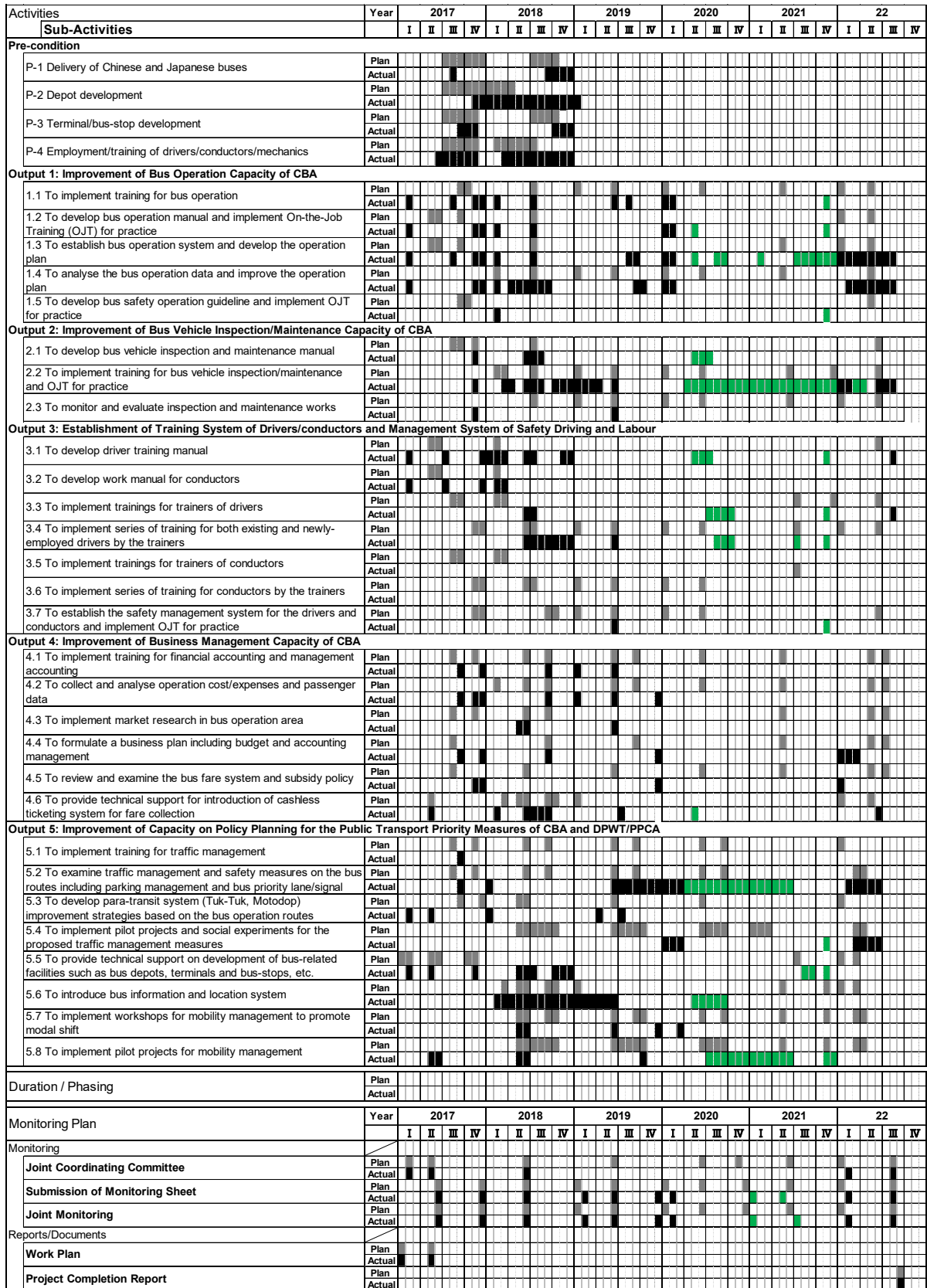
Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Dated Aug 2022

Inputs	Year	2017				2018				2019				2020				2021				22				
		I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	
Expert																										
1. Chief Advisor/ Public Transport Policy	Plan																									
	Actual																									
2. Deputy Chief Advisor/ Public Transport Policy(2)	Plan																									
	Actual																									
3. Bus Operation Planning	Plan																									
	Actual																									
4. Bus Vehicle Maintenance	Plan																									
	Actual																									
5. Bus Driver Training	Plan																									
	Actual																									
6. Business Management	Plan																									
	Actual																									
7. Traffic Control and Safety	Plan																									
	Actual																									
8. Bus Facility Planning	Plan																									
	Actual																									
9. IT System/Data Management	Plan																									
	Actual																									
10. Mobility Management	Plan																									
	Actual																									
11. Stakeholder Management	Plan																									
	Actual																									
12. Monitoring and Evaluation	Plan																									
	Actual																									
13. Bus Operator Advisory Group	Plan																									
	Actual																									
14. Preparatory Survey Review (Team Leader)	Plan																									
	Actual																									
15. Preparatory Survey Review (Bus Specification and Equipment)	Plan																									
	Actual																									
Equipment																										
1. Bus Information and Location System	Plan																									
	Actual																									
2. Bus Safety Management System	Plan																									
	Actual																									
3. Passenger Monitoring System	Plan																									
	Actual																									
4. Alcohol detector	Plan																									
	Actual																									
Training in Japan/Third country																										
Japan (2019/20) and Third Country (2017/19)	Plan																									
	Actual																									

Note: Bar chart in green color shows tasks done outside of Cambodia.

Figure 1.5.1 Plan of Operation (PO) 1/2



Legend: ■ Work in Cambodia ■ Work in Japan

Note: Bar chart in green color shows tasks done outside of Cambodia.

Figure 1.5.2 Plan of Operation (PO) 2/2

2.1 Inputs to the Project

2.1.1 Input by Japanese side

(1) JICA Expert Team

As shown in Table 1.4.2, a total of 21 experts were assigned by the Japanese side with a total of 20 professions. The total man-months amounted to 141.37 MM (man-months) during the implementation of the Project. The Experts were dispatched in a wide range of professions, including public transportation policy, bus operation planning, bus vehicle maintenance, bus driver training, and business management, etc.

It should be noted that a Project Management Group consisting of "Chief Advisor /Public Transport Policy" and "Deputy Chief Advisor/Public Transport Policy (2)" was set up, and a Cambodian national was assigned as the Deputy Chief Advisor, which contributed to more effective and smooth project implementation, particularly that during the period when foreign experts remotely worked due to the COVID-19 pandemic. In addition, the consultant who conducted "the Preparatory Survey on the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh" withdrew from the bus procurement work, so three Experts were added in the Expert Team to review the Preparatory Survey and to support the procurement of 80 Japanese buses under Japanese Grant Aid.

(2) Procurement of Equipment

As for equipment with a unit cost of 50,000 yen or more, office equipment such as PCs and multi-purpose photo copier, and the Bus Operation Management System (totaling approximately 25 million yen) were procured under the Project. In addition, three wearable cameras (totaling approximately 170,000 yen) were additionally procured for the remote technical assistance under COVID-19 pandemic.

The list of equipment and the condition of the equipment are as shown in ANNEX 1, and all equipment is available and none of the equipment is underutilized. The following is a list of materials and equipment from the Japanese side, all of which were handed over to the Cambodian side during the project period.

- 1) Laptop PCs
- 2) Multi-purpose Photo Copier
- 3) Projector
- 4) Inkjet Printer
- 5) Bus Operation and Management System (BOMS)
- 6) Hypochlorous acid generator
- 7) Smart Glass
- 8) Router for optical communication control

(3) Costs borne by the Japanese side

The Japanese side covered local expenses for project activities, which amounted to about 69 million yen. Excluding the amount for equipment, the total cost of project activities was about 44 million yen. The project activity expenses were allocated to cover local staff's salaries (secretary/research assistant), consumables, transportation and allowances, communication expenses, vehicle-related expenses, training in third countries, and so on.

(4) Training in Japan and third countries

A total of 24 Cambodian counterparts and staff were selected to participate in training in Japan or in the third country. The training in Japan was carried out once during the project period, and the training in the third country was carried out three times, in Singapore, Malaysia, Vietnam, and Thailand. Through each training course, the participants learned about public transport policy, bus and other public transport operation and management, fleet maintenance management, safety management, and business management practiced in each host country. An outline of each training program, including the participants, is presented in Section 2.3.

2.1.2 Input by Cambodian Side

2.2 Overall Project Progress

(1) Counterparts

A total of three Cambodian counterparts were appointed as Project Director, Deputy Project Director, and Project Manager, and the management of each project implementing agency was appointed as a counterpart. All have been engaged in project activities by means of meetings, technical workshops and OJT. The details of the counterparts are as follows.

Table 2.2.1 List of Counterparts

S/N	Member	Title/ Organization	Name	Duration of Engagement
1	Project Director	Deputy Governor, PPCA	H.E Keut Chhe	Jan 2017 – Aug 2022
2	Deputy Project Director	Deputy Director, DPWT/PPCA	Chu Kimtry	Ditto
3	Project Manager	Governor, CBA	Ean Sokhim	Ditto
4	Counterpart	Director of Urban Management and other management staffs		Ditto
5	Counterpart	Advisor and other management staffs, DPWT/PPCA		Ditto
6	Counterpart	Deputy Governors and other management staffs, CBA		Ditto

Source: JICA Expert Team

(2) Provision of Facilities

Initially, the Cambodian side provided office space and office equipment for the Project located in the DPWT Phnom Penh office. In January 2019, the construction of CBA depot, maintenance workshop and administration building were completed, and the Expert Team accordingly moved to work in the depot and administration building.

(3) Costs borne by the Cambodian side

The Cambodian side, in accordance with the Grand Agreement on the Grant Aid Project “the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh”, completed (i) construction of a 4-hectare bus depot, maintenance workshop, and administration building; (ii) construction of terminals at the beginning and end of bus routes; (iii) construction of approximately 850 bus stops and bus shelters; (iv) recruitment and employment of staffs, including drivers, and (v) provision of costs for bus operation and maintenance after the buses are in service, and a total 2.32 billion yen was funded between 2017 and 2021. Details are included in ANNEX 1.

Table 2.2.2 Costs borne by the Cambodian side

Unit: Million Yen

	Item	2017	2018	2019	2020	2021	
1	Construction of a 4-hectare bus depot, maintenance workshop, and administration building	566.4	141.6	0.0	0.0	0.0	
2	Land acquisition cost for Bus depot	0.0	0.0	0.0	0.0	0.0	Procured by PPCA
3	Construction of terminals	0.0	0.0	22.0	5.8	14.8	
4	Construction of approximately 850 bus stops and bus shelters;	15.3	0.1	0.0	0.2	0.2	
5	Recruitment and employment of staff, including drivers	105.1	198.4	287.3	245.4	241.6	
6	Provision of costs for bus operation and maintenance after the buses are in service	84.3	149.7	79.4	110.5	53.8	

Source: CBA

2.3 Project Activities

2.3.1 Activities related to the overall project

(1) JCC: Joint Coordination Committee

In order to involve a wide range of counterparts and confirm the project direction and approaches as well as seek for advice for project implementation, a series of meetings have been organized in appropriate timing where counterparts exchanged opinions on the plans and activities of the Project and shared them among concerned agencies. During the project period six-time JCC meetings were held as follows.

The 4th and 5th JCCs were held by online to prevent the spread of COVID-19 infection.

Table 2.3.1 Joint Coordinating Committee

Date	Meeting	Venue
8 Feb 2017	Kick-off Meeting	PPCA Meeting Room
9 May 2017	1st Joint Coordinating Committee	PPCA Meeting Room
8 Jun 2018	2nd Joint Coordinating Committee	PPCA Meeting Room
4 Jul 2019	3rd Joint Coordinating Committee	PPCA Meeting Room
16 Jul 2021	4th Joint Coordinating Committee	Online
3 Feb 2022	5th Joint Coordinating Committee	Online
9 Aug 2022	6th Joint Coordinating Committee	PPCA Meeting Room/ Online

Source: JICA Expert Team

A summary of each meeting is described in the following sections.

1) Kick-off Meeting

During the kick-off meeting, the Cambodian side and the Expert Team reviewed the contents of the R/D including the PDM ver.0 signed in October 2016. Furthermore, the Cambodian side and the Expert Team discussed and agreed to modify the PDM ver.0 based on the approach/ methodology of the Project as presented in the draft workplan. Besides, the JCC members were approved by the Cambodian side.

As for the project operational issues, it was confirmed that the existing bus depot cannot accommodate 80 buses to be procured under Japanese Grant Aid and that the PPCA has plans to construct a bus terminal within the capital city.

Summary of Kick-off Meeting

Date: From 9.00 to 11.40 on 8th February 2017

Venue: Meeting room of PPCA

Attendants: 18 persons from PPCA Deputy Governor (Chairperson), CBA, PPCA, DPWT/PPCA, MEF, JICA Cambodia Office, JICA Expert Team

Agenda: 1) Project Outline
2) Project approach and methodology
3) Work implementation plan (Draft Work Plan)

2) 1st JCC

At the 1st JCC, the Expert Team reached a consensus with the Cambodian side on the project implementation plan and revised the PDM as PDM ver. 1.0, incorporating with numerical targets of the Project. Furthermore, the Cambodian side and the Expert Team discussed the modal share of public transport to achieve at 2% (70,000 bus passengers per day), which becomes the numerical indicator of the overall goal, in order to reduce traffic congestion in Phnom Penh and at the same time to ensure the sustainability of the CBA's bus business. The participants also shared information and exchanged opinions on the bus route/operation plan and the bus depot construction plan, to ensure the smooth implementation of the Project.

Summary of 1st JCC

- Date: From 9.00 to 11.40 on 9th May 2017
- Venue: Meeting room of PPCA
- Attendants: 31 attendees from PPCA Deputy Governor (Chairperson), CBA, PPCA, DPWT/PPCA, MEF, JICA Cambodia Office, JICA Expert Team
- Agenda: 1) Confirmation of matters arising from the Kick-off meeting and action taken
2) Work Plan (including PDM ver. 1.0)
3) Project progress

3) 2nd JCC

The 2nd JCC presented on the progress of the Project, mainly on the bus route plan and bus priority measures. Among the issues discussed were 1) effective utilization of 80 Japanese buses and bus network planning and bus services, 2) proposals for bus priority measures along Line 4, 3) the importance of mobility management and mobility management programs, and 4) institutional reform of the CBA. As a result of the discussions, the following recommendations were made to the Expert Team.

- Bus route planning should consider urban expansion and further studies are recommended to determine passenger demand.
- PPCA and Khan should work together to improve bus network services, including implementation of pilot projects.
- CBA should monitor the progress to ensure that the bus depot construction schedule is not delayed so that the mechanic training be implemented in September 2018.
- PPCA continues to support the expansion of the bus network and service improvements as a high priority policy of the PPCA.

Summary of 2nd JCC

- Date: From 14:30 to 17.30 on 8th June 2018
- Venue: Meeting room of PPCA
- Attendants: 41 persons from PPCA Deputy Governor (Chairperson), CBA, PPCA, DPWT/PPCA, MEF, Traffic Police, Representative from 11 Khans in Phnom Penh, JICA H.Q., JICA Cambodia office, JICA Expert Team
- Agenda: 1) Confirmation of matters arising from the 1st JCC meeting and action taken
2) Project progress

4) 3rd JCC

In the 3rd JCC, it is mainly discussed the progress of the Project, including measures to achieve the daily passenger target (70,000 pax) by improving public bus services, and the bus priority measures as a pilot project. In particular, for the pilot project, it was

recommended that a working group consisting of the Expert Team, representatives of the CBA, traffic police, and concerned Khans be formed to discuss public transport priority measures along the agreed 5 km section to be targeted for bus priority measures, and then report to PPCA for its approval. It was also confirmed that the PPCA would continue to financially support the operation and management of the bus operation which does not require to change the current organizational structure and fare and subsidy policy.

In addition, a presentation of the Bus Operation Management System (BOMS) and the App-based bus location information system developed by the Project was held prior to the commencement of the 3rd JCC. At the presentation, the media was invited to observe the newly developed system and share information on how it can be widely utilized.

Summary of 3rd JCC

Date: From 9:45 to 12.30 on 4th July 2019

Venue: Meeting room of PPCA

Attendants: 49 persons from PPCA Governor (Chairperson), CBA, PPCA, DPWT/PPCA, MEF, Traffic Police, Representative from 11 Khans in Phnom Penh, Embassy of Japan in Cambodia, JICA H.Q., JICA Cambodia Office, JICA Expert Team

Agenda: 1) Review of previous JCC and Action taken
2) Project progress
3) Draft action plan (Bus priority measures as pilot project)
4) Proposal on enhancement of bus business
5) BOMS and App-based bus location system

5) 4th JCC

Due to the outbreak of COVID-19, CBA suspended all bus services from March 26, 2020. The Expert Team was also substantially unable to work in Cambodia from March 2021 due to travel restrictions, and continued to work remotely from Japan and other countries. Therefore, the 4th JCC, held in July 2021, was the first JCC to be held remotely by online.

In the 4th JCC, it was discussed the following items, which were being undertaken as preparatory work for resumption of bus services, 1) Maintaining employment of staff for the resumption of bus operations, 2) Transportation of essential workers such as medical personnel and those entering Cambodia to move to quarantine hotels, 3) Holding seminars on hygiene and prevention against COVID-19, and 4) Installation of protective shields on drivers' seats, 5) Preparation of PR materials on COVID-19 countermeasures to the public, 6) Procurement of COVID-19 countermeasure equipment and materials, 7) Production of a promotional video to be released when the bus service resumes.

Summary of 4th JCC

Date: From 9:00 to 11.30 on 16th July 2021

Venue: Online meeting

Attendants: 21 persons from PPCA Deputy Governor (Chairperson), CBA, PPCA, DPWT/PPCA, JICA H.Q., JICA Cambodia Office, JICA Expert Team

- Agenda:
- 1) Project progress
 - 2) Bus operation plan and business scheme under COVID-19 pandemic
 - 3) Draft mobility management scheme upon bus service resumption
 - 4) Enhancement of bus fleet management
 - 5) Project duration

6) 5thJCC

In the 5th JCC meeting, the project progress was presented and remaining issues were discussed to be resolved by the end of the Project, such as host cities for the third-country training programs. The CBA bus service resumed on November 2, 2021, but the results of an opinion survey for bus users and non-bus users carried out in December 2021 revealed that there is a strong concern about infection with COVID-19. The survey reaffirmed the importance of PR activities to promote bus use, including the low probability of spreading COVID-19 infection through the use of public transportation. In addition, the institutional change of the CBA to the Public Administrative Enterprise was discussed.

During the discussion, the Cambodian side and JICA made an agreement on the tasks to be completed by the end of the Project, and the Cambodian side requested JICA to dispatch a short-term expert(s) after the end of the Project to assist in the organizational change of CBA and in achieving the project goal that cannot be achieved in this project period.

Summary of 5th JCC

Date: From 9:00 to 12.00 on 3rd February 2022

Venue: Online meeting

Attendants: 23 persons from PPCA Deputy Governor (Chairperson), CBA, PPCA, DPWT/PPCA, JICA H.Q., JICA Cambodia Office, JICA Expert Team

- Agenda:
- 1) Remaining activities towards termination of the Project
 - 2) Proposal on 3rd country training
 - 3) Pilot project (Bus priority signal)
 - 4) Measures taken toward full operation of CBA bus services
 - 5) Conversion of CBA to Public Administrative Enterprise

7) 6th JCC

The final 6th JCC evaluated the project's achievements and level of accomplishment attained during the project period. In particular, the JCC confirmed that, although bus service resumed after the suspension of bus service due to the COVID-19 pandemic, the project target (70,000 pax per day) was not achieved due to the limited number of routes, and furthermore, it was also confirmed that the CBA's bus business is not sustainable because the operating costs are not covered by the fare revenue.

In addition, in order to ensure that the project results would be realized after the project completion, the following issues were discussed and agreed upon with the Cambodian side: 1) Stepwise expansion of bus routes, 2) Continuous implementation of bus fleet inspection and maintenance, driver's employment and training, 3) Implementation of

revenue expansion and cost reduction measures, and 4) Implementation of public transport priority measures and mobility management measures.

Summary of 6th JCC

- Date: From 8:30 to 12.00 on 9th August 2022
- Venue: Meeting room of PPCA / Online
- Attendants: 46 persons from PPCA Deputy Governor (Chairperson), CBA, PPCA, DPWT/PPCA, Representative from 11 Khans in Phnom Penh, JICA H.Q., JICA Cambodia Office, JICA Expert Team
- Agenda: 1) Achievement of the Project
2) Recommendation and lessons learned from the Project

(2) Activities related to COVID-19 Countermeasures

With the outbreak of COVID-19 from the beginning of 2020, CBA's bus service was fully suspended from March 26, 2020, with the resumption of bus operation yet to be determined. In addition, since the short-term travel to Cambodia was banned from March 2021 by JICA, and on-site activities were difficult for the Expert Team, the Project established a system, e.g., assigning a Deputy Chief Advisor in Cambodia and procuring remote-work aid equipment, to support project activities remotely.

In addition, the Project also made preparations for bus service resumption as shown in the table below.

Table 2.3.2 COVID-19 Countermeasures in the Project

Improvement of Bus Operation	Implementation of Hygiene and Prevention Training” for “Zero COVID-19 Infections from Bus Drivers and Passengers Stepwise bus operation plan for resumption of bus service Implementation of resumption of bus service (4 routes, 60 buses)
Maintenance of Bus Fleet	Installation of protection shield in the bus Conducting in-vehicle ventilation tests Conducting Online Vehicle Inspection and Maintenance Training with Smart Glasses Development of inspection and maintenance training videos to prevent COVID-19 infection
Passenger/ Driver safety	Procurement of Hypochlorous Acid Generators and Disinfectants Disinfection of bus fleet Implementation of COVID-19 infection prevention measures (temperature and hand disinfection) Implementation of "Zero COVID-19 Infections from Bus Drivers and Passengers" seminar in collaboration with ILO and WHO Epidemiology Expert Development of a manual for safe bus operation and management to prevent COVID-19 infections Conducted intensive training for safe driving Creation of safe driving training video for prevention of COVID-19 infection
Mobility management	Creation of PR posters and video to promote public transport use under COVID-19 pandemic Utilization of QR code to track passenger movement

<p>Other activities related to countermeasures of COVID-19</p>	<p>Transportation of essential workers and immigrants from airports to quarantine hotels Online survey on use of public transport under COVID-19 pandemic Study on countermeasures of public transport use under COVID-19 pandemic in various countries with preparation of PR brochures</p>
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Source: JICA Expert Team

It should be noted that in May 2020, soon after the bus service was suspended, a COVID-19 infection prevention seminar entitled "Zero COVID-19 Infections from Bus Drivers and Passengers" was held for all CBA staffs in collaboration with ILO and WHO epidemiology experts. At the time of the seminar, there was a lack of information on COVID-19, but by inviting an epidemiological expert to lecture on the mechanism of infection and preventive measures, CBA staff members' understanding of COVID-19 countermeasures was improved. In addition, the seminar was widely covered by the local media, resulting in increased awareness and satisfaction with the CBA bus service.

BOX : JICA PR Department Facebook (posted on 29th June 2020)

The Project for Improvement of Public Bus Operation in Phnom Penh in Cambodia, in collaboration with ILO experts, held a seminar on the prevention of COVID-19 infection for 585 staffs of the Phnom Penh City Bus Authority.

The seminar included an overview of COVID-19, general preventive measures such as hand washing, and preventive measures for bus operations, such as awareness-raising through posters and installation of protection films, which led to a lively discussion among the participants in the seminar. Preventive measures were taken during the seminar, including the use of online meeting tools, social distancing, ventilation, masks, and hand-washing.

In a post-seminar questionnaire, about 95% of the participants responded that they had gained useful knowledge for their works and that they felt comfortable participating in the seminar. In the future, the Project plans to conduct publicity activities for users and residents along the bus route on appropriate bus usage, while receiving advice from ILO epidemiological experts.

The seminar was covered by the local media (Khmer language).

■ Fresh News : <http://freshnewsasia.com/.../160616-2020-05-27-08-26-25.html>

■ Bayon TV : <https://www.facebook.com/1426087464349805/posts/2501315153493692/?sfnsn=mo&d=n&vh=e>

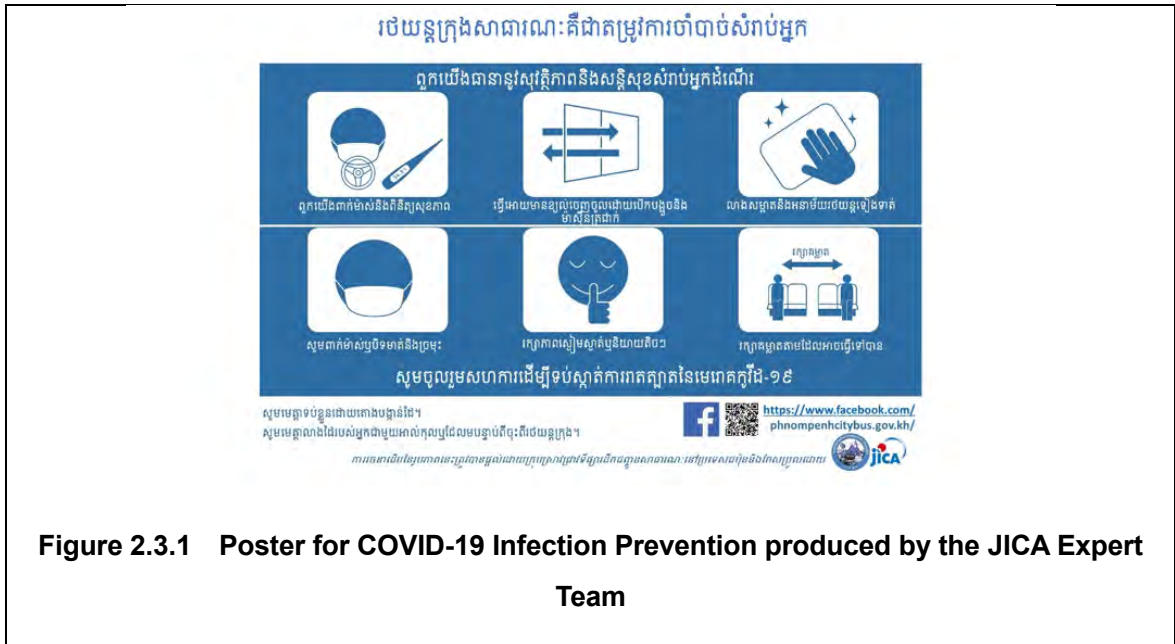


Figure 2.3.1 Poster for COVID-19 Infection Prevention produced by the JICA Expert Team



Handover of COVID-19 countermeasure equipment



COVID-19 prevention seminar



Implementation of disinfection inside buses (from PR video)



Scenes from bus service resumes.

Figure 2.3.2 Activities Related to COVID-19 Prevention Measures

(3) Training in Japan and the Third Countries

In the Project, one training course in Japan and three training courses in third countries were carried out. The contents of each training program are summarized in the table below.

Table 2.3.3 Summary of Training in Japan and Third Countries

Date	Country (City)	Major Contents	Participants
2018/2/25 ~ 2018/3/2	Singapore Malaysia (KL)	<ul style="list-style-type: none"> • Bus Network Planning Techniques • Improvement of bus corporation management capacity 	Mr. Chou Meng Chan, Deputy Director of Administration, PPCA Mr. Ean Sokhim, Governor, CBA. Mr. Ear Phearith, Deputy Governor, CBA Mr. Lay Sokraksmeay, Chief of Inspection and Dispute Resolution, CBA Mr. Sao Sovannary, Technical Officer, CBA Mr. TAKAHASHI Kiminari, Chief Advisor , JICA PiBO Dr. Kov Monyrath, Deputy Chief Advisor/ Public Transport Policy (2), JICA PiBO
2019/2/16 ~ 2019/2/26	Japan (Tokyo, Nagoya, Kawagoe)	<ul style="list-style-type: none"> • Public Transportation Policy and Priority Measures • Efficient bus network planning and safe operation 	Mr. Ean Sokhim, Governor, CBA. Mr. Phoeun Rithy, Vice of Planning and Investment office/PPCA Mr. Neang Monyroath, Official, Urbanization/PPCA Mr. Ori Sochea, Chief Mechanic/CBA Mr. TAKAHASHI Kiminari, Chief Advisor, JICA PiBO Dr. Kov Monyrath, Deputy Chief Advisor/ Public Transport Policy (2), JICA PiBO
2019/10/6 ~ 2019/10/11	Vietnam (Hanoi), Singapore	<ul style="list-style-type: none"> • Public Transportation Policy and Priority Measures • Improving the efficiency of bus operations and business 	Mr. Met Measpheakdey, Deputy Chief of Directorate (PPM/Mol), PPCA Mr. Prom Kampol, Chief of Road Safety Office, DPWT Mr. Kun Chanpagna, Deputy Governor of CBA Mr. Danh Darith, Chief Accounting/CBA Mr. Ori Sochea, Chief Mechanic/CBA Mr. TAKAHASHI Kiminari, Chief Advisor, JICA PiBO Dr. Kov Monyrath, Deputy Chief Advisor/ Public Transport Policy (2), JICA PiBO
2022/6/14 ~ 2022/6/24	Thailand (Bangkok)	<ul style="list-style-type: none"> • Public Transportation Policy and Priority Measures • Improving the efficiency of bus operations and business • Bus fleet management including bus inspection and repair works 	H.E Koeut Chhe, Deputy Governor of Phnom Penh Capital City Mr. Met Measpheakdey, Deputy Chief of Directorate (PPM/Mol), PPCA Mr. Ean Sokhim, Governor, CBA. Mr. Chou Kimtry, Deputy Director, DPWT/PPCA Mr. Khly Norack, hief of Administration Office, CBA Mr. Phon Longdina, Vice Chief of Accounting Office, CBA Mr. Lun Hean, Mechanic, CBA Mr. Suos Sophoeurn, Mechanic, CBA Mr. Lanh Savann, Mechanic, CBA Mr. Kon Chanly, Technical, CBA Mr. Kiminari Takahashi, JICA PiBO

Source: JICA Expert Team

(4) Other Project Activities

Other significant matters related to the overall activities of the Project are as follows. It should be noted that PPCA established CBA in September 2014, procured 57 used Korean buses, and operated them on three routes prior to the Project.

- 1) Delivery of 98 bus fleets from Chinese Government (July 2017)
- 2) Procurement of 80 bus fleets by Japanese Grant Aid (August to November 2018)
- 3) Construction of 4 ha bus depot (Completion in December 2018)
- 4) Recruitment of mechanics, drivers, and office staffs

The Expert Team also collaborated with the CBA on these activities to ensure smooth implementation of the project activities. For example, the Expert Team provided technical supports for the design and construction of the bus depot by proposing a layout plan that would enable efficient operation, inspection and maintenance, and worked with the CBA to hire mechanics and drivers by conducting interviews to ensure smooth and safe operation and implementation of project activities.

2.3.2 Output 1: Bus operation capacity of CBA is improved

The following activities were undertaken to achieve Output 1: "Bus operation capacity of CBA is improved".

- 1.1 To implement training for bus operation
- 1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice
- 1.3 To establish bus operation system and develop the operation plan
- 1.4 To analyze the bus operation data and improve the operation plan
- 1.5 To develop bus safety operation guideline and implement OJT for practice

Various discussions, workshops, and trainings were carried out to achieve Output 1. The table below shows trainings undertaken in Cambodia. Various other remote discussions and trainings were also conducted. A complete list of the trainings is included in ANNEX 1.

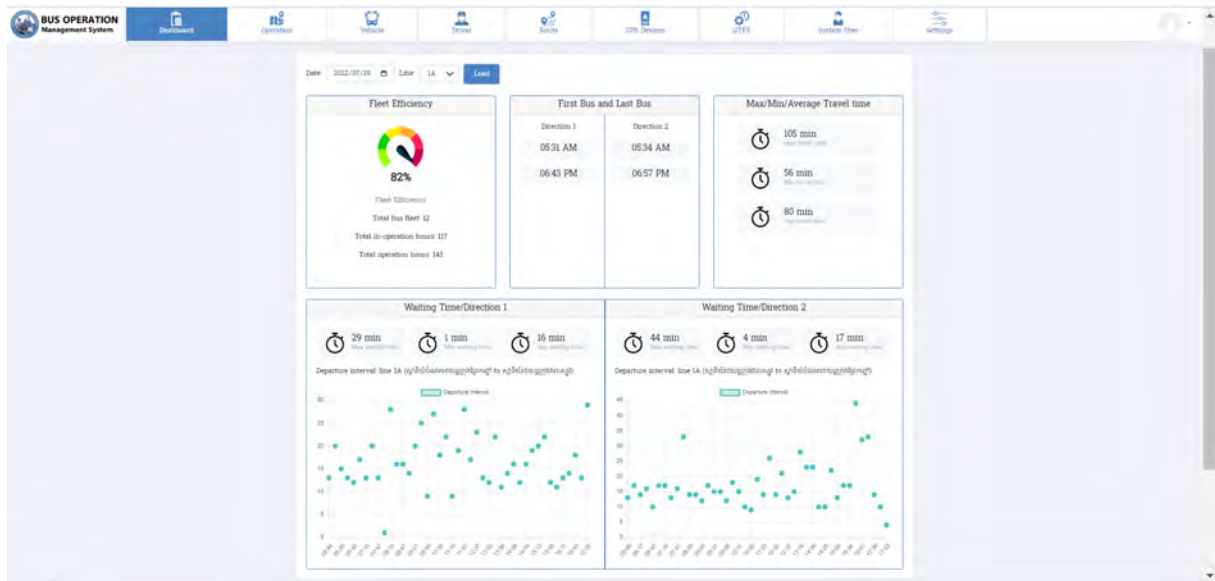
Table 2.3.4 List of Trainings in Cambodia for Output 1

No.	Date	Contents	No. of Participants
1	2017/1/20	Work Plan Outline	10
2	2017/6/11	Phnom Penh Bus Route Development Plan	12
3	2017/10/31	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15
4	2017/12/15	Discussion on Bus System Operation in Phnom Penh	16
5	2018/1/18	Meeting with the Consultants of PiBo Project (Eagle Bus)	16
6	2018/2/22	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ)	16
7	2018/2/27	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11
8	2018/3/3	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34
9	2018/3/9	Progress of The Project for Improvement of Public Bus Operation in Phnom	14

No.	Date	Contents	No. of Participants
		Penh	
10	2018/12/14	Progress Report	11
11	2019/7/2	Bus Scheduling improvement for CBA (Training)	25
12	2019/8/13	Bus Operation Plan and Deployment Plan	9
13	2019/12/12	Project Monitoring Sheet and Progress of Bus Operation & Management System	21
14	2020/4/29	NO Corona Infections from CBA and Bus Users	13
15	2020/5/28	Zero Corona Infections from Bus Drivers and Passengers	10
16	2020/5/27,28	Learning Seminar on Hygiene and Prevention against COVID-19	513
17	2020/6/20	Brief Progress Report to H.E Deputy Governor of PPCA	7
18	2020/7/8	Tracking System for COVID-19 (PIBO)	7
19	2020/7/22	Pandemic Bus Operation and Management Guide and Drivers Covid-19 Counter measures work content	11
20	2020/8/26	Basic Approval on Installation of 4 Routers	7
21	2020/9/2	Bus operation plan and deployment plan	7
22	2020/9/29	Preparation for the Reconstruction of the Public Bus	21
23	2021/4/1	QR Cord Stop Covid 19	7
24	2021/8/8	Bakong App for CBA	28
25	2021/8/24	Bus Operation & Deployment Plan	12
26	2021/9/1	Bakong App for CBA	37
27	2021/9/7	Bakong App for CBA	29
28	2021/11/10	AMENDMENT OF THE RECORD OF DISCUSSIONS	14
29	2022/3/8	Considerations for reorganizing CBA	10
30	2022/3/23	Bus Operation Plan	181
31	2022/3/24	Bus Operation Plan	151
32	2022/5/4	demonstration of Angkor E&C to CBA Management	16
33	2022/5/18	KPI and BOMS KPI and BOMS analysis Example Operation analysis	14
34	2022/7/13	City Bus Ticket - Pay with Bakong	13
35	2022/7/28	New Function Update (BOMS)	15

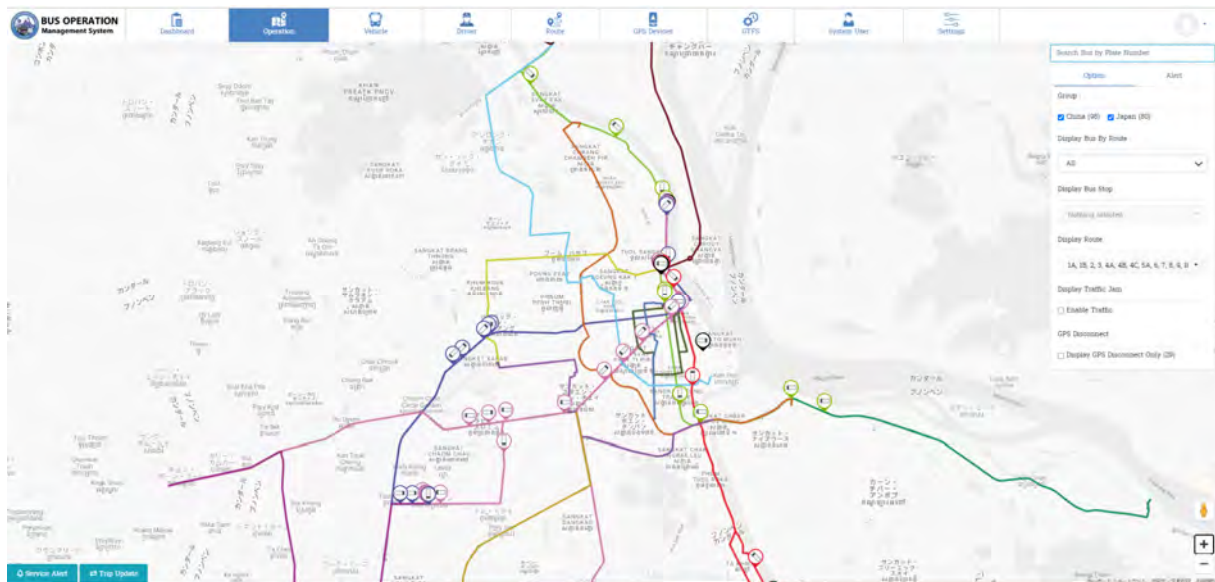
Source: JICA Expert Team

As the technical product of Output 1, BOMS (Bus Operation Management System) was developed. The BOMS consists of (i) operation data, (ii) vehicle management, (iii) driver management, (iv) route and bus stop management, (v) GPS, (vi) GTFS data, and (v) system user functions. The BOMS is designed to allow easy monitoring of operation data by displaying the analysis results on a dashboard. The dashboard function enables CBA management to monitor daily bus operation whether buses on each route were operating efficiently, following such KPIs as schedule, frequency, and operation speed, and to use this information to improve operation planning.



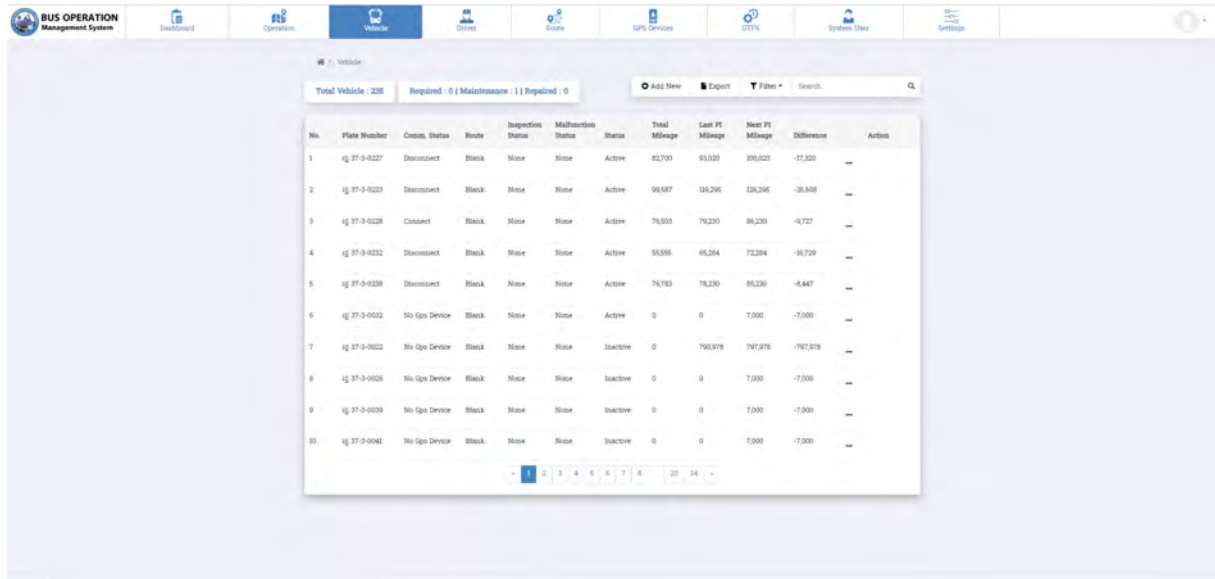
Source: JICA Expert Team

Figure 2.3.3 Screenshot of BOMS Dashboard



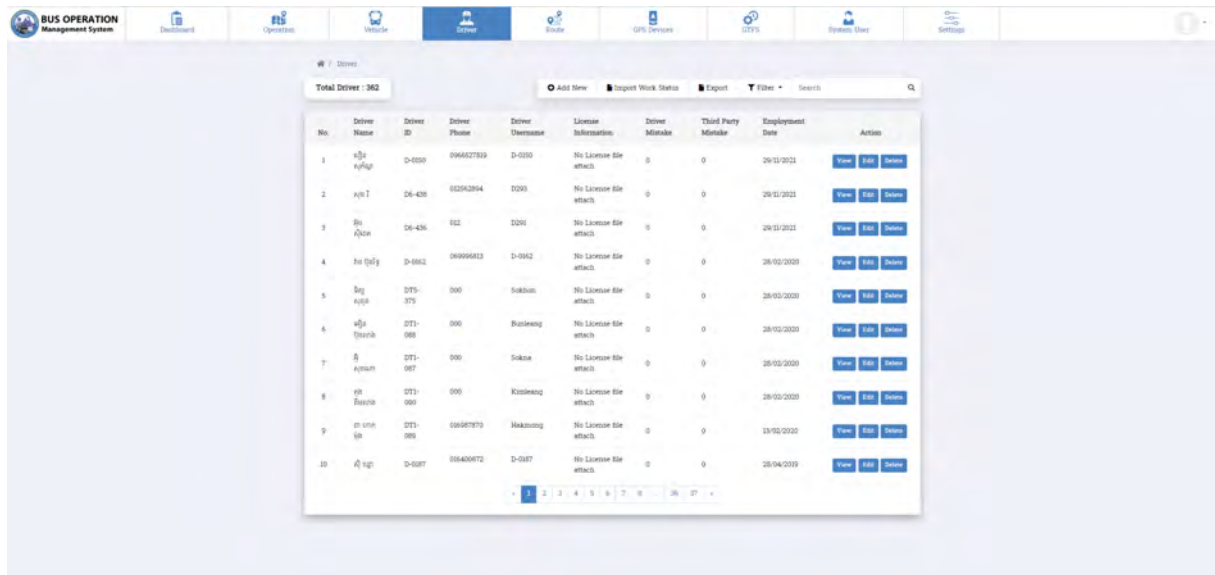
Source: JICA Expert Team

Figure 2.3.4 Screenshot of BOMS Bus Operation Data



Source: JICA Expert Team

Figure 2.3.5 Screenshot of BOMS Bus Fleet Management



Source: JICA Expert Team

Figure 2.3.6 Screenshot of BOMS Driver Management

2.3.3 Output 2: Maintenance and inspection capacity on bus fleets of CBA is improved

The following activities were undertaken to achieve Output 2: "Maintenance and inspection capacity on bus fleets of CBA is improved".

- 2.1 To develop bus vehicle inspection and maintenance manual
- 2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice
- 2.3 To monitor and evaluate inspection and maintenance works

Various discussions, workshops, and trainings were carried out to achieve Output 2. In

addition, 91 weekly meetings and remote training sessions were carried out under COVID-19 pandemic, as well as remote training using smart glasses to continue facilitating project activities. A complete list of the trainings conducted is presented in ANNEX 1.

Table 2.3.5 List of Trainings in Cambodia for Output 2

No.	Date	Contents	No. of Participants
1	2017/2/24	Establishment Plan for Bus Vehicle Workshop	10
2	2017/3/4	Bus Maintenance Plan and Budget	10
3	2017/6/26	Bus Maintenance Plan and Budget	11
4	2017/11/7	Bus Maintenance Plan and Budget	13
5	2019/7/5	Bus Maintenance, Explanation (Roll Call & Bus Schedule	7
6	2019/11/7	Bus Maintenance	17
7	2019/11/5	Assembly Meeting	All staffs of CBA
8	2020/8/11	Bus vehicle maintenance expert	15
9	2020/10/16	Improved sustainability of mechanics training- Coordination with NPIC and JVC	15
10	2021/2/9	Bus Maintenance	13
11	2021/3/24	Bus Maintenance	11
12	2021/6/6	Bus Fleet maintenance workshop with 3 OJT candidates/ 1 Substitute	10
13	2022/2/17	Bus Maintenance	13
14	2022/7/27	Bus Maintenance	14

Source: JICA Expert Team

In addition to the above training, a series of on-the-job trainings (OJT) were conducted during the period of on-site work at CBA bus depot by the Experts to learn and improve their skills while inspecting, maintaining, and repairing the buses actually in operation.



CBA Bus Depot and Procured Equipment

Source: JICA Expert Team



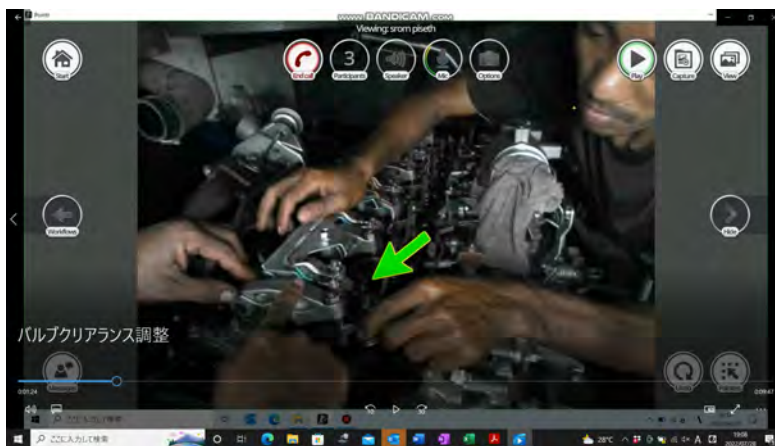
OJT by Experts

Figure 2.3.7 Activities Related to Output 2

In addition, since Expert Team was unable to work on-site due to the COVID-19 pandemic, CBA mechanics were recorded their work with smart phones to get proper support from

the Expert Team remotely, but this method was difficult to work efficiently because of the time-lag and unclear visibility of the actual works. To address these issues, the Expert Team procured smart glasses as part of the remote-work aid tool and it became possible to remotely check and instruct the work of local mechanics in real time, and to provide effective technical support even remotely.

The advantages of using smart glasses are confirmed as follows: 1) the video sent from the smart glasses can be shared in real time between the mechanic in Phnom Penh and the Expert in Japan, 2) the Expert in Japan can make writing on the screen while watching the video, which makes easier to communicate than explaining verbally (especially for most of mechanics who do not understand English), 3) the mechanic's hands are free, so it is easier to grasp the actual work, and 4) the work can be grasped from the mechanic's point of view.



Remote training with Smart Glasses
Source: JICA Expert Team



Mechanics with Smart Glasses

Figure 2.3.8 Remote Training with Smart Glasses

As a technical product of the Output 2, “Bus Inspection and Maintenance Manual” is developed together with supporting video of the manual. These videos are uploaded to the CBA official YouTube channel to make easy for mechanics to watch them anytime and anywhere.



Inspection and Maintenance Video (1)
Source: JICA Expert Team



Inspection and Maintenance Video (2)

Figure 2.3.9 Screenshot of Bus Inspection and Maintenance Video

2.3.4 Output: 3 Training system of bus drivers and conductors, drivers' management system for safe driving and labor management system are established in CBA

The following activities were undertaken to achieve Output 3: "Training system of bus drivers and conductors, drivers' management system for safe driving and labor management system are established in CBA".

- 3.1 To develop driver training manual
- 3.2 To develop work manual for conductors
- 3.3 To implement trainings for trainers of drivers
- 3.4 To implement series of training for both existing and newly-employed drivers by the trainers
- 3.5 To implement trainings for trainers of conductors
- 3.6 To implement series of training for conductors by the trainers
- 3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice

At the initial stage of the Project, CBA decided to introduce one-man operation and terminate two-man operation by excluding the conductors from the bus operation. According to this decision, the project activities "3.2 To develop work manual for conductors", "3.5 To implement trainings for trainers of conductors" and conductor part of "3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice" were eliminated from the project activities.

Various discussions, workshops, and trainings were carried out to achieve Output 3. The table below lists trainings in Cambodia. A number of other remote discussions and trainings were also conducted. A complete list of the trainings conducted is presented in ANNEX 1.

Table 2.3.6 List of Trainings in Cambodia for Output 3

No.	Date	Contents	No. of Participants
1	2017/6/11	Introduction Bus License & Others	12
2	2017/12/18	Bus Driving Training	14
3	2018/2/22	Bus Driving Training	16
4	2018/6/20	Bus Operation Training	15
5	2018/6/28	Chief Driver Training	24
6	2018/6/12	Bus Driver Training	14
7	2018/6/13	Bus Driver Training	16
8	2018/9/5-10/7	Bus driving training	No. 1 (60)/ No. 2 (60)/ No. 3 (40)/ No. 4 (40)
9	2018/12/19	Safety Operation	10
10	2018/11/25 - 12/22	Chief Driver Training, New Driver Training and Mechanic Training	76
11	2019/7/10	Roll Call Training	50
12	2019/7/15-7/19	New Driver Training	18
13	2019/7/30	Driver Training Report, Promotion Video for Phnom Penh City	13

No.	Date	Contents	No. of Participants
		Bus and The Progress of Bus Operation & Management System.	
14	2020/8/26-9/1	Pandemic Bus Operational and Management Guide	465
15	2020/9/28	Pandemic Bus Operational and Management Guide	58
16	2022/8/4	Bus Driver Training Report	11
17	28, 29 July, 1, 2 Aug. 2022	Bus Driver Training	54

Source: JICA Expert Team

In addition to the above trainings, the Expert Team's activities also included a number of supports for recruiting new drivers, helping to secure drivers in accordance with the bus route expansion plan/ bus operation plan, and assisting in improving the skill level of those newly employed drivers so that the buses assigned can be fully utilized.



Safety driving training by Driving instructor



Driver training

Source: JICA Expert Team

Figure 2.3.10 Activities Related to Output 3

Initially, only male drivers were working for the CBA, but as a result of proactive efforts to hire and train female drivers, two female drivers were successfully employed and trained in order to 1) improve the working environment for drivers and 2) improve employment opportunities for women, as promoted by the PPCA. The activities of the first female bus drivers in Cambodia were covered by newspapers and other media, and which contributed to improving the level of awareness and satisfaction of CBA bus services. In recognition of those project activities, those female drivers were honored by the Ministry of Women's Affairs of Cambodia on International Women's Day in March 2020.

In addition, at the beginning of the Project, the CBA buses were operated by a two-man operation system with the driver and conductor, and 90 conductors (mostly women) were employed. In 2017, in conjunction with the procurement of Chinese buses and the expansion of bus routes, CBA decided to discontinue the conductor system to save costs, and decided to operate a one-man operation system with only drivers. The CBA was able to gradually reassign the conductors to the head office, resulting in the securing and continuation of employment for women.



Article on Women Drivers

Source: JICA Expert Team



Awards by Women's Affairs

Figure 2.3.11 Women Drivers and their Activities

A manual for bus safety operation and management (with supporting video) was prepared as a technical product of the Output 3.

2.3.5 Output 4: CBA's business management capacity is improved

The following activities were undertaken to achieve output 4: "CBA's business management capacity is improved".

- 4.1 To implement training for financial accounting and management accounting
- 4.2 To collect and analyze operation cost/expenses and passenger data
- 4.3 To implement market research in bus operation area
- 4.4 To formulate a business plan including budget and accounting management
- 4.5 To review and examine the bus fare system and subsidy policy
- 4.6 To provide technical support for introduction of cashless ticketing system for fare collection

Detailed activities related to Outcome 4 include the followings.

1) Baseline Survey

Financial statements of CBAs and PPCAs were collected and training was provided on their current financial status. Since there was a possibility that CBAs may be converted to Public Administrative Enterprises in the future, interviews and surveys were also conducted with electric power companies, water companies, and other public enterprises to study and discuss the conversion of CBAs to public enterprises.

2) Public Bus Business Management

Data analysis was conducted with CBA to review the financial statements and discuss bus business management for CBA's sustainable bus operation. During the review work on

financial statements, it was confirmed that CBA properly prepared the statements required for regular reporting and annual budget request to PPCA, following the PPCA's templates using the PPCA's financial management system.

3) Examination of ICT-based business management approach

The BOMS and associated ICT equipment were procured. In addition, the bus location system was launched in July 2019. Both systems were updated as needed, such as setting KPIs, designing dashboards, and adding reporting systems. Based on these efforts, ICT-based systems enable efficient monitoring of bus operations by CBA's system operators. In addition, a cashless payment system was also introduced.

4) Examination of the strengthening of the organization of the CBA

An official request was made by the MEF to upgrade CBAs to Public Administrative Enterprise in May 2018. In addition, a revision of Cambodia's current legislation on state-owned enterprises and public enterprises was also conducted, which made it urgent to strengthen the organization of the CBA. At the 2nd JCC (held on June 8, 2018), it was discussed to change the organization status of the CBA, and it was confirmed by the Governor of PPCA that the CBA would maintain its current organization status.

Subsequently, at the 5th JCC (held on February 3, 2022), the Expert Team was requested by the Cambodian side to support the reorganization of CBA into the Public Administrative Enterprise or State Enterprise. The Expert Team worked with the CBA to review the Royal Decree for Public Administrative Enterprise and the Sub-decree for the establishment of universities and hospitals as a sample of establishment bill of Public Administrative Enterprise and drafted a bill establishing CBA as the Public Administrative Enterprise. The Expert Team also drafted the CBA's Terms of Reference based on MPWT's Prakas (Business Operation Manual).

The table below shows the various discussion, workshops, and trainings to achieve Output 4. In addition to these, numerous other remote discussions and trainings were also held. The complete list of trainings conducted is shown in ANNEX 1.

Table 2.3.7 List of Trainings in Cambodia for Output 4

No.	Date	Contents	No. of Participants
1	2017/9/8	1 st Workshop for the Accounting Office in CBA	16
2	2017/9/12	1 st Workshop Challenges to establish a sound business management system in CBA	13
3	2017/12/7	Second Workshop of Cash Flow Statement	23
4	2017/12/18	3 rd Workshop for the management and the accounting	12
5	2017/12/21	Bus Fare and Economy	20
6	2018/10/12	Seminar on recommendation for the change of the statute	6
7	2019/1/21	Fare Policy	13
8	2019/1/31	Discussion on CBA's Condition and Registration Book	10
9	2019/7/22	4 th Management Workshop Financial Simulation and Cost Reduce	11

No.	Date	Contents	No. of Participants
10	2020/1/6	Summary of Activities of Finance and Management Area	11
11	2021/6/29	Bakong Payment System and integration with bus ticketing/payment system	17
12	2022/2/21	Bus Operation Plan and Recommendation for registration book of CBA	12

Source: JICA Expert Team

As a technical product of Output 4, the bus location information providing application was developed and cashless payment system was introduced in all CBA buses which contributes to improving effective CBA's business management. An overview of the cashless payment system installed by CBA is as follows.

- **Wing Bank:** Launched a mobile payment service in Cambodia in 2008. Users register their phone number and ID (and obtain an IC card if necessary), and users can send and receive deposits and withdrawals at over 50,000 payment agents (mainly small retail stores) throughout Cambodia without having to go through a bank account. CBA signed a contract with Wing Bank in 2017, and Wing Bank installed the IC cards and card readers on the buses, while CBA pays 4.5% of the IC card payment sales as an agency fee for fare collection. Bus users pay for their bus fares by swiping their IC cards over the card readers when boarding the bus.
- **Aceda Bank:** The largest bank in Cambodia. CBA signed a memorandum of understanding with Aceda Bank in 2018 to add a feature on Aceda Bank's dedicated app for paying bus fares, as well as other utility bills, and CBA has installed QR codes issued by Aceda Bank on its buses. The fee charged for the use of this payment system is unknown (CBA officials mentioned at the hearing that there is no fee charged by the Aceda Bank). Bus users pay their bus fares with the application when boarding the bus, and the driver confirms the fare payment on the user's smartphone.
- **Bakong:** An electronic payment system hosted by the Central Bank of Cambodia. 37 Cambodian commercial banks (as of August 2022), including Wing Bank and Aceda Bank, are members of this system. Users are able to make electronic payments on a common platform by linking their bank or mobile accounts with Bakong, and there is a possibility that all commercial transactions will be transferred to Bakong in the future. CBA has already improved the City Bus App, which currently provides bus location information, with Bakong's payment system (and has already registered CBA's bank account with Bakong), and plans to introduce Bakong's payment system after PPCA's approval. Bus users can use the City Bus App to make Bakong payments each time they board the bus (or before boarding), and the driver confirms the fare payment on the user's smartphone.



Source: JICA Expert Team

Figure 2.3.12 Activities Related to Output 4

2.3.6 Output 5: Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

The following activities were undertaken to achieve output 5: "Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved".

- 5.1 To implement training for traffic management
- 5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal
- 5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes
- 5.4 To implement pilot projects and social experiments for the proposed traffic management measures
- 5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc.
- 5.6 To introduce bus information and location system
- 5.7 To implement workshops for mobility management to promote modal shift
- 5.8 To implement pilot projects for mobility management

Activities related to Output 5 mainly focused on capacity building on implementation of pilot project for bus priority measures through OJT, such as holding workshops in each Khan, discussions with relevant organizations, and consensus building. In addition, the Project developed BOMS and a bus location information application to share bus operation information with bus users, so that CBA's bus business become more efficient through the use of ICT technology.

The table below shows the various discussion, workshops, and trainings to achieve Output 5. In addition to these, other remote discussion and trainings were also held. The complete list of trainings conducted is shown in ANNEX 1.

Table 2.3.8 List of Trainings in Cambodia for Output 5

No.	Date	Contents	No. of Participants
1	2017/6/5	GPS System	13
2	2017/6/11	Bus Stop Design Guide	12
3	2017/9/6	Public Transport and Traffic Management Plan and Potential Pilot Project	16
4	2017/10/18	Matters agreed between CBA, Jica expert and CJEC	9
5	2017/11/22	Implement Bus Operation Management System	14
6	2017/12/13	Mobility Management	21
7	2017/12/13	Bus Stop Design Guide	18
8	2018/1/23	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13
9	2018/2/22	The Progress of ITC System	16
10	2018/3/21	Dissemination Campaign at Khan Daun Penh	118
11	2018/5/22	Dissemination Campaign at Khan Chamkarmorn	67
12	2018/5/24	Dissemination Campaign at Khan Toul Kork	109
13	2018/5/28	Dissemination Campaign at Khan Chbar Ampov	122
14	2018/5/29	Dissemination Campaign at Khan Dangkor	101
15	2018/5/30	Dissemination Campaign at Khan Mean Chey	63
16	2018/6/4	Dissemination Campaign at Khan Sen Sok	76
17	2018/6/5	Dissemination Campaign at Khan at Khan 7 Makara	75
18	2018/6/6	Dissemination Campaign at Khan Por Sen Chey	52
19	2018/6/7	Dissemination Campaign at Khan Russey Keo	89
20	2018/6/7	Dissemination Campaign at Khan Chhrouy Chang Va	50
21	2018/6/7	New Bus Stop Design Mobility Management Bus Promotion Measure	12
22	2018/10/12	Bus Stop Sign and Draft schedule for bus stop sign set up	6
23	2018/10/12	Mobility Management Promotion Measures	6
24	2018/12/19	Mobility Management Guideline	10
25	2019/3/21	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12
26	2019/6/3	Dissemination Campaign at Khan Daun Penh	72
27	2019/6/5	Dissemination Campaign at Khan Toul Kork	73
28	2019/6/6	Dissemination Campaign at Khan Mean Chey	110
29	2019/6/6	Dissemination Campaign at Khan Cham Kar Morn	97
30	2019/6/7	Dissemination Campaign at Khan Chbar Ampov	92
31	2019/6/10	Dissemination Campaign at Khan Dangkor	86
32	2019/6/11	Dissemination Campaign Khan Por Sen Chey	114
33	2019/6/13	Dissemination Campaign Khan 7 Makara	49
34	2019/6/13	Dissemination Campaign Khan Sen Sok	52
35	2019/6/14	Dissemination Campaign Khan Ressey Keo	90
36	2019/6/20	Dissemination Campaign Khan Chhrouey Chang Va	46
37	2019/6/21	Dissemination Campaign Khan Preak Phnov	104
38	2019/7/22	MM Action Plan Final, Concept Plan of Priority Measures Route Sele	9
39	2019/8/22	Scope of Pilot Bus Priority Measures	8
40	2019/10/3	Rapid Bus Project 2019-2010	19

No.	Date	Contents	No. of Participants
41	2019/10/22	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108
42	2019/10/24	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64
43	2019/10/25	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89
44	2019/10/25	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115
45	2019/12/12	E-Motorcycle sharing with City Bus	19
46	2019/12/20	Preliminary Opinion Survey for Mobility Management	22
47	2020/1/20	Overview of JICA's bus Priority Pilot Project	15
48	2020/2/7	Progress of Bus ICT	15
49	2020/3/11	Concept Design Policy on JICA's Bus Priority Lane and Report of Parameter setting for Bus Priority signal control.	10
50	2020/3/17	Concept Design Policy on JICA's Bus Priority Lane.	11
51	2020/5/8	Concept Design Policy on JICA's Bus Priority Lane	11
52	2020/6/12	Concept Design Policy on JICA's Bus Priority Lane	6
53	2020/8/5	Progress on E-bike Sharing	12
54	2020/8/25	Progressive on E-bike sharing	8
55	2020/9/25	Mobility Management "Remote Activity" Draft Plan + MOU	12
56	2021/1/21	Presentation on New Business for E –tok tok and E Van	11
57	2021/4/22	Router Installation for more redundant OFC NW	16
58	2021/6/23	Fiber Optic Core connection link	12
59	2021/11/3	Traffic Light	12
60	2021/12/12	Approval for Specification of Aerial OFC already installed	10
61	2021/12/16	City Bus App	9
62	2021/12/22	Activity Report of Mobility Management	9
63	2022/4/6	Meeting on BOMS	14
64	2022/4/28	Mobility Management Guideline	14
65	2022/5/5	Pilot Bus Priority Signal and Final Implementation Schedule for Pilot Bus Priority Signal	11
66	2022/5/17	Guide for Public Transportation	11
67	2022/5/31	Bus Priority Measures for City Bus Line 4	9
68	2022/6/15	Report on pilot project of the priority signal for bus "	8
69	2022/7/15	Discussion on the Bus Priority Measures for Bus Line 4	7
70	2022/8/10	Bus Facility Planning Guideline	10

Source: JICA Expert Team

As a technical product of Output 5, "Public Transport Priority Measures Guidebook", "Mobility Management Guidebook", "Bus Facility Planning Guidebook" were developed. Followings are outline of each product.

Table 2.3.9 Outline of Output 5 Deliverables

<p>< Public Transport Priority Measures Guidebook ></p> <p>Introduction</p> <p>Part1 Public Transport (PT) in Phnom Penh at a Glance</p> <ul style="list-style-type: none"> • Urban transport in Phnom Penh and issues arising • Overview of PT in Phnom Penh (Infra, service, organizational setting, etc.) <p>Part 2 Policy Direction and Strategies for Improvement of PT in Phnom Penh</p> <ul style="list-style-type: none"> • Review of empirical studies (JICA MP, ADB) • Policy direction and strategies for improvement of urban transport and PT <p>Part 3 Catalogues of Public Transport Priority Measures/Programs</p> <ul style="list-style-type: none"> • Overview of public transport priority measures Catalogues of public transport priority <p>Part 4 Case Studies and Pilot Project: Public Transport Priority Measures in PiBO</p> <ul style="list-style-type: none"> • Traffic Signal Control • Bus Priority Lane • E-bike Sharing • Steak holder Management 	<p>< Mobility Management Guidebook ></p> <p>Part 1 Introduction of Mobility Management (MM)</p> <ul style="list-style-type: none"> • What is Mobility Management (MM)? • Vision of Mobility Management • Why is Mobility Management important? • Promotion measures as part of mobility management Communication Activity • Target of Mobility Management • Consideration points of MM • Relationship between Communication activity and Behavior <p>Part 2 MM measures implemented in PiBO</p> <ul style="list-style-type: none"> • Building comprehensible public transportation • Giving information about public transportation comprehensibly Improving the image of public transportation • Letting citizen know the merit of using public transportation <p>Part 3 Monitoring and evaluation of MM measures implemented in PiBO</p> <ul style="list-style-type: none"> • Opinion Survey • In-depth Opinion Surveys • Online Surveys <p>Part 4 MM for COVID-19</p>
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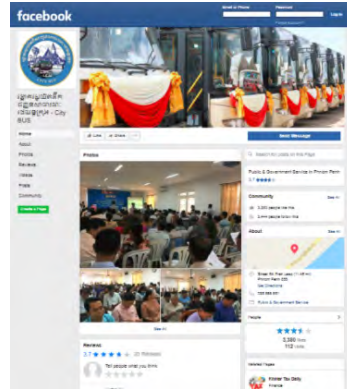
<p>< Bus Facility Planning Guidebook ></p> <p>Part1 Flow of Bus Facility Planning</p> <p>Part2 Planning of Bus Stop</p> <ul style="list-style-type: none"> • Bus Stop Spacing • Bus Stop Location • Amenities at Bus Stop • Signage and Information at Bus Stop <p>Part3 Planning of Particular Facility</p> <ul style="list-style-type: none"> • Bus Priority lane • Bus Depot



Install Bus Stop with Bus Route Information



Introduction of on-board bus information



Utilization of SNS to communicate with users



Preparation of Bus Route Map



Introduction of Shared e-bike

Figure 2.3.13 Activities Related to Output 5

CHAPTER 3. PROJECT EVALUATION

3.1 Objectives of this Chapter

The objectives of this chapter are described as followings:

- Confirm the progress of project activities, output, achievement and the procedure according to the agreed PDM and PO.
- Based on the "JICA Terminal Evaluation Guideline 2nd Edition", the Project is evaluated in terms of relevance, coherence, effectiveness, efficiency, impact, and sustainability.
- From the evaluation results, clarifying the issues for achieving the project goals, and making lessons learned and recommendations described in the next chapter.

3.2 Approach of the Project Evaluation

(1) Overall Framework

The project evaluation carries out along with the "JICA Terminal Evaluation Guideline 2nd Edition". The performance of the Project is assessed based on the latest and agreed PDM.

(2) Procedure of the Project Evaluation

- Collect the data and information regarding the outputs by each project activity by reviewing the documentation materials, interviewing the stakeholders and conducting questionnaire surveys. The activities/outputs are following five holds based on PDM: 1) improvement of the bus operation capacity, 2) improvement of the maintenance and inspection capacity, 3) establishment of the training system of bus drivers, the drivers' management system for safe driving, and the labor management system, 4) improvement of business management capacity, and 5) improvement of the capacity on policy planning for the public transport priority measures.
- Collect the information of the project progress and implementation process by interviewing the stakeholders, conducting questionnaire surveys and observing the project sites.
- Evaluate the achievements of outputs and overall goal based on the indicator of the agreed PDM.
- Confirm the process of project implementation based on the agreed PO.
- Evaluate the project from the viewpoint of six evaluation criteria: relevance, coherence, effectiveness, efficiency, impact, and sustainability.
- Lessons learned and recommendation described in Chapter 4

Table 3.2.1 Definition of the Six Evaluation Criteria

1) Relevance	A criterion for considering the validity and necessity of a project regarding whether the expected effects of a project (or project purpose and overall goal) meet with the needs of target beneficiaries: whether a project intervention is appropriate as a solution for problems concerned; whether consideration for vulnerable groups and equality are ensured.
2) Coherence	A criterion for considering whether the project's targeted effects are consistent with the policies of the Cambodian and Japanese sides, and whether there are synergies and mutual complementarities with JICA and other projects.
3) Effectiveness	A criterion for considering whether the implementation of project has benefited (or will benefit) the intended beneficiaries or the target society.
4) Efficiency	A criterion for considering how economic resource/inputs are converted to results. The main focus is on the relationship between project cost and effects.
5) Impact	A criterion for considering the effects of the project with an eye on the longer term effects including direct or indirect, positive or negative, intended or unintended.
6) Sustainability	A criterion for considering whether produced effects continue after the termination of the assistance.

Source: JICA Guideline for Project Evaluation

3.3 Achievement of the Project

3.3.1 Outputs

The progress of each project output is summarized in Chapter 2. The capacity level of the counterparts is rated from 1 to 4¹ and the achievement level of each project output is demonstrated in the followings.

(1) Output 1

Output 1	Bus operation capacity of CBA is improved
Indicator 1	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer's level (Level 4) • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed

Throughout the project period, technical transfer for the bus operation plan and its implementation was conducted through technical discussions at CBA's management meetings, involving CBA Governor, Deputy Governor, and section chiefs, etc., and through on-the-job training for technical staffs. The capacity level increased from 2.2 (2017 average) at the beginning of the Project to 3.5 (2022 average) at the end of the Project, with 4 staffs having acquired technical competence that reached Level 4 at the end of the Project.

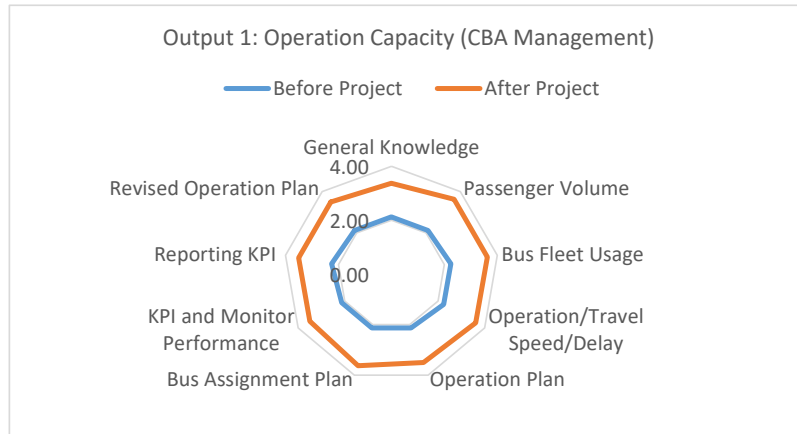
¹ The capacity of the individual staff is evaluated by following criteria in the project.

1: Staff can't do it at all (None of knowledge about it)

2: Staff can do it with external support

3: Staff can almost do it without external support

4: Staff can do it without external support and able to act as advisor and trainer (full capacity)



Source: JICA Expert Team

Figure 3.3.1 CBA Management Capacity Level (Output 1)

At the beginning of the Project, CBA allocated the required number of buses for each route based on “one bus per service kilometers” and “four round trips per bus per day”. Therefore, the service frequency was same in all bus routes even though there were differences in the number of passengers. As a result, the bus service became inefficient operation, particularly when the operation speed of the bus was lowered and the set service frequency was not met. Under such circumstances, the Project recommended the following principles for improved efficiency in bus operation.

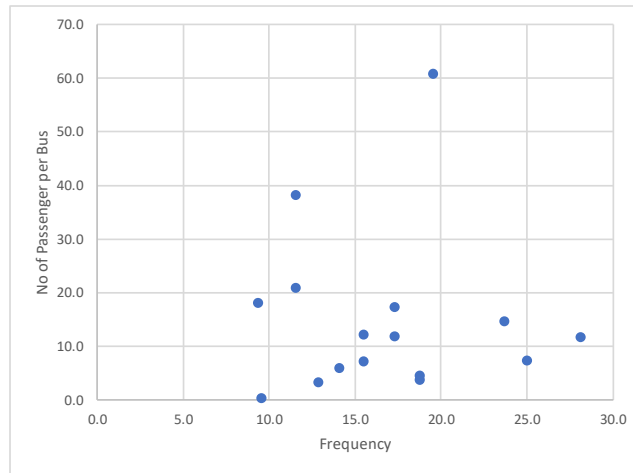
- Classify the bus route by the demand of passenger
- Allocate the required number of buses to maintain the appropriate operation speed and provide the service frequency based on the demand

These principals have been accepted and introduced in route and operation planning since 2019.

Table 3.3.1 Bus Operation Plan (Before) in August 2019

Line	Type	Current Assigned Bus (nos)	Frequency (min)	Average Round Trip per (nos)	Average Passenger/bus (Pax/bus)	Evaluation	In-Operation Rate (%)	Evaluation 75%<
Line 1A	Trunk	22	11.5	3.5	20.9	OK	89%	OK
Line 1B	Regional	8	18.8	6.0	3.8	OK	59%	NG
Line 2	Trunk	24	9.4	4.0	18.2	OK	77%	OK
Line 3	Trunk	32	11.5	2.4	38.2	OK	81%	OK
Line 4A	Feeder-Trunk	10	23.7	3.8	14.7	OK	121%	NG
Line 4B	Trunk	20	19.6	2.3	60.8	OK	78%	OK
Line 4C	Feeder-Trunk	8	28.1	4.0	11.7	OK	77%	OK
Line 5	Feeder (Ring)	17	15.5	3.4	12.2	OK	89%	OK
Line 6	Feeder	13	17.3	4.0	11.8	OK	60%	NG
Line 7	Feeder (Ring)	16	14.1	4.0	6.0	NG	89%	OK
Line 8	Feeder (Ring)	10	15.5	5.8	7.2	NG	115%	NG
Line 9	Trunk	13	17.3	4.0	17.4	OK	42%	NG
Line 10	Feeder (Ring)	12	18.8	4.0	4.5	NG	62%	NG
Line 11	Regional-Trunk	6	25.0	6.0	7.4	OK	151%	NG
Line 12 (C1)	Circular	12	9.6	7.8	0.4	NG	93%	OK
Line 13 (C2)	Circular	12	12.9	5.8	3.3	NG	121%	NG
		235						

Source: JICA Expert Team



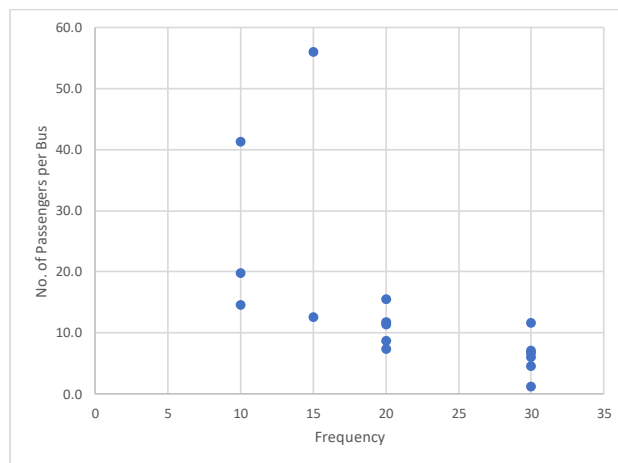
Source: JICA Expert Team

Figure 3.3.2 Number of Passenger and Bus Operation Frequency (Before Improvement) in August 2019

Table 3.3.2 Bus Operation Plan (After) in August 2019

Line	Type	Frequency	No. of Fleet Required	Average Passenger r/bus	Evaluation	Proposed Round Trip per	In-Operation Rate	Evaluation
		(min)	(nos)	(Pax/bus)		(nos)	(%)	75%<
Line 1A	Trunk	10	28	14.5	OK	4	101%	OK
Line 1B	Regional	30	5	4.5	OK	8	79%	OK
Line 2	Trunk	10	22	19.8	OK	4	77%	OK
Line 3	Trunk	10	36	41.3	OK	2	66%	NG
Line 4A	Feeder-Trunk	30	12	23.3	NG	2	64%	NG
Line 4B	Trunk	20	19	73.6	OK	2	68%	NG
Line 4C	Feeder-Trunk	30	8	11.7	OK	4	77%	OK
Line 5	Feeder (Ring)	20	15	11.8	OK	4	104%	OK
Line 6	Feeder	20	9	11.4	OK	6	90%	OK
Line 7	Feeder (Ring)	20	13	7.4	NG	4	89%	OK
Line 8	Feeder (Ring)	20	12	8.7	NG	4	80%	OK
Line 9	Trunk	15	9	12.6	OK	8	83%	OK
Line 10	Feeder (Ring)	20	9	4.0	NG	6	92%	OK
Line 11	Regional-Trunk	30	10	6.6	OK	4	101%	OK
Line 12 (C1)	Circular	15	10	0.6	NG	6	71%	NG
Line 13 (C2)	Circular	15	16	3.6	NG	4	83%	OK
			233	OK			72	

Source: JICA Expert Team

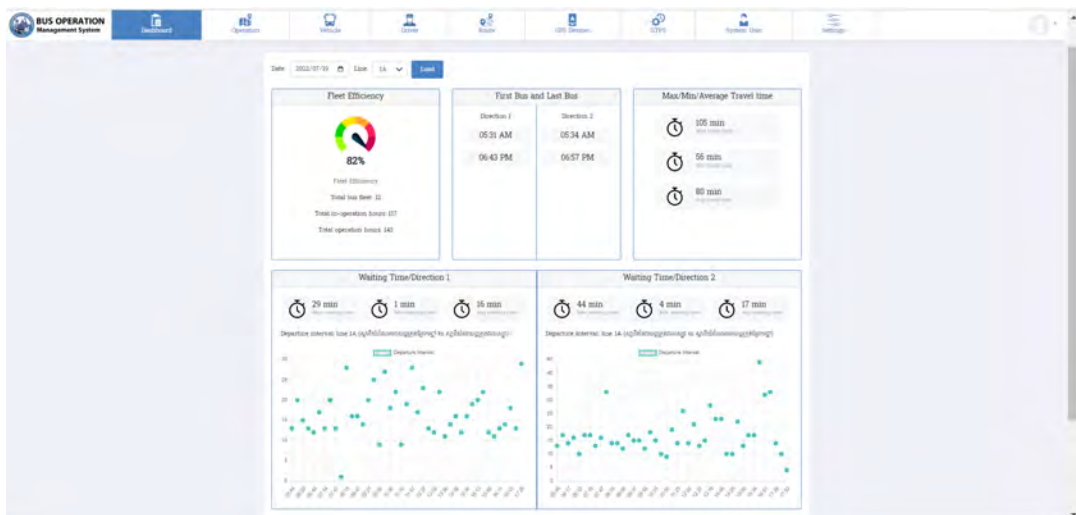


Source: JICA Expert Team

Figure 3.3.3 Number of Passenger and Bus Operation Frequency (After Improvement) in August 2019

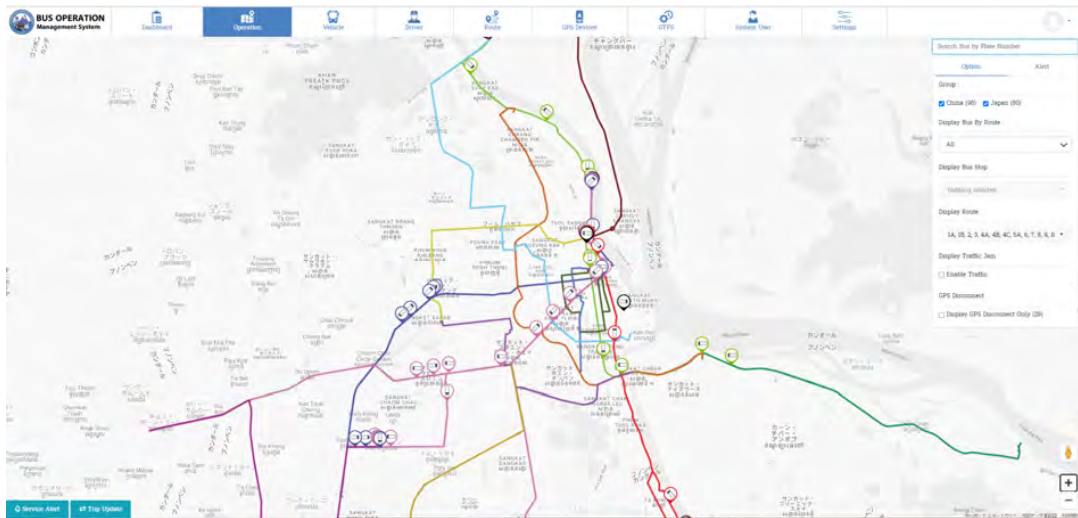
After installation of GPS in all 235 buses in July 2019, the bus location system was established by centralizing the database using the GPS. The bus location system and smartphone Apps were disseminated to the 3rd JCC meeting on July 4, 2019. Furthermore, the Bus Operation Management System (BOMS) was developed on the web system in July 2022 as well. The BOMS acquired the functions of i) operation analysis, ii) vehicle management, and iii) drivers' management. Notably, the system enhanced the operation dashboard in order to check the following KPI data; "operation rate", "start/end time", "travel time", "operating interval". The web-based system allows CBA management and on-site dispatchers to check real-time operation status from their own PCs and smartphones. The dashboard function is expected to enable CBA management to immediately evaluate the performance of bus operation by each route, leading to improvements in daily operations. Eagle Bus Group, assigned to the Project as an advisor, mentioned that although such web-based systems and dashboard functions were introduced in Singapore and other countries that manage the operations of private bus operators under performance-based contracts, there was no or rare experience of introducing such systems to bus operators in Japan, hence making it a pioneering project.

For 20 months from March 2020 to November 2021, the bus operation was suspended due to COVID-19 pandemic, accordingly the improvement plan of bus operation and system was not conducted in a full scale. However, the discussions on CBA management and KPIs of the bus business could contribute to fulfilling the functions of dashboard. These discussions and exercises could help to improve the capacity of CBA management staffs especially that of the monitoring and evaluation of operation planning and its implementation.



Source: JICA Expert Team

Figure 3.3.4 Bus Operation Management System (Dashboard)



Source: JICA Expert Team

Figure 3.3.5 Bus Operation Management System (Operation Data)

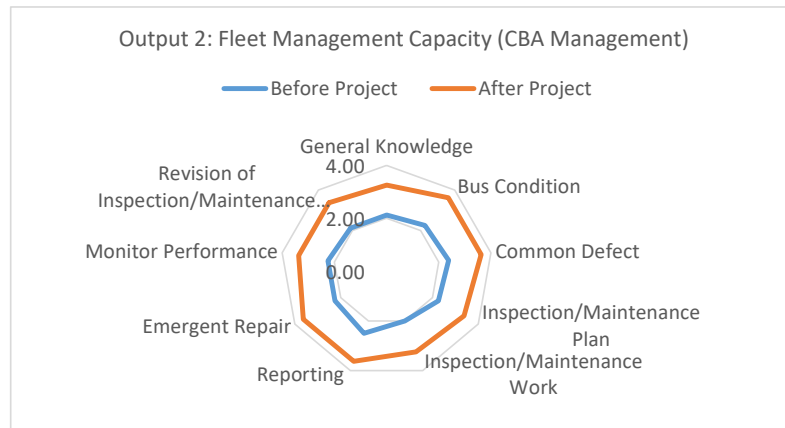
Achievement of Output 1

It can be judged that Output 1 is almost achieved according to the achievement level of indicators including improvement of technical capacity of the staffs and establishment of the BOMS. After the completion of the Project, the efforts related to Output 1 by CBA are expected to continue by evaluating and improving the operation system.

(2) Output 2

Output 2	Maintenance and inspection capacity on bus vehicles of CBA is implemented
Indicator 2	<ul style="list-style-type: none"> • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer’s level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual

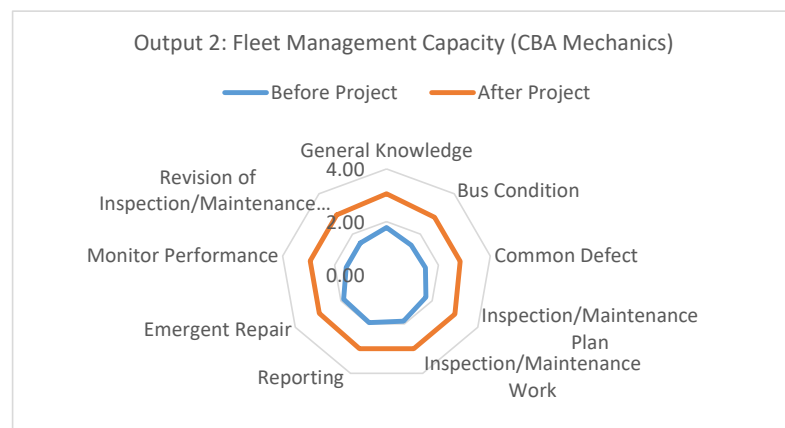
Technology transfer for vehicle maintenance was provided to CBA management through technical discussions at various meetings. A capacity assessment was conducted in July 2022 in the form of a questionnaire (N=8), and the results showed that the capacity level of CBA management and technical staffs increased from 2.2 at the beginning of the Project (2017 average) to 3.5 at the end of the Project (2022 average), and two staff members acquired technical competencies that reached Level 4 at the end of the Project.



Source: JICA Expert Team

Figure 3.3.6 CBA Management Capacity Level (Output 2)

The same questionnaire survey was carried out to the Maintenance Section to assess the maintenance capacity (N=19). The Maintenance Section's capacity level increased from 1.7 at the beginning of the Project (2017 average) to 3.0 by the end of the Project (2022 average).



Source: JICA Expert Team

Figure 3.3.7 CBA Mechanics Capacity Level (Output 2)

At the beginning of the Project, the inspection and maintenance of 57 used Korean buses were outsourced to the private company. Before the procurement of 98 Chinese buses in 2017 and 80 Japanese buses in 2018, CBA examined the existing maintenance system and decided to develop a force account maintenance and inspection capacity within the CBA. As a part of force account maintenance development, Maintenance Section was newly established for fleet management of all Chinese and Japanese buses. The Maintenance Section has employed 18 mechanics as of July 2022. In order to sustain the project activities and output, the Experts prepared the inspection and maintenance manuals to enhance that the division could continue the inspection and maintenance by themselves.

Although a simple comparison between used Korean bus and new Chinese and Japanese buses may not be appropriate, CBA's shift from outsourced maintenance to in-house maintenance resulted in the steady implementation of planned inspection/ maintenance

and emergency response to accidents, as well as the maintaining of bus fleets and equipment quality, which in turn has improved the operation rate (from 67.5% in 2016 to 82.7% in 2020). In addition, the maintenance cost of Japanese buses (about \$380 per vehicle per month in 2019) is lower than that of used Korean buses (\$800 per vehicle per month), contributing to cost reduction.

Table 3.3.3 Comparison of Bus Fleet Maintenance Cost

	Japanese Heavy truck	Isuzu (2019)	Isuzu (2023)	Yutong with Clutch OH	Korean	Thailand
Lubricants	1,200	700	800	1,200	-	-
Filters	500	400	800	900	-	-
Tire and Battery	1,500	500	1,800	1,800	-	-
Repairing spare parts	1,000	1,000	1,200	3,500	-	-
Paint and Body repair	300	2,000	1,200	1,800	-	-
Total / year	4,500	4,600	5,800	9,200	-	19,440
per month	375	383	483	767	800	1,620

Source: JICA Expert Team

After 80 buses were granted from the Japanese government to CBA, the Experts and CBA had to tackle with the initial failures of the Japanese buses. The typical defects were found in 1) bus door due to air leaks, 2) air conditioner, 3) electrical components and 4) paint peeling. In total, 364 defect cases were reported and it was equivalent to recall by Japanese standards. In response to such defects, one year warranty period was added through the discussion among CBA and the Japanese bus supplier. CBA mechanics fixed all initial defects with the support of the Experts. The Japanese supplier provided all necessary equipment and materials for fixing them in the extended warranty period. After the warranty validation, CBA continues maintenance by themselves for such defects as paint peeling that continued to occur.

For 20 months from March 2020 to November 2021, the bus operation was suspended due to COVID-19 pandemic and all 235 buses were parked in the bus depot. Taking this as an advantage, the inspection and maintenance kept continuing with the remote technical supports by the Experts.

The budget proposal for the bus maintenance has been submitted from the Maintenance Section to PPCA through Technical and Financial Division every year. Thus, the required amount of budget were allocated annually and the vehicle inspection and maintenance were regularly implemented throughout the project period.

Meanwhile, 57 used Korean buses became aging and costly for repair and maintenance works (800USD/bus/month). After replanning of bus operation among the Experts and CBA, it was decided to demolish 55 used Korean buses in September 2019.

Table 3.3.4 Initial Failures of granted Japanese Bus as of March 2019

No.	Classification	No.	%	Date n/a	Sep.18	Oct.18	Nov.18	Dec.18	Jan.19	Feb.19	Mar.19	Tendency		
CCC 294	1 Door / air leakage	64	17.6%	34.9%	0	18	15 (6)*	16 (7)*	4	7 (3)*	1	3	Decreasing ()*: Repeat repair	
	2 Door / electric	17	4.7%		0	11	3	2	1	0	0	0	Decreasing	
	3 Door / lock	19	5.2%		0	0	4	7	3	2	1	2	Decreasing	
	4 Door / hinge, frame	27	7.4%		0	0	0	5	2	3	5	12	Increasing	
	5 Air conditioner / gas leakage	41	11.3%	23.1%	4	1	32	0	0	1	0	3	Decreasing	
	6 Air conditioner / belt	19	5.2%		1	1	11	1	0	0	3	2	Pending	
	7 Air conditioner / electric	18	4.9%	21.2%	0	1	4	0	4	5	2	2	Pending	
	8 Air conditioner / pulley	6	1.6%		0	0	1	0	0	1	3	1	Pending	
	9 Electric / buzzer, back camera	35	9.6%		8	1	13	4	2	0	4	3	Pending	
	10 Light / brake, Indicator	42	11.5%	6.6%	0	0	2	7	8	11	4	10	Increasing	
	11 Paint	24	6.6%		1	0	0	0	8	2	2	11	Increasing	
	94.5%	12 Fare box	13	3.6%	8.8%	0	0	4	5	2	0	1	1	Decreasing
		13 Glass	12	3.3%		2	5	0	5	0	0	0	0	Decreasing
		14 Engine	4	1.1%		0	0	3	1	0	0	0	0	Decreasing
15 Driver's seat		3	0.8%	0		0	1	1	1	0	0	0	Decreasing	
AC Battery												2		
ISUZU 19	16 Chassis	6	1.6%	5.5%	0	0	4	0	1	1	0	0	Decreasing	
	17 Electric	6	1.6%		0	0	2	0	0	1	3	0	Decreasing	
	18 Engine	5	1.4%		0	1	1	0	0	2	0	1	Pending	
	19 Clutch	2	0.5%		0	0	0	0	0	0	2	0	Decreasing	
	20 Brake	1	0.3%		1	0	0	0	0	0	0	0	Decreasing	
	Total	364	100.0%	100.0%	17	39	85	38	36	29	31	53		

Source: JICA Expert Team based on data provided by CBA

Achievement of Output 2

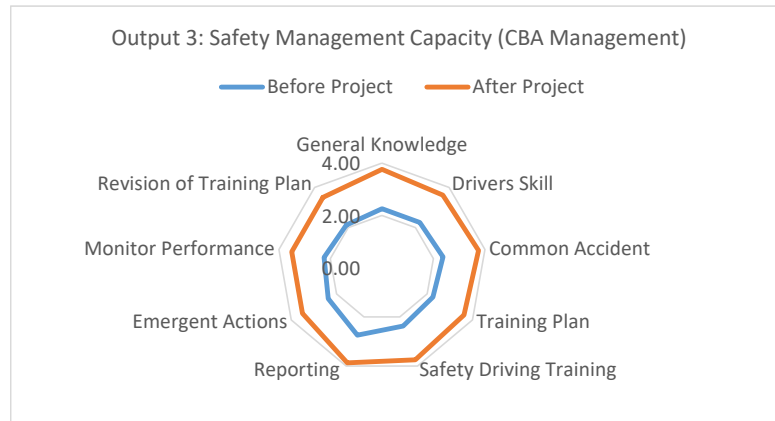
It can be judged that Output 2 is almost achieved according to the achievement level of performance indicators including improvement of technical capacity of the staffs and preparation and utilize the inspection and maintenance manuals. After the completion of the Project, the efforts of Output 2 by CBA on inspection and maintenance of the buses are expected to continue by utilizing these manuals.

(3) Output 3

Output 3	Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA
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Indicator 3	<ul style="list-style-type: none"> • Bus driver training manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level • All drivers have completed the driver training and passed training • Safety management system is developed
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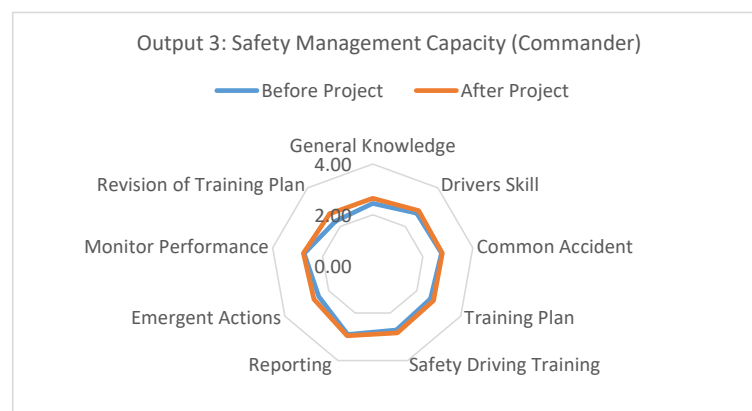
Technical transfer to CBA management for safe operation and management was conducted through technical discussions at various meetings and workshops for safe operation and management. A capacity assessment was conducted in July 2022 in the form of a questionnaire (N=8), and the results showed that the capacity level of CBA management and technical staffs increased from 2.3 at the beginning of the Project (2017 average) to 3.7 (2022 average) at the end of the Project, with five staffs having acquired technical competence reaching Level 4 at the end of the Project.



Source: JICA Expert Team

Figure 3.3.8 CBA Management Capacity Level (Output 3)

There are currently 91 commanders/dispatchers, and through various safety management trainings for them, technology transfer for safe operation and management was conducted. The level of the commander-dispatcher's competence (N=78) has remained from 2.6 (2017) at the beginning of the Project to 2.7 (2022) at the end of the Project and it has not led to a significant improvement in their competences. One reason for this result is that commanders and dispatchers are mainly responsible for recording driver's sign-in and sign-out and vehicle operations and do not have the leadership and management role of safely operating and managing drivers (many commanders and dispatchers were originally reassigned from conductors), so they do not have the opportunity to demonstrate the skills they have developed through training, etc.



Source: JICA Expert Team

Figure 3.3.9 CBA Commander/Dispatcher Capacity Level (Output 3)

At the beginning of the Project, the buses were operated by two-shift in the morning and afternoon. 30 commanders, 92 drivers and 92 conductors were assigned for the operation of 57 buses. After the discussion among the Experts and CBA, it was agreed that two-shift rotation maintains as it is, however one-man operation solely by the driver has introduced in order to reduce the operational cost. The conductors were all reassigned to other sections upon the necessity.

CBA was granted 98 Chinese buses in July 2017 and 80 Japanese buses in August 2018. Accordingly, 470 drivers in total were assigned to operate these buses. As a result, CBA had to recruit 380 new drivers and conduct their trainings. The Experts supported to prepare the driver recruitment plan including step-by-step employment schedule following bus route expansion, their working condition, recruitment examinations, and the training plan for these new drivers. Therefore, the recruitment was carried out along the plan smoothly.

The newly hired drivers have limited experience on driving buses although they have experiences driving heavy trucks. For taking consideration of such circumstance, two-days training including lectures and practical exercises were carried out to learn the safety driving and management for the new drivers and commanders. Besides for the drivers who tend to make traffic accidents, additional supplement trainings were conducted based on the accident analyses data.

For 20 months from March 2020 to November 2021, the bus operation was suspended due to COVID-19 pandemic. However, the trainings and seminars of safety driving and management were conducted with the supports of ILO and WHO Experts based on the discussion and preparation with the CBA management staff. Furthermore, the Expert Team procured the necessary equipment for bus operation such as hypochlorous acid generator for infection prevention and prepared the operation guideline under the COVID-19 pandemic.

Achievement of Output 3

It can be judged that Output 3 is almost achieved according to the indicators including improvement of technical capacity of the staff and preparation and utilize the safety operation manuals. After the completion of the Project, the efforts of Output 3 by CBA are expected to continue by utilizing the manuals, in particular to recruit the new drivers and commanders.

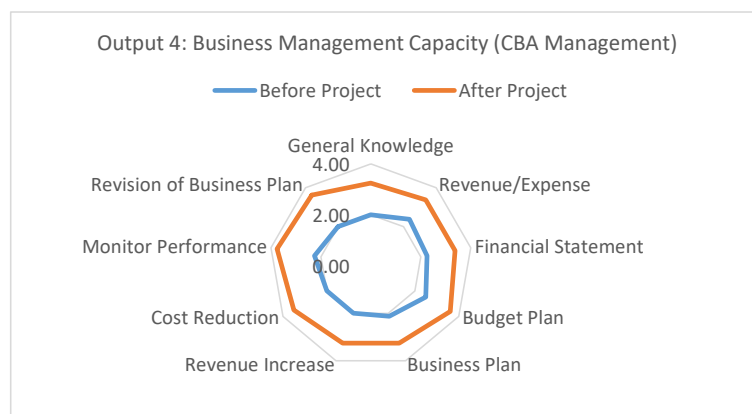
(4) Output 4

Output 4	CBA's business management capacity is improved
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Indicator 4	<ul style="list-style-type: none"> • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer' s level • Financial statements are prepared
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	<ul style="list-style-type: none"> • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed
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Technical transfer to CBA management for business management was carried out through technical discussions at various meetings. A capacity assessment was conducted in July 2022 in the form of a questionnaire (N=8), and the results showed that the capacity level of CBA management and technical staff increased from 2.2 (2017 average) at the beginning of the Project to 3.4 at the end of the Project (2022 average), and four staff members acquired technical competencies that reached Level 4 at the end of the Project.



Source: JICA Expert Team

Figure 3.3.10 CBA Management Capacity Level (Output 4)

Regarding the number of passengers recorded by CBA, the number increased from 6,000 pax per day before the beginning of the Project to 28,000 (maximum 30,000) pax per day in July 2019. The records are collected on each bus route and reported to PPCA regularly.

Besides, the number of bus routes also increased from 3 routes at the beginning of the Project to 8 routes in 2017 after the provision of Chinese buses. Finally, 13 bus routes have been operated after the provision of Japanese buses in 2018. The bus service areas expanded to cover all of the district (Khan) as of 2020 based on the recommendation from “the Project for Comprehensive Urban Transport Plan in Phnom Penh Capital City (2014)”. The expansion of the service area and routes is based on the principles explained in Output 1: “classify the bus route by means of passenger demand” and “allocate the required number of buses to maintain the appropriate operation speed and provide the service based on the demand” in order to achieve the efficiency and the cost reduction.

The planned undertakings by Cambodian side were implemented appropriately i) construction of the bus depot (4ha) including workshop for the bus maintenance and offices, ii) construction of bus terminals, iii) construction of 850 bus stops and shelters, iv) recruiting the staff and bus drivers, and v) maintenance of buses granted, according to the agreement in “the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh”. It means preparation of the budget plan and budget allocation were carried

out in schedule.

On the other hand, the bus fare is essential to cover the cost of bus operation. The policy of revising the bus fare was discussed among the Experts and CBA, and proposal on fare policy and subsidy policy were submitted to PPCA in the 3rd JCC and 5th JCC meetings. However, PPCA decided to maintain the current fare system and provide the sufficient financial support to CBA to cover the deficit.

It is necessary to continue the discussion about the policy of fare and subsidy after the termination of the Project in consideration that the lack of financial resources in PPCA due to the emergent expenditures for COVID-19 influenced the suspension of bus service prolonged to the past 20 months.

Regarding the payment system, Wing started introducing a payment system using IC Card in all Chinese buses in 2017. After provision of Japanese buses, all buses were equipped with the same facility. In 2018, another payment system using QR code is additionally installed into the buses by Aceda Bank. In addition, CBA is currently aiming to introduce a new payment system using Bakong developed by Central Bank of Cambodia, following recommendations in “JICA Pilot Project – Digital Currency Verification in Cambodia²”. However, the user of digital payment system is still limited, less than 3% of all passengers. CBA is expected to prepare the action plan in order to promote the digital payment system by means of introducing incentives to the users.

Achievement of Output 4

It can be judged that Output 4 is unable to achieve during the project period. It is because CBA needs the sufficient amount of revenue by increasing the fare and subsidy for the expansion of the bus service routes in the future. Even though CBA has prepared the budget plan and obtained the budget appropriately, and reduced the cost by demolishing used Korean buses and limited operation under COVID-19.

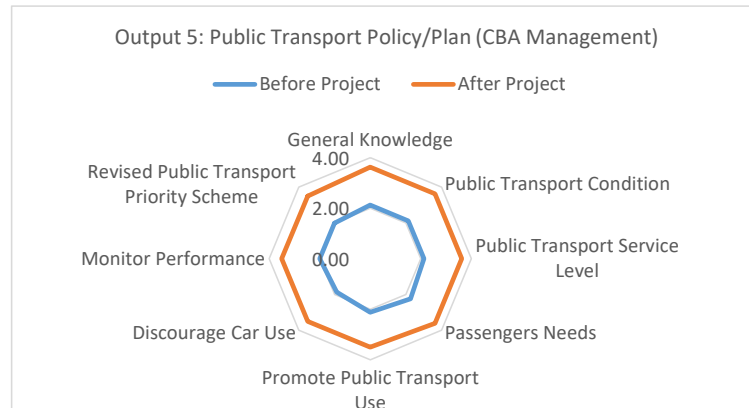
(5) Output 5

Output 5	Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved
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Indicator 5	<ul style="list-style-type: none"> • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer’s level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed • Bus information and location system is developed
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² The pilot project conducted as a part of “Data Collection Survey for Global DX Mainstreaming” in 2022 by JICA

Technology transfer for traffic and mobility management was implemented to CBA and DPWT management staffs through technical discussions at various meetings. A capacity assessment was conducted in July 2022 in the form of a questionnaire (N=8), and the results showed that the capacity level of CBA management and technical staff increased from 2.1 at the beginning of the Project (2017 average) to 3.6 (2022 average) at the end of the Project, and four staff members acquired technical competencies that reached Level 4 at the end of the Project.



Source: JICA Expert Team

Figure 3.3.11 CBA Management Capacity Level (Output 5)

Throughout the project period, the Experts prepared the strategies and plans related to traffic and mobility management with CBA and DPWT. As part of these activities, the Experts and counterparts selected the pilot route, a 5 km section on Charles de Gaulle and Monyreth boulevards, for the pilot project, which implements the priority measures of public transport and traffic management based on “the Project for Comprehensive Urban Transport Plan in Phnom Penh Capital City (2014)”. Subsequently, this blueprint of the pilot project was agreed with in 3rd JCC on July 4, 2019, including implementation of i) priority bus lane, ii) bus priority signal control, and iii) paratransit management measures. Finally, in terms of the cost, it was agreed that the priority bus lane would be borne by Cambodia side meanwhile the bus priority signal control and paratransit management measures would be borne by the Project.

After resumption of the bus operation in November 2021, the bus priority signal control was conducted as a pilot project in May and June 2022 in collaboration with CBA and DPWT. The pilot bus priority signal control project extended the green time at 8 intersections on the Line 4A/B, part of Charles de Gaulle and Monyreth boulevards. As a result, the travel speed of the bus increased from 8% to 18% by extending the green time from 2% to 4% during the evening peak hours. Therefore, it was evaluated as a sufficient contribution to improve the punctuality of the bus operation in the peak hour. On the other hand, the crossing road, Monivong Street, seemed to be influenced by the pilot project in terms that the travel speed increased and decreased in both directions. However, the actual impacts on the crossing road could not be evaluated due to the short period of the pilot project.

The bus priority lane has not conducted during the project period due to COVID-19 pandemic and lack of the PPCA’s budget by its emergent expenditure, even though the

pilot project cost had once included into the PPCA's budget plan of 2019/20 and approved by PPCA and MEF. Likewise, the paratransit management measures were cancelled because it was planned to implement along with implementation of the bus priority lane, such as controlling paratransit traffic in the pilot section and developing a terminal along the pilot route for enhancement of the transit between the bus and paratransit.

Furthermore, the urban railway project prepared by "the Preparatory Survey for Phnom Penh Urban Railway Development Project in the Kingdom of Cambodia (2020)" has been pending or suspended due to a lack of the borrowing power for the project loan on the Cambodia side, same as the situations of the monorail project proposed by China and the LRT project by France.

The Cambodian side and ADB are currently discussing the implementation of measures to prioritize the public transport, practically to introduce the bus dedicated and priority lane for 75 km section on the arterial roads in Phnom Penh, following the result of "ADB TA-9503 CAM: Supporting Sustainable Integrated Urban Public Transport Development (2021)". The ADB's TA and its study follow the design standard and development policy examined in the Project.

In line with the expansion of bus routes from 3 to 8 routes in 2017 and to 13 routes in 2018, the relevant facilities were developed and improved in schedule such as i) construction of bus terminals, and ii) construction of 850 bus stops and shelters. In addition, a 4-ha bus depot with a maintenance workshop and an administrative office building was constructed by January 2019.

As explained above, the Expert Team installed GPS in all 235 buses by July 2017 and centralized the database into the management system, and the bus location system was established. The bus location system and smartphone App were disseminated to the 3rd JCC on July 4, 2019. The bus location data were provided to the three private local ICT vendors, namely iTsumo Tech, TosJis, and Stop Near Me, without any charge. In which iTsumo Tech and TosJis have developed own smartphone Apps. By January 2020, the number of downloads of the City Bus App by iTsumo Tech had exceeded to 60,000. Considering the smartphone ownership rate in Cambodia, it can be judged that the majority of bus users (30,000 pax per day in maximum) could access the bus location information by the smartphone Apps.

Achievement of Output 5

It can be judged that Output 5 is almost achieved according to the improvement of the capacity and development of a series of traffic and mobility improvement strategies and plans, including traffic management plan, para-transit improvement plan and bus facility design guide. After the completion of the Project, the efforts of Output 5 by CBA and DPWT are expected to continue by utilizing these plans and guide, in particular to implement the bus dedicated and priority lane supported by ADB.

3.3.2 Project Purpose

Purpose	Bus operation management capacity in Phnom Penh is improved
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Indicator	Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020
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As explained above, the number of bus routes increased from 3 routes at the beginning of the Project to 8 routes in 2017 after the provision of Chinese buses. Finally, 13 bus routes have been operated after the provision of Japanese buses in 2018. The bus service areas expanded to cover all of the districts (Khan) as of 2020 based on the recommendation by “the Project for Comprehensive Urban Transport Plan in Phnom Penh Capital City (2014)”. The expansion of the service area and routes is based on the principles: “classify the bus route by means of passenger demand” and “allocate the required number of buses to maintain the appropriate operation speed and provide the service frequency based on the demand” in order to achieve the efficiency and the cost reduction in bus operation.

During the 20 months from March 2020 to November 2021, the bus operation was suspended due to COVID-19 pandemic. After the pandemic, the major 4 bus routes have restarted their operation since November 2, 2021. PPCA would reopen the 11 bus routes in total, excluding 2 circular lines³, in step-by-step manner in 2023. Therefore, it can be judged the project purpose has achieved because CBA had once 13 bus routes and operated them before COVID-19 pandemic. Besides near future CBA would reopen all bus routes based on their improved capacity and experience. Accordingly, “it is evaluated as the pre-set indicator is achieved”.



Source: JICA Expert Team

Figure 3.3.12 Bus Routes as of March 2020

³ The 2 circular lines were recommended to be cancelled due to unprofitability

Indicator	Bus service rate improved from 67.5% in 2016 to over 90.0% in 2022
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At the beginning of the Project, 57 used Korean buses were allocated on 3 routes, and operated for 4 round trips per day in total; 2 round trips each in the morning and afternoon. The service rate had fallen to 67.5% due to unexpected occurrences of maintenance and breakdowns due to aging of Korean buses. Nonetheless the rate recovered to 85.2% after provision of 98 Chinese buses in 2017 and 80 Japanese buses in 2018. However, the rate dropped to 70.0% again due to the response to the initial failures of Japanese buses. After addressing the initial failure of Japanese buses, it recovered to 82.7% from January to March 2020 because of the appropriate maintenance.

Furthermore, the traffic congestion in Phnom Penh is becoming worse and the travel speed deteriorated from 14.1 km/h in 2018 to 13.1 km/h in 2019. The traffic congestion influenced 40% of missed trips of bus service. The planned operation rate, 90.0%, has not been achieved under such circumstances. However, "it is evaluated as mostly achieved" by excluding the missed trips caused by external conditions such as traffic congestion.

Table 3.3.5 Indicators of Bus Operation in 2018

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	704,471	14.1

Source: JICA Expert Team based on data provided by CBA

Table 3.3.6 Indicators of Bus Operation in 2019

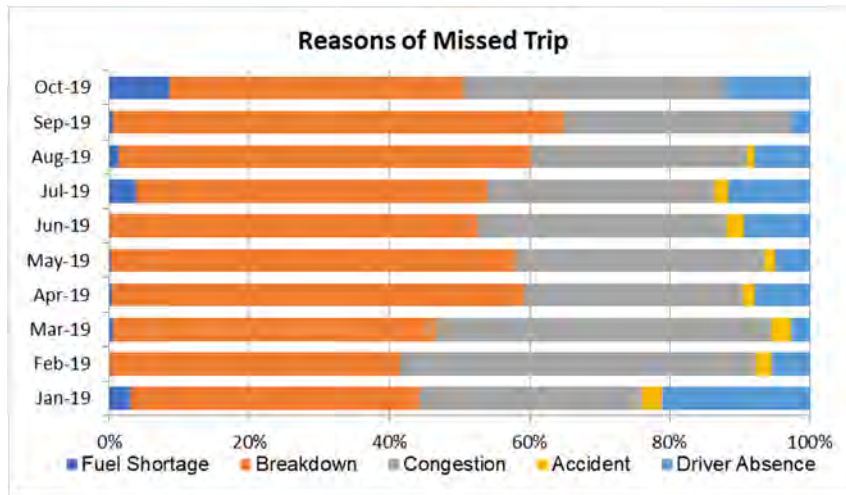
Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

Source: JICA Expert Team based on data provided by CBA

Table 3.3.7 Indicators of Bus Operation in 2020

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-20	13	181	588	480.0	18.4%	18,105	543,162	11.3
Feb-20	13	168	662	556.5	15.9%	21,602	648,060	12.9
Mar-20	13	166	644	529.0	17.8%	20,471	614,136	15.6
Apr-20	13	-	-	-	-			-
May-20	13	-	-	-	-			-
Jun-20	13	-	-	-	-			-
Jul-20	13	-	-	-	-			-
Aug-20	13	-	-	-	-			-
Sep-20	13	-	-	-	-			-
Oct-20	13	-	-	-	-			-
Nov-20	13	-	-	-	-			-
Dec-20	13	-	-	-	-			-
Total in 2020	13	-	631	522	17.3%	20,060	1,805,358	13.3

Source: JICA Expert Team based on data provided by CBA



Source: JICA Expert Team based on data provided by CBA

Figure 3.3.13 Reasons of Missed Trip

Indicator	Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased
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At the beginning of the Project, 57 used Korean buses were outsourced for inspection and maintenance to the private company. The Chinese buses were also outsourced the maintenance during the one-year warranty period. Along with the provision of Japanese buses, CBA developed a force account inspection and maintenance capacity by constructing the workshop in the bus depot, hiring mechanics, and installing the maintenance equipment. In addition, CBA prepared annual budget plans and obtained the budget for procurement of supplies and lubricants. As a result, the regular maintenance in every 5,000 km of operation length were carried out in an appropriate and timely manner.

As explained above, the initial defects of Japanese buses were found, such as i) bus door due to air leaks, ii) air conditioner, iii) electrical components and iv) paint peeling. In total 364 cases were reported to the CBA. In response to such initial defects, additional one year warranty was added through the discussion among CBA and the Japanese bus supplier. CBA mechanics fixed all initial defects with the support of the Experts.

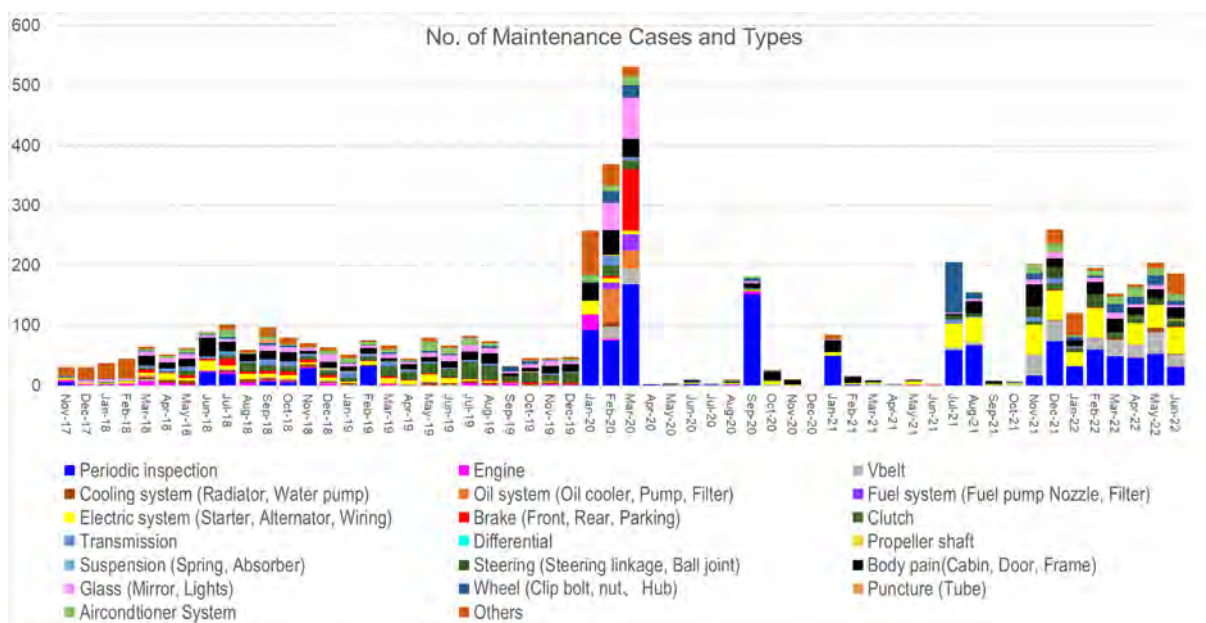
Although the bus operation was suspended due to COVID-19 pandemic, all buses were inspected and maintained appropriately. Hence, the bus operation could restart on November 2, 2021 without any problems even though reopening the bus service was decided in one day earlier.

In the first half of the project period, CBA carried out planned inspections and maintenance, including set up of Maintenance Section, budget planning and allocation, and handling of initial failures with the supports of the Experts. From these aspects, "it is evaluated as achieved".

Table 3.3.8 Bus Inspection and Maintenance Plan

Lubricants and Filters	interval	5,000km	10,000km	15,000km	20,000km	25,000km	30,000km	35,000km	40,000km	45,000km	50,000km
Grease	5,000km	Greasing	Greasing	Greasing	Greasing	Greasing	Greasing	Greasing	Greasing	Greasing	Greasing
Engine oil	1st: 5,000km 2nd: 10,000km each	Change	✓	Change	✓	Change	✓	Change	✓	Change	✓
Engine oil filter (Pre)	10,000km	✓	✓	Change	✓	Change	✓	Change	✓	Change	✓
Engine oil filter (Main)	10,000km	✓	✓	Change	✓	Change	✓	Change	✓	Change	✓
Fuel filter (Pre)	1st: 15,000km 2nd: 20,000km each	✓	✓	Change	✓	✓	✓	Change	✓	✓	✓
Fuel filter (Main)	1st: 15,000km 2nd: 20,000km each	✓	✓	Change	✓	✓	✓	Change	✓	✓	✓
Air cleaner (Outer)	30,000km	Clean	Clean	Clean	Clean	Clean	Change	Clean	Clean	Clean	Clean
Air cleaner (Inner)	60,000km	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean	Clean
Gear oil	1st: 10,000km 2nd: 40,000km	✓	Change	✓	✓	✓	✓	✓	✓	✓	Change
Bearing Grease	50,000km	✓	✓	✓	✓	✓	✓	✓	✓	✓	Change
Radiator Coolant	50,000km	✓	✓	✓	✓	✓	✓	✓	✓	✓	Change
Clutch oil	50,000km	✓	✓	✓	✓	✓	✓	✓	✓	✓	Change
Power steering oil	50,000km	✓	✓	✓	✓	✓	✓	✓	✓	✓	Change
Water separator filter	60,000km	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: JICA Expert Team



Source: JICA Expert Team based on data provided by CBA

Figure 3.3.14 Bus Inspection and Maintenance Record

Indicator	The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2022
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In line with the provision of Chinese buses and Japanese buses, CBA hired maximum of 470 drivers and provided the safety driving trainings for the drivers who are newly recruited and the drivers who tend to have accidents. In addition, the safety driving measures were conducted including the accident analyses and preparation of the drivers safety manual. As a result, the number of traffic accidents by bus drivers' faults decreased

from 3.58/100,000 km in 2018 to 1.12/100,000 km in 2019, and to 1.21/100,000 km in 2020. However, after COVID-19 pandemic, the number of accidents increased to 2.50/100,000 km from November 2021 to February 2022. This is because that the safety driving trainings were not enough before the reoperation of the bus service on November 2, 2021.

The number of accidents achieved the targeted indicator before the COVID-19 pandemic. The system of safety management, including drivers safety manual and trainings for the drivers, has already established in CBA and is expected to continue after the completion of the Project. From these aspects, "it is evaluated as achieved".

Table 3.3.9 The Data of Traffic Accident by Bus, January 2018 - March 2020

Jan. – Jun. 2022				Nov. and Dec. 2021			
Month	Traffic Accident			Month	Traffic Accident		
	Occurance (cases)	Accident rate (all) (cases/100,000km)	CBA driver's mistake (% of cases)		Occurance (cases)	Accident rate (all) (cases/100,000km)	CBA driver's mistake (% of cases)
Jan-22	14	5.24	42.9%	Nov-21	18	6.62	66.7%
Feb-22	10	3.74	50.0%	Dec-21	14	5.24	21.4%
Mar-22	10	3.74	30.0%	Total in 2021	32	5.93	44.0%
Apr-22	15	5.61	73.3%				
May-22	8	2.99	62.5%				
Jun-22	11	4.12	45.5%				
Jan. – Mar. 2020				2019			
Month	Traffic Accident			Month	Traffic Accident		
	Occurance (cases)	Accident rate (all) (cases/100,000km)	CBA driver's mistake (% of cases)		Occurance (cases)	Accident rate (all) (cases/100,000km)	CBA driver's mistake (% of cases)
Jan-20	25	4.60	40.0%	Jan-19	30	3.96	50.0%
Feb-20	23	3.55	26.1%	Feb-19	21	2.73	28.6%
Mar-20	11	1.79	45.5%	Mar-19	23	2.96	30.4%
Total in 2020	59	3.27	37.2%	Apr-19	24	3.45	29.2%
				May-19	18	2.52	16.7%
				Jun-19	18	2.62	27.8%
				Jul-19	24	3.64	41.7%
				Aug-19	23	3.88	34.8%
				Sep-19	18	3.00	27.8%
				Oct-19	28	5.61	25.0%
				Nov-19	33	6.38	30.3%
				Dec-19	27	4.79	25.9%
				Total in 2019	287	3.66	30.7%

2018			
Month	Traffic Accident		
	Occurance (cases)	Accident rate cases/100,000k	CBA driver's mistake (% of cases)
Jan-18	17	3.11	-
Feb-18	19	3.37	100%
Mar-18	21	3.70	100%
Apr-18	17	3.03	100%
May-18	16	2.84	100%
Jun-18	23	4.24	100%
Jul-18	25	4.54	75%
Aug-18	21	3.60	100%
Sep-18	29	5.46	40%
Oct-18	23	3.57	100%
Nov-18	43	6.24	33%
Dec-18	47	6.70	75%
Total in 2018	301	4.27	83.9%

Note: There is no accident data between 26 Mar. 2020 and 1 Nov. 2021 due to suspension of CBA bus services

Source: JICA Expert Team based on data provided by CBA

Indicator	Level of perception of the bus improves and customer satisfaction of bus users improves
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Throughout the project period, mobility management measures were taken with the aim of improving awareness and satisfaction with the bus operation. Practically the following activities were implemented with CBA: i) preparation and revision of the bus route map, ii) development of the smartphone Apps for providing the real time bus location information, iii) formulation and dissemination of the bus promotion videos such as "how to ride a bus" and "how to use a bus application", iv) distribution of the information about bus service by SNS and various events and test ride of the bus, v) preparation of a video "countermeasures for COVID-19", vi) dissemination of bus service by conducting the workshops in all districts (Khan), vii) providing shuttle bus services at various events such as schools, universities, and governments, and viii) circulating the information of bus service through the media such as newspaper, TV and radio .

CBA opened its official Facebook page and published the activities as part of mobility management measures. The number of followers exceeded 45,000 by July 2022. However, since the bus operations were suspended due to COVID-19, the number of followers has remained stable.

The opinion surveys were conducted three times during the project period targeting with the bus users and non-bus users, at the time of operating 8 bus routes in May 2018, 13 bus routes in June 2019 and after restarting the bus service in December 2021. The expansion of bus routes from 2018 to 2019 significantly improved the awareness and satisfaction on the bus service for both users and non-users. Meanwhile, the satisfaction of the following points left a room for improvement such as the "schedule reliability", "frequency of the operation", and "access to the bus stops", and "comfort and safety of the bus stops". In addition, the satisfaction with the bus services and facilities surveyed in December 2021 declined significantly immediately after restarting the bus service because only 4 routes operating by 60 buses seemed to be limited to low coverage of

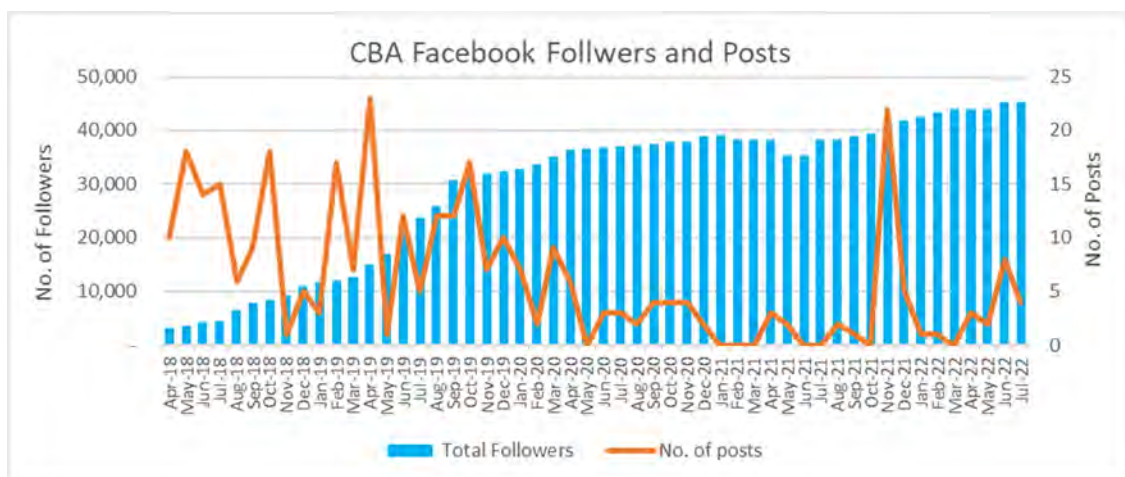
service area and low frequency service.

The satisfaction level of bus users and non-bus users achieved the targeted indicator before the COVID-19 pandemic. The bus service in a full scale will reopen in 2023 and mobility management is expected to continue after the completion of the Project. From these aspects, it can be judged that public awareness is improved and “it is evaluated as achieved”.



Source: JICA Expert Team

Figure 3.3.15 Results of the Opinion Surveys on Users and Non-users



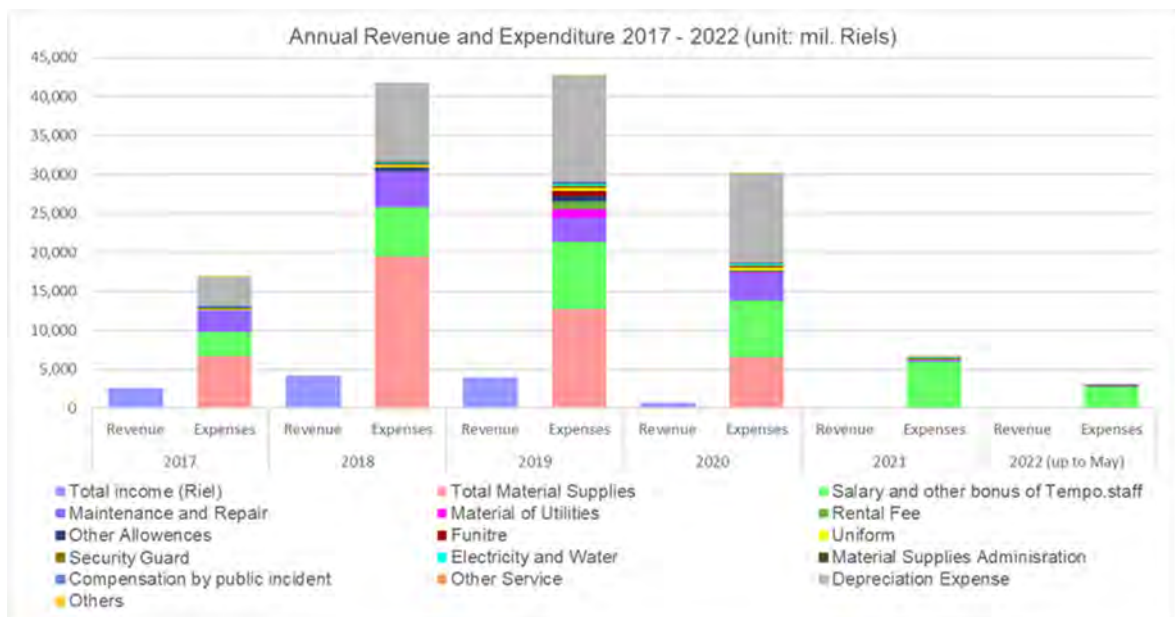
Source: JICA Expert Team based on data provided by CBA

Figure 3.3.16 Number of Posts on Facebook and its Followers

Indicator	Bus operation cost covered by the revenue in 2022
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According to the P/L statements from 2017 to 2020, the revenue is dependent on the fare, which amounted to 2,638 million Riel in 2017 and 4,202 million Riel in 2018. However, it decreased to 3,960 million Riel in 2019. One of the reasons is that the factory workers were newly added as free riders in late 2017 like the elderly and students. As a result, the fare revenue grew slowly even though the number of passengers increased yearly due to an increase in free riders. The fuel costs accounted for the majority of expenditure, followed by employee salaries and bus repair costs. In September 2019, it was decided to demolish used Korean buses and revise the fuel sales contract. As a result, the fuel costs were significantly reduced. However, the personnel expenditure increased in line with increased employment for the expansion of service route, the expenditure reached at 13,171 million Riel in 2017, 31,677 million Riel in 2018 and 29,162 million Riel in 2019, without depreciation cost of the buses.

The fare revenue to the operating costs is comprised of 20.0% in 2017, 13.3% in 2018, and 13.6% in 2019. As mentioned above, unless a drastic revision of fare and subsidy policies and introduction of measures to increase revenue, it can be judged that the operating costs are unable to be covered by the fare revenue. Accordingly, “it is evaluated as difficult to achieve in the project period”.



Source: JICA Expert Team based on data provided by CBA

Figure 3.3.17 Revenue and Expenditure related to Bus Operation 2017-2022

Table 3.3.10 Monthly Revenue and Expenditure related to Bus Operation

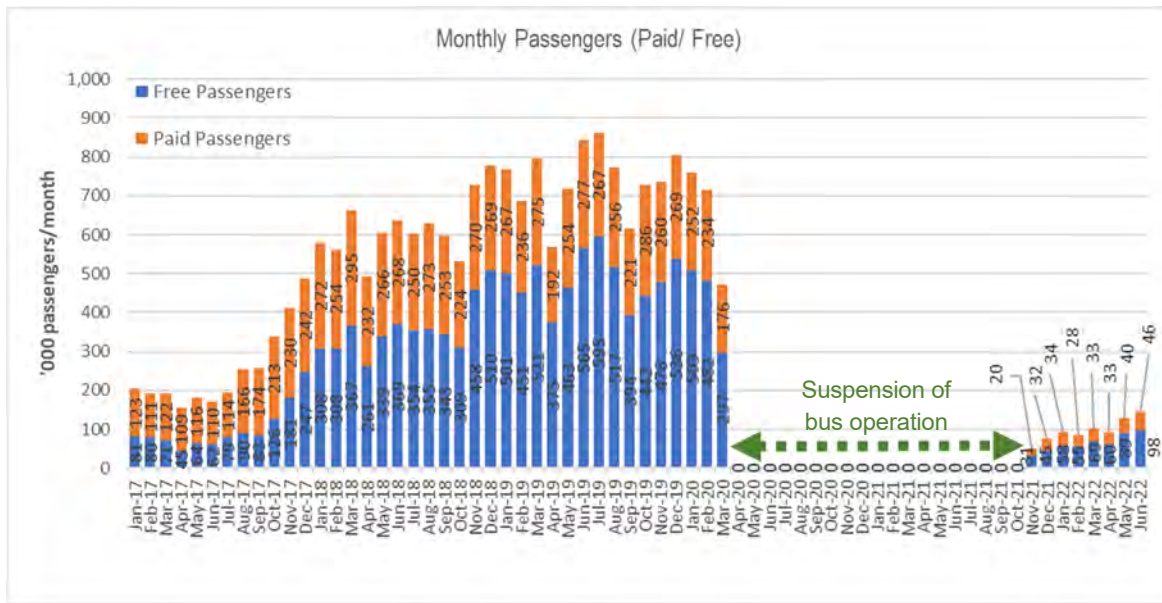
(mil.Riels)

Revenue & Cost 2017				Revenue & Cost 2018			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-17	184	211	-27	Jan-18	371	1,441	-1,070
Feb-17	166	195	-30	Feb-18	348	3,018	-2,670
Mar-17	182	1,721	-1,538	Mar-18	397	2,442	-2,045
Apr-17	143	289	-146	Apr-18	275	2,264	-1,989
May-17	175	2,387	-2,212	May-18	356	2,527	-2,171
Jun-17	165	376	-211	Jun-18	357	3,069	-2,712
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689
Oct-17	313	996	-683	Oct-18	300	3,262	-2,962
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712
Total 2017	2,638	13,171	-10,532	Total 2018	4,202	31,677	-27,474

Revenue & Cost 2019				Revenue & Cost 2020			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-19	347	2,662	-2,316	Jan-20	278	2,540	-2,262
Feb-19	309	2,599	-2,291	Feb-20	251	2,386	-2,135
Mar-19	358	2,940	-2,582	Mar-20	171	2,186	-2,015
Apr-19	247	3,334	-3,087	Apr-20	-	731	-731
May-19	324	2,713	-2,389	May-20	-	798	-798
Jun-19	359	4,583	-4,224	Jun-20	-	668	-668
Jul-19	354	1,872	-1,518	Jul-20	-	2,316	-2,316
Aug-19	338	1,505	-1,167	Aug-20	-	988	-988
Sep-19	285	1,156	-871	Sep-20	-	691	-691
Oct-19	364	2,043	-1,679	Oct-20	-	657	-657
Nov-19	336	2,580	-2,244	Nov-20	-	727	-727
Dec-19	340	1,174	-834	Dec-20	-	11,628	-11,628
Total 2019	3,960	29,162	-25,202	Total 2020	701	26,316	-25,616

Revenue & Cost 2021				Revenue & Cost 2022			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-21	0	658	-658	Jan-22	25	620	-595
Feb-21	0	655	-655	Feb-22	24	619	-595
Mar-21	0	655	-655	Mar-22	26	619	-593
Apr-21	0	672	-672	Apr-22	24	651	-627
May-21	0	644	-644	May-22	27	626	-599
Jun-21	0	645	-645	Jun-22	-	-	-
Jul-21	0	713	-713	Jul-22	-	-	-
Aug-21	0	802	-802	Aug-22	-	-	-
Sep-21	0	671	-671	Sep-22	-	-	-
Oct-21	0	633	-633	Oct-22	-	-	-
Nov-21	28	4	24	Nov-22	-	-	-
Dec-21	27	0	27	Dec-22	-	-	-
Total 2021	55	6,752	-6,697	Total 2022	126	3,135	-3,009

Source: JICA Expert Team based on data provided by CBA



Source: JICA Expert Team based on data provided by CBA

Figure 3.3.18 Number of Paid and Free Passengers

Indicator	Average operation speed maintained at 15km/h in 2022
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As a result of measuring the average operation speed of the bus for 3 days on weekdays each month, the average bus operation speed was recorded at 14.1 km/h in 2018, 13.1 km/h in 2019, 13.3 km/h in 2020⁴. Compared to the average operation speed in the beginning of the project, 15.0 km/h, it was declining year by year. It is presumed that the traffic congestion in Phnom Penh has been worsening due to an increase in the number of registered cars and Ride Hailing Service (RHS).

Currently the bus system is the sole public transport mode available in Phnom Penh, which needs to be considered and utilized as alternative means of private transport. For this reason, further improvements in the operation speed, punctuality and frequency of buses are vital. In order to increase the frequency and punctuality by operating with the limited number of buses, it is essential to increase the operation speed of the buses. Traffic congestion in Phnom Penh seems to be improved because of the reduction in travel opportunities under COVID-19 pandemic. However, the traffic congestion is expected to be worsened again once the COVID-19 pandemic is regarded as part of New Normal life.

As mentioned above, the Project implemented the bus priority signal control as a pilot project, and it was confirmed the bus priority measure was effective in improving the operation speed of buses. PPCA is expected to promote the public transport and encourage shifting from private transport continuously by using the manuals and guidebooks prepared by the Project such as guides of public transport priority measures and mobility management. However, “it is evaluated as difficult to achieve in the project period”, considering the decline in the operation speed of the bus before COVID-19 pandemic.

⁴ The period was from January to March in 2020 before COVID-19 pandemic

3.3.3 Overall Goal

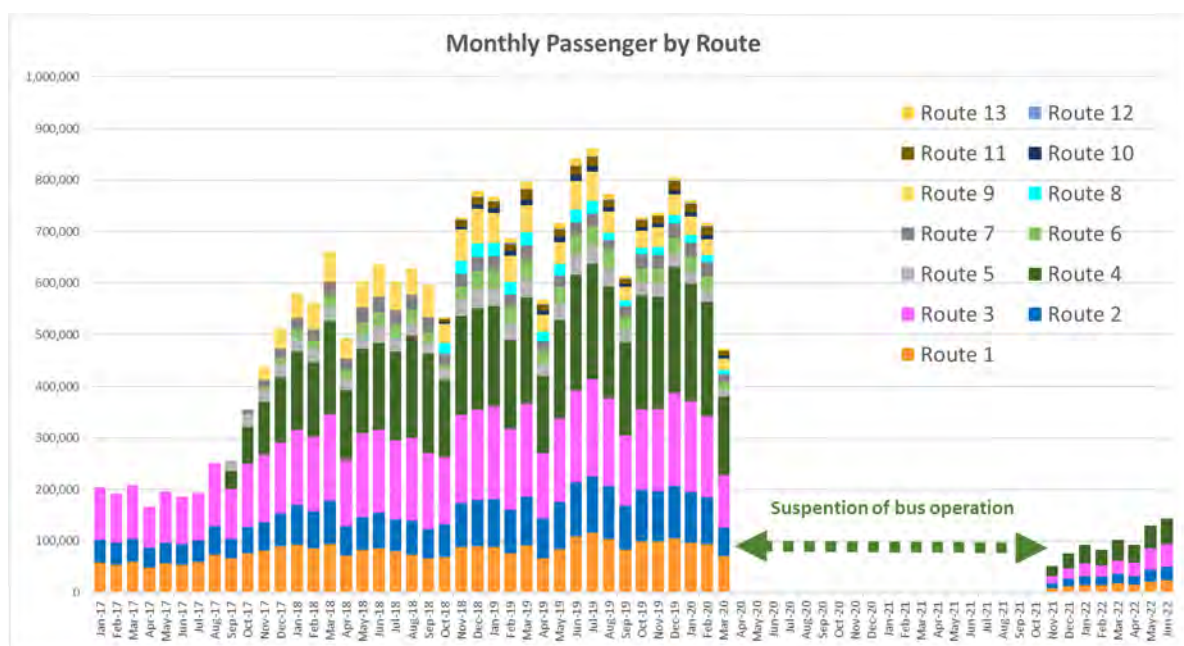
Overall Goal	Ridership on the public transport (city bus) in Phnom Penh is promoted
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Indicator	Modal share by bus transport increases from 0.2% in 2017 to 2% in Phnom Penh by 2025
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The overall goal of the Project is to increase the sustainability of bus operation, taking the best practice of Japanese public transport management policy, by covering the operation cost with fare incomes and subsidy under the precondition of the average passenger load of 10 to 15 pax per bus in operation. As a result, it was estimated that 70,000 passengers per day, or 2% of the total population, would need to use bus transport by 2025, out of the 3.5 million trips estimated as total travel demand in Phnom Penh.

In the middle of the project period, the average number of bus passenger reached to 28,000 pax per day (30,000 pax per day in maximum) in July 2019. For the second half period, the Project was supposed to implement several activities for further improvements such as improved operation plan, reviewed bus routes including the termination of unprofitable routes, improved punctuality and operation speed, and raised satisfaction of users by implementing the mobility management measures. However, the Project was critically influenced and suspended by the suspension of bus services due to COVID-19 pandemic for 20 months from March 2020 to November 2021.

In November 2021, CBA restarted the limited bus service on 4 routes with 60 buses. At the beginning of the resumption of the bus operation, the number of passengers increased from 2,000 pax per day immediately after restart in November 2021 to 6,000 pax per day by June 2022. This is equivalent number of passengers at the beginning of the Project which operated 3 routes with 57 buses. PPCA and CBA are preparing the budget plan to expand the service routes gradually in 2023. After reopening all bus routes, CBA is expected to implement every measure mentioned above in order to increase the punctuality and operation speed. As a result, it is expected that the 70,000 pax per day, an indicator of the overall goal, would be reached by the target year of 2025.



Source: JICA Expert Team based on data provided by CBA

Figure 3.3.19 Number of Monthly Passengers by Route

Table 3.3.11 Rate of Return by Scenario of the Fare and Subsidy

S/N	Scenario	Riel (million)	USD ('000)	Revenue /Cost	Condition
Ridership: 26,000 pax/day					
1	Base Case (65% free riders)	410	102	10%	1500 Riel/trip
2	Fare Option (Student fare)	515	129	13%	1500 Riel for ordinary, 500 Riel for student
3	Fare Option (Student fare+Distance based fare)	788	197	19%	Average 2500 Riel for ordinary
4	Subsidy Option (Free rider pass)	895	224	22%	1500 Riel for ordinary, 500 Riel for student
5	Subsidy+Distance based Fare Option	1,422	355	35%	Average 2500 Riel for ordinary
Ridership: 70,000 pax/day					
6	Base Case (65% free riders)	1,103	276	27%	Same to Scenario 1
7	Fare Option (Student fare)	1,387	347	34%	Scenario 2
8	Fare Option (Student fare+Distance based fare)	2,122	530	52%	Scenario 3
9	Subsidy Option (Free rider pass)	2,411	603	59%	Scenario 4
10	Subsidy +Distance based Fare Option	3,828	957	94%	Scenario 5

Source: JICA Expert Team

[Expected Achievement of Overall Goal]

The number of bus passengers was 7,000 pax per day in 2017, at the beginning of the Project, and reached at maximum of 30,000 pax per day in July 2019. Accordingly, it is expected to achieve the overall goal (70,000 pax per day) by means that PPCA, CBA and DPWT maintain to improve the bus operation by using the mobility management and public transport priority measure guides prepared by the Project.

3.4 Results of Project Evaluation

3.4.1 Project Assessment by Six Evaluation Criteria

Based on the "JICA Terminal Evaluation Guideline 2nd Edition", the Project is evaluated in terms of relevance, coherence, effectiveness, efficiency, impact, and sustainability. Each criterion is evaluated in the following five grades: "high", "fairly high", "fair", "fairly low", and "low".

3.4.2 Relevance

The relevance of the Project is high.

Phnom Penh has a population of more than 2 million and increased the Ride Hailing Service (RHS) sharply in line with the number of registered vehicles, like other capital cities in Southeast Asia. Although DPWT has been widening the existing roads and developing new urban roads and grade-separated crossings, the rapidly increasing number of vehicles has worsened traffic congestion before the COVID-19 pandemic. As stated in the "National Strategic Development Plan (NSDP) 2019-2023", it is essential to provide public transport instead of private transport and RHS in order to manage the urban transport sustainably. Therefore, the implementation of the Project is judged highly necessary.

Furthermore, improvement of the capacity for bus operation and achievement of the project purpose were based on attaining the 5 project outputs: i) improvement of the bus operation capacity, ii) improvement of the maintenance and inspection capacity, iii) establishment of the training system of bus drivers, the drivers' management system for safe driving, and the labor management system, iv) improvement of business management capacity, and v) improvement of the capacity on policy planning for the public transport priority measures. The Project aimed to obtain the ridership of 70,000 pax per day as the overall goal in order to maintain a sustainable bus operation. The project outputs are essential to achieving the project purpose and overall goal. Therefore, the outputs, purpose and goal of the project were set appropriately.

Furthermore, the Project provides an alternative transport mode to private transport modes to the citizens of Phnom Penh, which makes it beneficial to the entire population of the city. In particular, the Project contributes to improving the livelihood of the socially vulnerable groups, since bus users are mostly students, elderly people, and women who have no means of private transportation.

3.4.3 Coherence

The coherence of the Project is high.

In July 2019, the Cambodian government formulated the "National Strategic Development Plan (NSDP) 2019-2023" which stipulates the necessary policies and the responsibility of each ministry, priority areas, indicators and timeframe in order to transform from a lower middle-income country to an upper middle-income country by 2030 by obtaining high benefits from ASEAN economic integration.

The transport sector is also listed as a priority area. With the goal of "improving the logistics system and strengthening transport, energy, and digital connectivity," Phnom Penh is required to achieve "improvement of traffic congestion" and "development of public transport system".

In addition, the Ministry of Foreign Affairs of Japan formulated "Country Assistance Policy for Cambodia" in July 2017. As the basic policy, the following three are selected as priority areas: "strengthening the economic infrastructure", "promoting social development" and "improving the governance" with the aiming at "further strengthening of the economic and social infrastructure to become a high-middle-income country by 2030". Besides, improvement of the water supply and sewage, drainage, electric power and urban transport are selected as focus areas in order to improve the quality of life. In particular, improvement of urban transport includes to develop the public bus services. Hence, the Project is consistent with the development policy of Cambodia and the assistant policy of Japan.

3.4.4 Effectiveness

The effectiveness of the Project is fair. The achievement of the outputs summarize below.

- Improvement of the bus operation capacity: Mostly achieved
- Improvement of the maintenance and inspection capacity: Mostly achieved
- Establishment of the training system of bus drivers, the drivers' management system for safe driving, and the labor management system: Mostly achieved
- Improvement of business management capacity: Difficult to achieve in the project period
- Improvement of the capacity on policy planning for the public transport priority measures: Mostly achieved

On the other hand, the achievement of the project purpose summarize below.

- Increase the bus routes: Achieved
- Service rate improvement: Mostly achieved
- Inspection and maintenance: Mostly achieved
- Accident reduction: Mostly achieved
- Public awareness and satisfaction: Mostly achieved
- Operating cost covered by the fare: Difficult to achieve in the project period
- Service speed: Difficult to achieve in the project period

Furthermore, the achievement of overall goal within 3 years after completion of the Project estimated below

- Increase the bus passenger to 70,000 pax per day: Likely to achieve

The outputs, project purpose and overall goal of the Project have been mostly achieved or are expected to be achieved. Although the overall goal after the completion of the Project is likely to be achieved, the improvement of business management capacity (project outcome) and the covering of operating costs with fare revenue (project purpose) could not be achieved without the formulation of fare and subsidy policies and its implementation. In case a follow-up to the Project will be implemented in future, it would

be necessary to reconsider the overall goal, for example, change it to "improvement of business management capabilities".

3.4.5 Efficiency

The efficiency of the Project is fairly high.

It should be noted that PPCA and CBA covered the necessary costs for the bus operation such as i) construction of the bus depot (4ha), workshop for the bus maintenance and administration offices, ii) construction of the bus terminal, iii) development of 850 bus stops and shelters, iv) recruiting and employment for the staff and bus drivers, and v) maintenance of buses donated from China and Japan. These greatly contributed to the achievement of the project outputs in particular improvement of the bus operation capacity, improvement of the maintenance and inspection capacity, and establishment of the training system of bus drivers, the drivers' management system for safe driving, and the labor management system.

In addition, the allocation of JICA Experts, provision of the equipment, training in Japan, training in the third countries, and office equipment from Japanese side were appropriately carried out. In result, the technical transfer on the Cambodian side was well completed.

On the other hand, although the suspension of bus operations for 20 months due to COVID-19 pandemic brought delays in some activities such as the operation of the bus management system and the pilot project with bus priority signal control, these activities have been accomplished within the project period. Therefore, it was evaluated that it would not significantly impair efficiency.

3.4.6 Impact

The impact of the Project is fairly high.

Although achievement level of part of project outputs and project purpose were insufficient and lagging behind the set target indicators, some positive events were observed at the end of the Project and expected to bring tangible impacts within 3 years after completion of the Project. To be more specific, PPCA would reopen the 11 bus routes gradually in 2023 (2 Circular Lines were proposed to terminate due to their unprofitability). In addition, CBA are preparing the budget plan for the additional procurement of 100 buses.

The priority bus lane planned and designed as a pilot project in the course of the Project was examined in "ADB TA-9503 CAM: Supporting Sustainable Integrated Urban Public Transport Development (2021)" and was composed of a bus dedicated/priority lane adapting on four bus routes with 75 km sections and which would be realized as the ADB loan project after proceeding a feasibility study and approval procedures.

3.4.7 Sustainability

The sustainability of the Project is fairly high.

(1) Institutional Sustainability

Since improvement of public transport network and service based on the bus operation in Phnom Penh is consistent with the development strategy of Cambodia, the institutional sustainability is high.

(2) Organizational Sustainability

Since the commencement of the Project, CBA Governor, Deputy Governor, and section chiefs in CBA have been continuously engaged in the project activities. The Project Director only once changed in 2017 from the Deputy Governor in charge of infrastructure to another Deputy Governor in charge of finance. Since these counterparts of CBA and PPCA could continue to be engaged in bus operation, the organizational sustainability is high.

(3) Financial Sustainability

The financial sustainability is evaluated as fair. Before COVID-19 pandemic from 2017 to 2019, CBA received the sufficient amount of planned budget which contributed to continuous implementation of the project activities. However, suspension of the bus operation extended to 20 months under COVID-19 pandemic which might be caused by lack of financial resource due to the emergent expenditure required and opposition to deficit compensation for the bus operating cost. These circumstances are impairing the financial sustainability.

(4) Technical Sustainability

Technical sustainability is fairly high. In the Project, the manuals and guidebooks were developed and delivered for technical transfer such as "bus inspection and maintenance manual", "drivers safety manual", "bus facility design guidebook", "public transport priority measure guidebook", and "mobility management guidebook". These materials could help the counterparts to conduct necessary activities for bus operation by themselves. In addition, the supporting systems by using ICT were also developed such as bus operation management system and bus location information system. These systems could maintain the technical sustainability of the counterpart as well.

3.5 Conclusion

Although the Project had experienced a 20-month suspension of bus operation from March 2020 due to COVID-19 pandemic, activities related to Output 2 (inspection and maintenance) and Output 3 (safety operation and management) continued the technical transfer to the counterparts. During 10 months from the restart of bus operation in November 2021 to the end of the Project, the Experts implemented the activities of Output 1 (operation planning) and Output 5 (public transport priority measures). Even though Output 4 (business management improvement) is not attainable, the overall goal (70,000 pax per day) is assumed to be achieved after the completion of the Project. As a result, the Project reached satisfactory outcomes in terms of high relevance, high coherence, fair effectiveness, fairly high efficiency, fairly high impact, and fairly high sustainability.

CHAPTER 4. RECOMMENDATION AND LESSONS LEARNED

4.1 Recommendation to Implementing Agencies

(1) Gradual Expansion of Bus Routes and Operation

The Project restarted after the 20-month suspension of bus operation due to COVID-19 pandemic. The bus service resumed with the 4 major routes, Line 1A, 2, 3, and 4A/B, from November 2021. The number of passengers has been increasing from 2,000 pax per day in November 2021 to 6,000 pax per day in June 2022. In order to achieve the overall goal of the Project, “the number of bus passenger reaches to 70,000 pax per day”, the bus routes and operation need to be expanded gradually in a planned manner after completion of the Project. Achieving the project goal also contributes to solving the urban transport issues in Phnom Penh such as mitigating the traffic congestion and promoting the public transport.

Therefore, at the 6th JCC, the JICA Expert Team made the following recommendations to the CBA and reached a consensus in principle with the PPCA and CBA.

- [Phase I] CBA is recommended to restart additional 4 main feeder routes, Line 5B, 6, 8 and 9, when the number of passengers on currently operating routes reaches 50% of pre-COVID-19 level, say 9,700 pax per day.
- [Phase II] CBA is recommended to restart all bus routes when the number of passengers on 8 routes in Phase I reaches 50% of pre-COVID-19 level, say 12,100 pax per day. However, the circular routes in the central area of the city, Line 12 and 13, are suggested to terminate due to low profitability and stiff competition against RHS, private vehicle and motorbike in the city center.
- CBA is recommended to prepare and submit the operation and budget plans to PPCA for expansion of the bus operation. PPCA is required to coordinate with the MEF to obtain the necessary budget.



Source: JICA Expert Team based on data provided by CBA

Figure 4.1.1 Number of Passengers after Bus Operation Resumption in November 2021

Table 4.1.1 Financial Analysis of Phased Expansion of Bus Operation

	Phase 1 (Trunk+Main Feeder)		Phase 2 (Trunk+Feeder+Regional)	
	50% (12,100 pax)	80%	50% (13,700 pax)	80%
No of lines	8		11	
Required fleets	99		136	
Passenger scenario/sensitivity	50% (12,100 pax)	80%	50% (13,700 pax)	80%
Daily operational cost (USD)	16,302		21,348	
Daily revenue (USD)	2,731	4,370	3,099	4,958
Loss per day (USD)	-13,570	-11,931	-18,249	-16,390
Revenue coverage ratio	17%	27%	15%	23%

Source: JICA Expert Team

(2) Bus Operation, Staff Management and Vehicle Maintenance by using the Bus Operation and Management System

Due to the suspension of bus operation in 20 months, development of the bus operation and management system (BOMS) was delayed, especially recording the actual operation data, analyses, and finalizing the report function. Accordingly, operating the system and improving the bus operation plan were not fully carried out by the end of the Project. On the other hand, the discussions on KPIs of the bus operation and improvement of the system design could fulfill the functions of dashboard. These discussions and exercises helped to improve the capacity of CBA management staff especially the monitoring and evaluation of operation planning and its implementation.

Therefore, at the 6th JCC, the JICA Expert Team made the following recommendations to the CBA and reached a consensus in principle with the PPCA and CBA.

- CBA is recommended to do monitoring and evaluation on the actual bus operation by utilizing the system developed by the Project from the KPI's viewpoints, such as "operation rate", "start/end time", "running hours", and "operating frequency". Based

on the result of monitoring and evaluation, workshops for the drivers and commanders should be organized regularly for improving the bus operation.

- CBA is recommended to update the database of vehicle inspection and maintenance regularly by utilizing the vehicle management function in the system. Based on the updated data and its analysis, the inspection and maintenance of vehicle should be carried out in a regular manner.
- CBA is recommended to update the database of the drivers and commanders regularly by utilizing the staff management function in the system. Besides, CBA should instruct the dispatchers to report the record of the drivers and commanders including the attendance and vehicle information by the smartphone App on a daily basis. Based on the data and its analysis, CBA needs to monitor and evaluate the overspeed data, and provide the safety training to the unsafe and reckless drivers periodically.
- CBA is recommended to make an operation and maintenance contract with the local ICT vendor who developed the system in order to update the system and server, and fix upcoming errors. For taking account of the frequently occurrence of the internet connection errors and power cut at the CBA office, the database should be moved from the physical to cloud server.

(3) Vehicle Inspection and Maintenance for Expansion of Bus Routes

Throughout the project period, CBA has been engaged in the project activities and delivering significant outcomes related to the vehicle inspection and maintenance: i) established Maintenance Section in CBA and hired 18 mechanics, ii) shifted from outsource to inhouse force account inspection and maintenance, iii) fixed the initial failures of Japanese buses, and iv) conducted daily and periodically inspection and maintenance of 181 buses granted by Japan and China. Based on the budget plan prepared by CBA, PPCA had allocated the required expenses annually. After completion of the Project, the vehicle inspection and maintenance in a regular manner are expected to conduct in line with the expansion of the bus routes and operation.

Therefore, at the 6th JCC, the JICA Expert Team made the following recommendations to the CBA and reached a consensus in principle with the PPCA and the CBA.

- CBA is recommended to maintain the inspection and maintenance system with 18 mechanics, and to provide the necessary training to the mechanics to improve their capacity.
- CBA is recommended to update the plan of inspection and maintenance for procurement of the consumable supplies, spare parts and oil and lubricants without any delays. The maintenance cost is estimated from 5,800 to 9,200 USD per bus per year.
- CBA is recommended to recruit new mechanics and to provide the necessary trainings for strengthening the maintenance mechanism in response to the expansion of bus routes and operation.

Table 4.1.2 Maintenance Cost by Vehicle

	Japanese Heavy truck	Isuzu (2019)	Isuzu (2023)	Yutong with Clutch OH	Korean	Thailand
Lubricants	1,200	700	800	1,200	-	-
Filters	500	400	800	900	-	-
Tire and Battery	1,500	500	1,800	1,800	-	-
Repairing spare parts	1,000	1,000	1,200	3,500	-	-
Paint and Body repair	300	2,000	1,200	1,800	-	-
Total / year	4,500	4,600	5,800	9,200	-	19,440
per month	375	383	483	767	800	1,620

Source: JICA Expert Team based on data provided by CBA

(4) Retraining on Drivers for Safety Operation in response to Expansion of Bus Routes

As mentioned above, the bus service has started on the 4 major routes, Route 1A, 2, 3, and 4A/B, with 60 buses from November 2021, after 20 months of suspension due to COVID-19 pandemic. The PPCA and CBA retained all employees including drivers for this period. Accordingly, the operation could start smoothly on November 2, 2021, even though the decision to restart the bus was made in one day prior. The PPCA and CBA allocated 240 drivers on 60 buses by the shift work system and it might contribute to avoiding the deterioration of drivers' driving skills.

In order to ensure the safe operation and management of bus drivers in accordance with the expansion of bus routes, the JICA Expert Team made the following recommendations to the CBA at the 6th JCC and reached a consensus in principle with the PPCA and CBA.

- CBA is recommended to maintain the call-on desk at each terminal and check the safety including conditions of the driver and vehicle.
- CBA is recommended to maintain the training mechanism with two instructors and provide the necessary trainings for new drivers, drivers who tend to have accidents, and the dispatchers.
- CBA is recommended to recruit new drivers and dispatchers in response to the expansion of the bus routes.
- CBA is recommended to keep recording the accident data, establish the database and analyze the type of accidents and blackspots. Based on the database and accident analysis, safety management and training should be carried out.
- CBA is recommended to systemize the alcohol inspection and regular health checkup for the drivers.

(5) Planning and Consensus Building for Business Management Improvement

The Project carried out several activities for improving the bus business such as development of the operation cost model and passenger data, formulation of bus operation plan and its budget plan, preparation of the policy and consensus building for improving the fare and subsidy, and install of electronic payment system. The number of

passengers increased from 7,000 pax per day in the beginning of the project to 30,000 pax per day in maximum, and was steadily approaching 70,000 pax per day as the target number of the overall goal.

On the other hand, CBA expanded the service route from 3 to 13 routes and increased the number of buses from 57 to 235 in maximum. In response, the operation costs enlarged considerably, however the ratio of fare income to the operating cost remained low at 13%. Therefore, “covering the operating cost by the fare income”, is anticipated to be difficult to achieve after completion of the Project.

Therefore, the JICA Expert Team made the following recommendations to the PPCA and CBA at the 6th JCC.

- CBA is recommended to take measures highly effective in increasing revenues and reducing expenditure. The following measures are considered to increase revenues: “bus wrapping for advertisement”, “shuttle bus service for companies and school”, and “airport shuttle bus service”. Meanwhile, the followings could be effective for expenditure reduction: “replacement of consumable supplies such as spare parts and oils”, “competitive bidding for the consumable supplies” and “saving the fuel costs and extending the life of spare parts by eco-driving”.
- PPCA and CBA are recommended to prepare a mid-and long-term business management plan. Under its preparation, the fare and subsidy of bus in similar countries should be reviewed. Based on the plan, discussions on the policy of fare and subsidy and consensus building among the stakeholders are expected to continue to maintain the bus business sustainability.

At the 6th JCC, the PPCA acknowledged the need for cost reduction measures, bus fare measures, and subsidy measures, but remarked that it would be difficult to take urgent action in consideration of external conditions such as the soaring gasoline prices due to the conflict between Russia and Ukraine, poverty reduction and emergency economic measures under the COVID-19 pandemic.

(6) Continuation of Public Transport Priority and Mobility Management Measures

Based on the recommendation of “the Project for Comprehensive Urban Transport Plan in Phnom Penh Capital City (2014)”, the three pilot projects were selected through the discussions with the DPWT and CBA, i) bus priority lane, ii) bus priority signal control, and iii) paratransit management measures in association with RHS. In which, the bus priority signal control was carried out for a 5 km section on Charles de Gauule and Monyreth boulevards.

In addition, several activities were conducted to promote the mobility management such as “preparation and revision of the bus route map”, “formulation and dissemination of the bus promotion videos”, “dissemination of bus service by holding the workshops in all districts (Khan)” and “providing test-ride and shuttle bus services at school, universities and government agencies”. In order to achieve the overall goal of the Project, the number of passengers increased to 70,000 pax per day, the public transport priority measures and mobility management are inevitable to improve the public awareness and satisfaction of bus users.

The JICA Expert Team made the following recommendations to the PPCA, CBA as well as

DPWT at the 6th JCC and reached a consensus in principle with the PPCA, CBA as well as DPWT.

- PPCA, DPWT and CBA are recommended to review the public transport priority measures proposed by “the Project for Comprehensive Urban Transport Plan in Phnom Penh Capital City (2014)” and “ADB TA-9503 CAM: Supporting Sustainable Integrated Urban Public Transport Development (2021)”. Afterward, the short-and mid-term action plans aiming at public transport improvement needs to be developed. Lastly implementation of the action plan is expected to carry out after making agreement with MEF and relevant ministries.
- PPCA and CBA are recommended to take mobility management measures based on “Mobility Management Handbook in 2020 by JICA H.Q.” and “Mobility Management Guide” prepared in the Project for enhancing the awareness and satisfaction of the bus services. Public awareness survey for bus users and non-users should be also conducted and examined periodically.

4.2 Recommendation to Further Technical Assistance

The Project was originally scheduled to be completed within 4 years. However, it was extended to 5 years and 8 months in response to the external conditions such as delay of delivery of Japanese buses, fixing the initial failure of Japanese buses and the suspension of bus operation for 20 months due to COVID-19 pandemic. In particular, due to the long-term suspension of bus service in the second half of the project period, it took certain time to catch up on the skills acquired before the COVID-19 pandemic. As a result, “bus operation capacity improvement (Output 1),” “safety driving management (Output 3),” and “public transport priority measures (Output 5)” were difficult to be achieved fully in the project period.

Under such circumstances, Cambodia side proposed to extend the Project at 4th JCC meeting in July 2021 and requested to implement the Phase 2 Project and submitted application form formally to the EOJ and JICA Cambodia Office. In addition, Cambodia side requested to dispatch the supplemental and short-term Experts after completion of the Project at 5th JCC meeting in February 2022.

In response to reopen all bus routes in 2023, allocation of the supplemental Experts is strongly recommended to continue the project activities and realize the achievement of project outputs. The Experts required to support to achieve the project goal are considered as “public transport and bus operation management expert” and “vehicle maintenance and safety management expert”.

Cambodia side also requested to implement a technical assistance project for strengthening the capacity of PPCA based on the recommendation from “the Data Collection Survey on Urban Transport in Phnom Penh (on-going)”. In order to provide seamless assistance, these supplement and short-term expert mentioned above could be included in the new technical assistance project when realized.

4.3 Lessons Learned

(1) Continuity of Policy Decision-making on the Cambodian side and Ownership and Commitment

Cambodia government has been committed to developing the necessary facilities for the bus operation without any delay, following the agreement in “the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh (2016)”. These commitments by Cambodian side include i) construction of the bus depot (4ha) including a workshop for the bus maintenance and an administrative office building, ii) construction of the bus terminal, iii) construction of 850 bus stops and shelters, iv) recruitment of the staffs and bus drivers, and v) maintenance of buses, Accordingly, the ownership and commitment of the Cambodia side were strongly secured in the Project.

Although the Project was implemented for a long period, extended to 5 years and 8 months, the CBA Governor, Deputy Governor, and other section chiefs in CBA have been continuously engaged in the project activities. The Project Director, the Deputy Governor of PPCA, was changed once in the middle of the project, however the successive Deputy Governor in charge of finance matters strongly supported decision-making in the Project during the remaining project period. Such continuous participations from the Cambodia side led to ensuring consistency in the activities and decision-making related to the Project. The Expert Team held various coordination and technical meetings with the counterparts, not only JCC meetings but also regular discussed with CBA Governor and management staffs. The activities and outputs were also reported to the Deputy Governor of PPCA periodically. These close communications among Cambodian side and Expert Team could contribute to enhancing their ownership and securing the commitment of Cambodia side.

(2) Coordination between Grant Aid and Technical Assistance Project

According to “the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh (2016)”, 80 buses were granted from the Japanese government to CBA. However, the Experts and CBA had to tackle with the initial failures of the Japanese buses. The typical defects were found in 1) bus door due to air leaks, 2) air conditioner, 3) electrical components and 4) paint peeling. In total, 364 cases were reported and it was equivalent to recall by Japanese standards. In response to such defects, one year warranty was added through the discussion among CBA and the Japanese bus supplier. CBA mechanics fixed all initial defects with the supports of the Experts. The supplier provided all necessary equipment and materials for fixing them in the warranty year. After the warranty validation, CBA continues maintenance by themselves since such defects as paint peeling still have been occurred.

Not only this Grant Aid project, but also other equipment procurement and infrastructure development projects have been observing some low-quality products such as initial failures and poor quality constructions. In response to the initial failures on granted Japanese buses, the Project made the following efforts: i) technical supports to the mechanics, ii) coordination among CBA, the supplier, the bus manufacturer, and the assembler, and iii) regular meeting and report to the supplier, the vehicle company and the

assembler. This is a good example of coordinating the Grant Aid and Technical Assistance projects to deal with and resolve the defects.

(3) Involvement of the Private Sector for the Project Sustainability

The Project supported the improvement of convenience for the bus users and the efficient bus operation by developing the ICT systems such as the bus location system and bus operation and management system. Before developing the ICT systems, the Experts reviewed the examples of introducing ICT systems by JICA technical assistance projects in other countries and found many cases installed the made-in-Japan system. Since the maintenance cost of the Japanese system tended to be expensive and the counterpart could not afford to the cost, the system is likely to have inadequate maintenance such as fixing the system errors and updating OS after the project completion. For taking account of such cases, the Experts tried to find the local ICT vendor to develop the required system. There are some ICT vendors in Cambodia who has experienced to develop the similar systems such as truck operation and management system. Finally, the Project procured to develop the ICT system for bus operation management from the local ICT vendor after the evaluation of their capacity and experience. The system design was discussed repeatedly among the Experts, CBA and the local vendor. After revision of the demo in several times, the most suitable system was finally developed for the bus operation and management at CBA.

The bus location data are accumulated at the server at CBA office and provided to the three private companies, namely iTsumo Tech, TosJis, and Stop Near Me, without any charge. In which iTsumo Tech and TosJis have developed their own smartphone Apps. By January 2020, the number of downloads of the app by iTsumo Tech had exceeded 60,000. Considering the smartphone ownership rate in Cambodia, it can be judged that the majority of bus users, 30,000 pax per day at maximum, could access to the bus location information through the smartphone Apps. In April 2022, iTsumo Tech and CBA signed the transfer agreement of the App, namely City Bus App, and currently CBA has been operating the apps and raising the fund. iTsumo Tech is coordinating with CBA and “JICA Pilot Project – Digital Currency Verification in Cambodia¹” to install the digital payment system, Bakong developed by the Central Bank of Cambodia, into the City Bus App.

Compared to Japan and other developed countries, the ICT area in developing countries seems to have a larger market because of more pioneering technology developed by young engineers under limited or no regulations. In consideration with the difficulties of the maintenance from outside country, the Project utilized the local resource to develop the ICT system. As a result, the counterpart could operate and maintain the system by themselves after the Project with the supports from the local ICT vendors.

(4) Potential to expand from data recording to data digitization and further to DX

At the beginning of the Project, CBA recorded on paper all bus operation records by dispatchers, passenger count records by drivers, and ticket sales and revenue records. These records were processed into data on a daily or monthly basis with limited

¹ The pilot project conducted as a part of “Data Collection Survey for Global DX Mainstreaming” in 2022 by JICA

information such as the number of passengers and ticket sales for monthly reports to the PPCA. Therefore, at the beginning of the Project, the need to digitize these paper records and utilize them in the preparation and improvement of operation plan, formulation and review of management plan, etc. was confirmed through the discussion among CBA management and Expert Team. And as part of monitoring indicators of the Project, "management indicators (number of staff, number of bus fleets, number of accidents by type, number of bus maintenance and repair work)", "operational indicators (operation plan and actual operation, average speed)" "business indicators (number of passengers, revenue, expenditure)" etc. were prepared in digital form every month and utilized in management, operation, and business plan of CBA and their improvements.

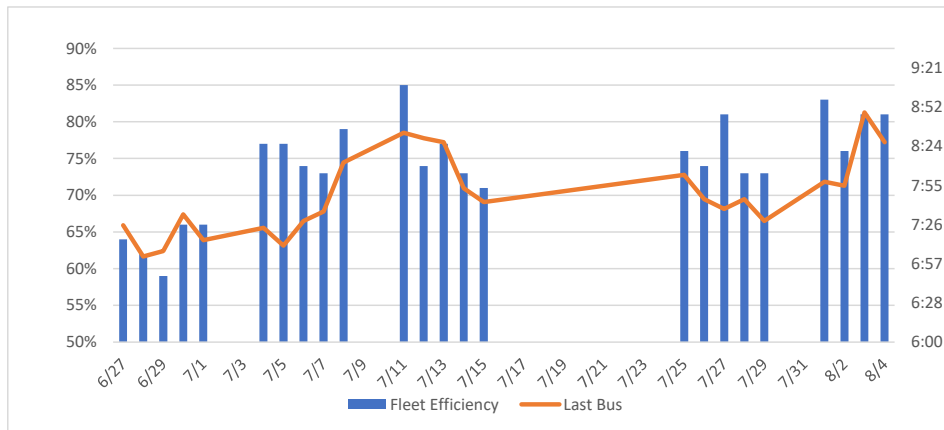
On the other hand, among the above indicators, the operational indicators require a considerable amount of work to be digitized and it takes time for the information to be conveyed to CBA management, making it impossible to grasp the operational status and formulate improvement plan in a timely manner. Therefore, by introducing a bus operation management system (BOMS) and enhancing the system's dashboard function, it became possible to monitor typical operational indicators such as "bus utilization rate," "first and last bus times," "average speed," and "frequency of bus operations" on a daily basis.

As a result of the improvement of this dashboard function in early July 2022, (until then, the operational indicators were periodically shared with CBA management and dispatcher), it was confirmed that there is a trend leading to improvements in operational indicators, and the continued operation and use of BOMS after the project completion expects to improve business management, operations, and business plan of CBA.

ល.រ	លេខបណ្តាញ	ពេលវេលា				គុណភាព			
		ចេញ	ដល់	សរុប	មធ្យម	ចេញ	ដល់	សរុប	មធ្យម
1									
2	3.0119	5:30	7:55	8:35	11:41				
3	3.0120	5:40	8:05	8:45	11:41				
4	3.0121	6:00	8:25	9:05	11:41				
5	3.0122	6:15	8:40	9:20	11:59				
6	3.0123	6:30	8:55	9:35	12:00				
7	3.0124	6:45	9:10	9:50	12:16				
8	3.0125	7:00	9:25	10:05	12:25				
9	3.0126	7:15	9:40	10:20	12:35				
10	3.0127	7:30	9:55	10:35	12:45				
11	3.0128	7:45	10:10	10:50	12:55				
12	3.0129	8:00	10:25	11:05	13:05				
13	3.0130	8:15	10:40	11:20	13:15				
14	3.0131	8:30	10:55	11:35	13:25				
15	3.0132	8:45	11:10	11:50	13:35				
16	3.0133	9:00	11:25	12:05	13:45				
17	3.0134	9:15	11:40	12:20	13:55				
18	3.0135	9:30	11:55	12:35	14:05				
19									
20									

Source: JICA Expert Team (provided by CBA)

Figure 4.3.1 Bus Operation Record by Dispatcher



Source: JICA Expert Team based on data provided by CBA

Figure 4.3.2 Bus Operation Rate and Time of Last Bus After Introduction of BOMS Dashboard Function

(5) Rollout of Project Outputs through Collaboration with Donors

The Project aimed at improvement of the transport planning capacity by implementing the public transport priority measures by the form of the pilot project. The Experts and the counterparts selected the pilot route, a 5 km section on Charles de Gaulle and Monyreth boulevards, for implementing the priority measures of public transport and the traffic management plan. Subsequently, the blueprint of the pilot project was agreed in 3rd JCC meeting on July 4, 2019, including i) bus priority lane, ii) bus priority signal control, and iii) paratransit management measures. Finally, regarding the cost, it was also agreed that the bus priority lane would be costed by Cambodia side, meanwhile the bus priority signal control and paratransit management measure would be covered by the Project. In which, the signal control was conducted in May and June 2022, and it was confirmed the measure was effective in improving the operation speed of buses. Meanwhile, the bus priority lane has not conducted in the project period due to COVID-19 pandemic and lack of the budget by the emergent expenditures of the PPCA, even though the project cost had included the 2019/20vbudget plan and approved by PPCA and MEF.

Therefore, in collaboration with “ADB TA-9503 CAM: Supporting Sustainable Integrated Urban Public Transport Development (2021)”, the feasibility of bus priority lane along the major corridors with 75 km section was examined by using the traffic data, concept plan and design standards studied by the Project. As a result, the bus priority lane was evaluated as feasible in terms of engineering and economic aspects. Afterward, ADB dispatched the Country Programming Mission in April 2022 and discussed with PPCA about the implementation of the bus priority lane and PPCA requested it to ADB formally.

The result of the pilot signal control project suggested a possibility of optimization of the signals installed by “the Project of Development of Traffic Management System in Phnom Penh (2015)” by using the GPS data of bus under the Project. Currently “the Project for Capacity Development on Comprehensive Traffic Management Planning and Traffic Control Center Operation and Maintenance in Phnom Penh (on-going)” is ongoing and it

is expected to collaborate with this ongoing project to optimize the signal control and to improve the punctuality and operation speed of the bus services. Likewise, the Project made efforts to collaborate with other donors to rollout the project outputs.

(6) Seamless Project Activities under COVID-19 pandemic

The Project faced the 20-month suspension of the bus operation from March 2020 and the travel suspension of the short-term Expert by JICA due to COVID-19 pandemic. For this reason, the Experts had to continue working remotely.

- The trainings and seminars of safety driving and management were conducted with the supports of ILO and WHO experts based on the discussion with the management staffs of CBA and countermeasures have been taken such as bus ventilation test using smoke generator, procurement of hypochlorous acid generator for infection prevention, formulation of safety operation guide and video under COVID-19.
- Since all 235 buses parked in the bus depot during the suspension period, the inspection and maintenance kept continuing with the remote supports from the Expert by using aid equipment such as a smart glass.
- As part of the mobility management activities, the Project developed “the video of infection prevention in bus”, “infection prevention poster”, and “QR code of COVID-19 Contact-Confirming with the patients”

These continuous efforts and activities mentioned above during COVID-19 pandemic enabled to restart the bus operation smoothly in November 2021. The number of passengers has been increasing, from 2,000 pax per day immediately after the restart to 6,000 pax per day in June 2022.

(7) Public Relations Activities to Raise the Awareness of Bus

As part of mobility management measures, public relations activities were taken such as preparation and revision of the bus route map, formulation and dissemination of the bus promotion videos, distribution of the information about bus service and various events by Facebook, SNS, TV and radio. According to the interview survey on bus users and non-users conducted immediately after the restart of bus operation in December 2021, 82% of the interviewees obtained the restart news. The mediums informing the bus restart were mainly CBA Facebook (33%), newspaper (29%), and radio (10%). The results of this survey confirmed the public relations activities are functioning effectively to improve awareness of the bus service.

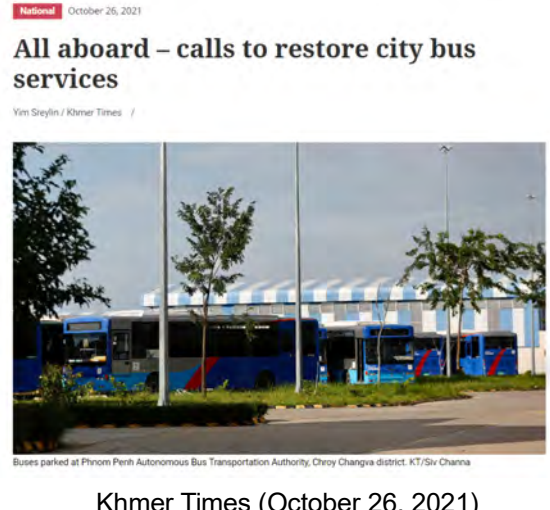


Figure 4.3.3 Newspaper Articles on Bus Service

ANNEX

ANNEX 1: RESULTS OF THE PROJECT

ANNEX 2: LIST OF PRODUCTS PRODUCED BY THE PROJECT

ANNEX 3: PDM (ALL VERSIONS OF PDM)

ANNEX 4: R/D, M/M, MINUTES OF JCC

ANNEX 5: MONITORING SHEET 1-10

ANNEX 1: Results of the Project

- ANNEX 1.1 Dispatch of Experts
- ANNEX 1.2 List of Counterpart
- ANNEX 1.3 Equipment Provided
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Annex 1 Results of the Project

Annex1.1 Dispatch of Experts

※Work in Japan/ 3rd Countries are excluded

No.	Name	Assignment	Duration of dispatch
1	Kiminari Takahashi	Chief Advisor/ Public Transport Policy	16 Jan – 9 Feb. 2017 (26 Days) 27 Apr – 17 May 2017 (21 Days) 28 Jun – 18 July 2017 (21 Days) 21 Aug – 03 Sep 2017 (14 Days) 30 Nov – 29 Dec. 2017 (30 Days) 18 Jan. – 21 Jan. 2018 (4 days) 16 Feb. – 10 March 2018 (23days) 12 May – 10 June 2018 (30 Days) 10 Aug – 19 Aug. 2018 (10 Days) 23 Aug – 25 Aug. 2019 (3 Days) 16 Sept – 30 Sep. 2018 (15 Days) 05 Dec. – 17 Dec. 2018 (13 Days) 22 Dec. – 28 Dec. 2018 (7 Days) 11 Jun. – 15 Jul. 2019 (5 Days) 3 Jul. – 7 Jul. 2019 (5 Days) 24 Sep. – 29 Sep. 2019 (6 Days) 3 Oct. – 23 Oct. 2019 (21 Days) 3 Dec. – 30 Dec. 2019 (28 Days) 15 Jan. – 17 Feb. 2020 (34 Days) 16 Jan. – 08 Feb. 2022 (24 Days) 12 Jun. – 25 Jun. 2022 (14 days) 17 Jul. – 30 Jul. 2022 (14 days)
2	Kov Monyrath	Deputy Chief Advisor/ Public Transport Policy (2)	31 Jan. – 13 Mar. 2017 (42 Days) 06 May – 07 June 2017 (33 Days) 28 June – 05 July 2017 (8 Days) 11 Dec. – 24 Jan. 2018 (45 Days) 9 Feb. – 10 March 2018 (30 Days) 25 Apr – 08 June 2018 (45 Days) 20 June – 08 July 2018 (19 Days) 26 Sept – 21 Oct 2018 (26 Days) 13 Jan. – 25 Jan. 2019 (13 Days) 07 Feb. – 15 Feb. 2019 (9 Days) 18 June – 02 Aug. 2019 (46 Days) 02 Oct. – 16 Oct. 2019 (15 Days) 15 Jan – 30 Jan 2020 (16 Days) 13 May – 29 May 2020 (17 Days) 07 July – 17 July 2020 (11 Days) 25 Aug. – 28 Aug. 2020 (4 Days) 7 Sep. – 15 Sep. 2020 (9 Days) 19 Oct. – 28 Oct. 2020 (10 Days) 11 Jan. – 15 Jan. 2021 (5 Days) 22 Jan. – 27 Jan. 2021 (6 Days) 21 Feb. – 26 Feb. 2021 (6 Days) 23 March – 26 March 2021 (4 Days) 22 and 28 Apr. 2021 (2 Days) 25 May – 28 May 2021 (4 Days) 03 June – 09 June 2021 (7 Days) 23 June – 24 June 2021 (2days) 1-4, 20-26 July 2021 (11 Days) 3-6, 16-26 Aug 2021 (15 Days) 7 Sep. -10 Sep. 2021 (4days) 28 Oct. – 31 Oct. 2021 (4 Days) 01 Nov.- 08 November 2021 (8 days) 20 Jan.- 03 Feb. 2022 (15Days) 14 Feb. – 21 Feb. 2022 (8 Days)

No.	Name	Assignment	Duration of dispatch
			1 April – 12 April 2022 (12 Days) 16 May – 31 May 2022 (16 Days) 1 Jun. – 6 Jun. 2022 (6 days)
3	Frits Olyslagers	Bus Operation Planning	22 Jan. – 10 Feb. 2017 (21 Days) 30 Apr. – 24 May 2017 (20 Days) 14 Oct. – 04 Nov. 2017 (21 Days) 27 Nov. – 17 Dec. 2017 (21 Days) 18 Feb. – 01 March 2018 (12 Days) 31 Mar. - 17 April 2018 (18 Days) 29 June – 05 July 2019 (7 Days) 10 Jan – 04 Feb. 2020 (26 Days) 19 Mar. – 20 Mar. 2020 (2 Days)
4	Koji Uzawa	Bus Vehicle Maintenance	25 Jan. – 10 Mar. 2017 (45 Days) 19 Jun. – 04 July 2017 (16 Days) 10 Oct. – 08 Nov. 2017 (30 Days) 10 Mar. – 08 April 2018 (30days) 19 June – 15 July 2018 (27day) 18 Sept. – 04 Nov. 2018 (48 days) 25 Feb. – 07 Apr. 2019 (42 days) 11 June – 07 July. 2019 (27 Days) 17 Oct – 10 Nov. 2019 (25 Days) 01 Feb – 23 Feb 2020 (23 Days) 15 Jan.- 29 March 2021 (74 Days) 11 Jan. – 27 Jan. 2022 (17 Days) 2 Feb. – 18 Feb. 2022 (7 Days) 23 June – 31 July 2022 (39 Days)
5	Minoru Murata	Bus Driver Training	29 June – 12 July 2017 (14 Days) 27 Nov – 26 Dec. 2017 (30 Days) 15 Jan. – 6 Mar. 2018 (51 days) 11 June – 21 July 2018 (41days) 2 Sept – 07 Oct. 2018 (36 Days) 25 Nov.- 23 Dec. 2018 (29 Days) 24 June – 31 July 2019 (38 Days) 16 Jul. – 7 Aug. 2022 (23 Days)
6	Natsuki Shimegi	Business Management	20 Aug. – 14 Sept. 2017 (26 Days) 23 Nov. – 22 Dec. 2017 (30 Days) 15 Sep. – 14 Oct. 2018 (30 Days) 05 Jan. – 03 Feb. 2019 (30days) 29 Jun. – 5 Jul 2019 (7 Days) 12 Jul. – 26 Jul. 2019 (15 Days) 19 Dec. – 06 Jan 2020 (19 Days) 23 Jan. – 3 March 2022 (40 Days) 12 Mar. 2022 (1 Day) 21 June – 2 July 2022 (12 Days)
7	Shuichi Yashiro	Traffic Control and Safety	16 Aug. – 10 Sept. 2017 (26 Days) 07 Jan. – 05 Feb., 2018 (30 Days) 08 Sept. – 22 Sept. 2018 (15 Days) 01 Dec. – 15 Dec. 2018 (15 Days) 07 July – 11 Aug. 2019 (34 Days) 27 Nov. – 26 Dec. 2019 (30 Days) 23 Feb. – 19 March. 2020 (26 Days) 24 Apr. – 11 June 2022 (49 Days) 27 June – 23 July 2022 (27 Days)
8	Hiroyuki Yamashita	Bus Facility Planning	31 Jan. – 14 Feb. 2017 (15 Days) 22 May – 10 June 2017 (20 Days) 11 Oct. – 21 Oct. 2017 (11 Days) 4 Dec. – 17 Dec. 2017 (14 Days) 28 May – 09 June 2018 (13 Days) 01 Oct – 13 Oct. 2018 (13 Days)

No.	Name	Assignment	Duration of dispatch
			13 March – 22 March 2019 (10 Days)
9	Takayoshi Ito	IT System/Data Management	15 May – 7 June 2017 (24 Days) 01 Nov – 30 Nov 2017 (30 Days) 1 Feb. – 24 Feb. 2018 (24days) 21 Apr. – 04 May 2019 (14 Days) 25 Aug. – 21 Sept 2019 (28 Days) 14 Nov – 13 Dec. 2019 (30 Days) 22 Jan – 20 Feb. 2020 (30 Days) 16 June – 15 July 2022 (30Days)
10	Toshiaki Takeda	Mobility Management	06 Feb. – 16 Feb. 2017 (11 Days) 15 May – 26 May 2017 (12 Days) 7 Dec.- 16 Dec. 2017 (10 Days) 03 Apr – 12 April 2019 (10Days) 23 Jan – 29 Jan 2020 (7days) 06 May – 25 May 2022 (20 Days)
11	Mihoko Ogasawara	Stakeholder Management	17 Jan. – 20 Jan. 2018 (4 Days) 01 Sept. – 14 Sept. (14 Days) 10 March- 24 March 2019 (15 Days) 17 Aug- 15 Sept. 2019 (30days) 11 May – 30 May 2022 (20 Days)
12	Kayoko Miyao	Monitoring and Evaluation	09 Oct. – 27 Oct. 2017 (19 Days) 28 Apr – 15 May 2018 (18 Days) 26 Nov. – 08 Dec. 2018 (13Days) 28 May – 11 Jun 2019 (15 Days) 12 Nov – 26 Nov. 2019 (15 Days) 15 Jan – 29 Jan. 2020 (15 Days) 13 Jan – 04 Feb. 2022 (23 Days) 24 July – 15 Aug. 2022 (23 Days)
13	Dr. Masaru Yajima	Bus Operator Advisory Group (1)	30 Jun. – 1 Jul, 2017 (2 days) 19 Jan. – 21 Jan. 2018 (3 Days) 01 Feb. – 03 Feb., 2019 (3 days) 06 Feb – 09 Feb. 2020 (4 Days)
14	Dr. Kunihiro Sakamoto	Bus Operator Advisory Group (2)	30 Jun. – 1 Jul, 2017 (2 days) 19 Jan. – 21 Jan. 2018 (3 Days) 01 Feb. – 03 Feb., 2019 (3days) 06 Feb – 11 Feb. 2020 (6 Days)
15	Tomohiko Nakamura	Preparatory Survey Review (Team Leader)	02 Apr. – 08 Apr. 2017 (7days)
16	Kobayashi Kiyohito	Preparatory Survey Review (Bus Specification and Equipment)	02 Apr. – 08 Apr. 2017 (7days)
17	Takayuki Yoshimi	Bus Facility Planning (2)	29 May – 02 June 2017 (5days)
18	Masaya Nakano	Mobility Management (2)	10 Dec. – 23 Dec. 2018 (14 Days) 24 March- 7 April 2019 (15 Days) 27 Nov – 26 Dec. 2021 (30 Days) 17 Apr – 30 April 2022 (14 Days) 01 Aug – 17 Aug. 2022 (17 Days)
19	Yuki Takada	Mobility Management (3)	28 May – 09 June 2018 (13 Days) 1 Oct. – 13 Oct. 2018 (13 Days) 13 Dec. – 22 Dec. 2019 (10 Days) 27 Feb. – 18 March 2020 (21 Days) 17 Apr – 30 April 2022 (14 Days) 04 Jun- 02 July 2022 (29days)
20	Sungjoon Hong	Bus Facility Planning (3)	23 Jan – 06 Feb 2020 (15 Days) 27 Feb. – 18 March 2020 (21 Days) 17 May – 15 June 2022 (30 Days) 28 June – 13 Aug. 2022 (47days)

Annex 1.2 List of Counterpart

S/N	Member	Title/ Organization	Name	Duration of Engagement
1	Project Director	Deputy Governor, PPCA	H.E Keut Chhe	Jan 2017 – Aug 2022
2	Deputy Project Director	Deputy Director, DPWT/PPCA	Chu Kimtry	Ditto
3	Project Manager	Governor, CBA	Ean Sokhim	Ditto
4	Counterpart	Director of Urban Management and other management staffs		Ditto
5	Counterpart	Advisor and other management staffs, DPWT/PPCA		Ditto
6	Counterpart	Deputy Governors and other management staffs, CBA		Ditto

Annex1.3 Equipment Provided

1) List of equipment

No.	Arrival	Name of equipment	Model	Maker	Unit Price (USD)	No. of Units	Place	Procurement	Purpose	Status/ Condition
1	2017/1/17	Laptop PC	HP Lap top Bro Book 440 G4	HP	1,116	1	CBA	By the Project	Project use	Working
2	2017/1/20	Multi-purpose photo copier (with feeder)	Canon IR 2545	Canon	4,524	1	CBA	By the Project	Project use	Working
3	2017/1/17	Projector	Epson LCD Project EB-W04	Epson	670	1	CBA	By the Project	Project use	Working
4	2017/1/17	Laptop PC	HP Note book 384 G3	HP	659	1	CBA	By the Project	Project use	Working
5	2019/3/14	BOMS (Bus Operation Management System)		Developed by the Project	164,051	1 LS	CBA	By the Project	Project Use	Working
6	2019/11/20	Computer Laptop	MSI 17.3 GF75 9RCX THIN BEZEL	MSI	1,039	1	CBA	By the Project	Project use	Working
7	2020/6/1	Hypochlorous acid generator	Chlora E-na (AL-790)	Chlora E-na	3,434	1	CBA	By the Project	Project Use	Working
8	2020/6/1	Hypochlorous acid generator	ALTRON-mini (AL-700A)	ALTECH	835	5	CBA	By the Project	Project Use	Working
9	2021/5/12	Smart Glass	Moverio BT-300	EPSON	588	3	CBA	By the Project	Project Use	Working
10	2022/3/29	Router for optical communication control	IE048-480 SP Series (Gigabit small form-factor pluggable Module) IE300 Series (Industrial Ethernet Layer 3 switches)	Allied Telesis	70,377	1 LS	DPWT/ TCC	By the Project	Project Use	Working

Annex 1.4 Seminar/Training/Workshop/Meetings: Trainings are shown in Annex 1.7 in this document

Meetings

S/N	Meeting name	Date	Duration	No. of participants	Target	Remarks
1	Kick off meeting	8 th February, 2017	1 day	18	Introduction of the Project Presentation of Draft Work Plan Confirmation of Agreements in Record of Discussion	
2	1 st Joint Coordinating Committee Meeting	9 th May, 2017	1 day	31	Confirmation of minutes of Kick-off meeting and matters arising and action taken Presentation of the Work Plan Presentation of progress of the project	
3	2 nd Joint Coordinating Committee Meeting	8 th June, 2018	1 Day	41	Confirmation of Minutes of 1 st JCC and Matters arising and Action taken Presentation -Major Progress by CBA -Summary PIBO Progress Report -Matters arising i) Institutional changes in CBA ii) Bus network review and improved network plan iii) Recruitment and training for drivers/mechanics iv) Proposed bus priority measures and pilot project v) Public perception and customer satisfaction -Discussion -Any Others Business	
4	3 rd Joint Coordinating Committee Meeting	04 th July, 2019	1 Day	49	I-Launching Ceremony for Bus Management System and App-based Bus Location system II-The 3 rd Joint Coordinating Committee (JCC) -Presentation 1- Major Progress of City Bus Authority by Mr. Ean Sohkin 2- Summary PIBO Progress Report by Mr. Takahashi -Matters Arising (Issues for discussion) 1-Draft Action Plan and Discussion on Bus Priority Measures as Pilot Project by Mr. Sokhim. 2-Draft Action Plan and Discussion by Mr. Takahashi	

S/N	Meeting name	Date	Duration	No. of participants	Target	Remarks
5	4 th Mini Joint Coordinating Committee Meeting (Mini JCC)	16 th July, 2021	1 Day	21	<p>The 4th Mini Joint Coordinating Committee Meeting</p> <p>-Presentation</p> <p>1-Airring for safe and reliable public transportation: International experience for public transport operation during Covid 19 pandemic- JICA HQ</p> <p>2-Major Progress by Mr. Team Sokhim</p> <p>3-Summary PIBO Progress Report by Mr. Takahashi</p> <p>-Matter Arising (Issues for</p> <ul style="list-style-type: none"> • Prepare the step-by-step plan to resume the bus operation in and from September 2021 adopting the 'New Normal' life and propose it to H.E. Governor to seek for his approval on the restoration of the bus operation. • Prepare and implement the concrete countermeasures against COVID-19 infection and seek for the approval on these countermeasures by the Ministry of Health. • Prepare the route and operation plan considering also the COVID-19 quarantine and treatment facilities with fewer bus services to test the preference of the bus service by passengers and users. • Also, secure a sufficient number of bus fleets and services for essential needs and workers and set aside some budget and implement countermeasures to ensure the safety and security of the drivers and potential COVID-19 patients. • Hold a technical meeting as necessary to follow up the actions listed above: (i) proposed COVID-19 countermeasures and its approval by the Ministry of Health and (ii) step-by-step operational plan starting from the small scale operation to full scale operation. 	
6	5 th Joint Coordinating Committee Meeting (Mini JCC)	04 th February, 2022	1 Day	25	<p>The 5th Joint Coordinating Committee Meeting</p> <p>-Presentation</p> <p>-Major Progress by CBA</p> <p>-Summary PIBO Progress Report</p> <p>-Summary Monitoring Sheet ver. 10</p> <p>-Matters arising</p> <p>-Remaining tasks towards project completion</p> <p>-Proposal on Overseas training</p> <p>-Proposal on Pilot bus priority signal</p> <p>-Toward full-scale operation of City bus: demand retrieved, followed by fare and Subsidy policy.</p> <p>-Discussion</p> <p>-Venue of oversea training</p> <p>-Implementation of Pilot bus priority signal</p>	

S/N	Meeting name	Date	Duration	No. of participants	Target	Remarks
7	6 th Joint Coordinating Committee Meeting (Will be completed after the meeting)	9 th August 2022	1 Day	46	<p>The 6th Joint Coordinating Committee Meeting</p> <ul style="list-style-type: none"> -Presentation -Major Achievements by CBA -Summary Project completion report by JICA Expert team -Matters arising and Actions to be taken <ol style="list-style-type: none"> i. Proposed staged plan towards full-scale operation of City Bus ii. Bus repair plan and required budget for full-scale operation iii. Safety measurement for full-scale operation and training for reckless drivers iv. Financial plan under full-scale operation and proposals on transformation of CBA to Public Administrative Enterprise v. Improved bus priority and mobility management -Discussion <p>the following issues were discussed and agreed upon with the Cambodian side to ensure that the project results would be realized after the project completion</p> <ul style="list-style-type: none"> • Stepwise expansion of bus routes • Continuous implementation of bus fleet inspection and maintenance, driver's employment and training • Implementation of revenue expansion and cost reduction measures • Implementation of public transport priority measures and mobility management measures. 	

Annex 1.5 Local cost by Japanese/Cambodian side

1) Bearing cost by Japanese side

Refer ANNEX 1.3 in this document.

2) Bearing cost by Cambodian side

Unit: Million Yen

	Item	2017	2018	2019	2020	2021	
1	Construction of a 4-hectare bus depot, maintenance workshop, and administration building	566.4	141.6	0.0	0.0	0.0	
2	Land acquisition cost for Bus depot	0.0	0.0	0.0	0.0	0.0	Procured by PPCA
3	Construction of terminals	0.0	0.0	22.0	5.8	14.8	
4	Construction of approximately 850 bus stops and bus shelters;	15.3	0.1	0.0	0.2	0.2	
5	Recruitment and employment of staff, including drivers	105.1	198.4	287.3	245.4	241.6	
6	Provision of costs for bus operation and maintenance after the buses are in service	84.3	149.7	79.4	110.5	53.8	

ANNEX 1. 6 Training in Overseas

Date	Country (City)	Major Contents	Participants
2018/2/25 ~ 2018/3/2	Singapore 、 Malaysia (KL)	<ul style="list-style-type: none"> • Bus Network Planning Techniques • Improvement of bus corporation management capacity 	Mr. Chou Meng Chan, Deputy Director of Administration, PPCA Mr. Ean Sokhim, Governor, CBA. Mr. Ear Phearith, Deputy Governor, CBA Mr. Lay Sokraksme, Chief of Inspection and Dispute Resolution, CBA Mr. Sao Sovannary, Technical Officer, CBA Mr. TAKAHASHI Kiminari, Chief Advisor , JICA PiBO Dr. Kov Monyrath, Deputy Chief Advisor/ Public Transport Policy (2), JICA PiBO
2019/2/16 ~ 2019/2/26	Japan (Tokyo, Nagoya, Kawagoe)	<ul style="list-style-type: none"> • Public Transportation Policy and Priority Measures • Efficient bus network planning and safe operation 	Mr. Ean Sokhim, Governor, CBA. Mr. Phoeun Rithy, Vice of Planning and Investment office/PPCA Mr. Neang Monyroath, Official, Urbanization/PPCA Mr. Orl Sochea, Chief Mechanic/CBA Mr. TAKAHASHI Kiminari, Chief Advisor, JICA PiBO Dr. Kov Monyrath, Deputy Chief Advisor/ Public Transport Policy (2), JICA PiBO

Date	Country (City)	Major Contents	Participants
2019/10/6 ~ 2019/10/11	Vietnam (Hanoi), Singapore	<ul style="list-style-type: none"> Public Transportation Policy and Priority Measures Improving the efficiency of bus operations and business 	Mr. Met Measpheakdey, Deputy Chief of Directorate (PPM/Mol), PPCA Mr. Prom Kampol, Chief of Road Safety Office, DPWT Mr. Kun Chanpagna, Vice governor of CBA Mr. Danh Darith, Chief Accounting/CBA Mr. Orl Sochea, Chief Mechanic/CBA Mr. TAKAHASHI Kiminari, Chief Advisor, JICA PiBO Dr. Kov Monyrath, Deputy Chief Advisor/ Public Transport Policy (2), JICA PiBO
2022/6/14 ~ 2022/6/24	Thailand (Bangkok)	<ul style="list-style-type: none"> Public Transportation Policy and Priority Measures Improving the efficiency of bus operations and business Bus fleet management including bus inspection and repair works 	H.E Koeut Chhe, Vice Governor of Phnom Penh Capital City Mr. Met Measpheakdey, Deputy Chief of Directorate (PPM/Mol), PPCA Mr. Ean Sokhim, Governor, CBA. Mr. Chou Kimtry, Deputy Director, DPWT/PPCA Mr. Khly Norack, hief of Administration Office, CBA Mr. Phon Longdina, Vice Chief of Accounting Office, CBA Mr. Lun Hean, Mechanic, CBA Mr. Suos Sophoeurn, Mechanic, CBA Mr. Lanh Savann, Mechanic, CBA Mr. Kon Chanly, Technical, CBA Mr. Kiminari Takahashi, JICA PiBO

ANNEX 1.7 Training/ Workshop in Cambodia

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
1	20 Jan. 2017	Half Day	Work Plan Outline	10	Mr. Takahashi
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	Mr. Uzawa
3	04 Mar. 2017	Haft Day	Bus Maintenance Plan and Budget	10	Mr. Uzawa
4	26 June 2017	Half Day	Bus Maintenance Plan and Budget	11	Mr. Uzawa
5	05 June 2017	Half Day	GPS System	13	Mr. Ito
6	11 July 2017	Half Day	Introduction Bus License & Others	12	Mr. Murata
7	11 July 2017	Half Day	Bus Stop Design Gide	12	Mr. Takahashi
8	11 July 2017	Half Day	Phnom Penh Bus Route Development Plan	12	Mr. Takahashi
9	06 Sept. 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	Mr. Yashiro
10	08 Sept. 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	Mr. Shimegi
11	12 Sept. 2017	Half Day	1 st Workshop Challenges to establish a sound business management system in CBA	13	Mr. Shigemi
12	18 Oct. 2017	Half Day	Matters agreed between CBA, Jica	9	Mr. Yamashita

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
			expert and CJEC		
13	31 Oct. 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	Frits
14	07 Nov2017	Half Day	Bus Maintenance Plan and Budget	13	Uzawa
15	22 Nov2017	Half Day	Implement Bus Operation Management System	14	Ito
16	07 Dec2017	Half Day	Second Workshop of Cash Flow Statement	23	Shimegi
17	13 Dec2017	Half Day	Mobility Management	21	Takeda
18	15 Dec2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	Frits
19	13 Dec2017	Half Day	Bus Stop Design Guide	18	Yamashita
20	18 Dec2017	Half Day	Bus Driving Training	14	Murata
21	18 Dec2017	Half Day	3rd Workshop for the management and the accounting	12	Shimegi
22	21 Dec2017	Half Day	Bus Fare and Economy	20	Shimegi
23	19 Jan2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	Yajima
24	23 Jan2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	Yashiro And Kov
25	22 Feb2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ	16	Frits
26	22 Feb2018	Half Day	The Progress of ITC System	16	Ito
27	22 Feb2018	Half Day	Bus Driving Training	16	Murata
28	27 Feb2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	Frits
29	03 Mar2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	Frits
30	09 March 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	Takahashi
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	Takahashi Kov
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	Takahashi Kov
33	24 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	Takahashi Kov
34	28 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	Takahashi Kov
35	29 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	Takahashi Kov Yamashita Takada
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	Yamashita Takada
37	04 Jun2018	Half Day	Dissemination Campaign at Khan	76	Yamashita

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
			Sen Sok		Takada
38	05 Jun2018	Haft Day	Dissemination Campaign at Khan at Khan 7 Makara	75	Yamashita Takada
39	06 Jun2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	Yamashita Takada
40	07 Jun2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	Takahashi Kov Yamashita Takada
41	07 Jun2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	Yamashita Takada
42	07 Jun2018	Half Day	New Bus Stop Design Mobility Management Bus Promotion Measure	12	Yamashita
43	20 Jun2018	Haft Day	Bus Operation Training	15	Murata
44	28 Jun2018	Full Day	Chief Driver Training	24	Murata
45	12 Jul2018	Full Day	Bus Driver Training	14	Murata
46	13 Jul2018	Full Day	Bus Driver Training	16	Murata
47	05 Sep -07 Oct2018	33 Days	Bus driving training	No1 (60 Pax) No2 (60 Pax) No3 (40 Pax) No4 (40 Pax)	Murata
48	12 Oct2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	Yamashita
49	12 Oct2018	Half Day	Seminar on recommendation for the change of the statute	6	Shimegi
50	12 Oct2018	Half Day	Mobility Management Promotion Measures	6	Takada
51	14 Dec2018	Half Day	Progress Report	11	Takahashi
52	19 Dec2018	Half Day	Safety Operation	10	Murata
53	19 Dec2018	Half Day	Mobility Management Guideline	10	Nakano
54	25 Nov-22 Dec2018	22 Days	Chief Driver Training, New Driver Training and Mechanic Training	76	Murata
55	21 Jan2019	Half Day	Fare Policy	13	Shimegi
56	31 Jan2019	Half Day	Discussion on CBA's Condition and Registration Book	10	Shimegi
57	21 Mar2019	Haft Day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	Yamashita
58	03 Jun2019	Half Day	Dissemination Campaign at Khan Doun Penh	72	MsMiyao
59	05 Jun2019	Half Day	Dissemination Campaign at Khan Toul Kork	73	MsMiyao
60	06 Jun2019	Half Day	Dissemination Campaign at Khan Mean Chey	110	MsVanna
61	06 Jun2019	Half Day	Dissemination Campaign at Khan Cham Kar Morn	97	MsVanna
62	07 Jun2019	Half Day	Dissemination Campaign at Khan Chbar Ampov	92	MsVanna
63	10 Jun2019	Half Day	Dissemination Campaign at Khan Dangkor	86	Sim
64	11 Jun2019	Half Day	Dissemination Campaign Khan Por Sen Chey	114	MsSocheata

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
65	13 Jun2019	Half Day	Dissemination Campaign Khan 7 Makara	49	MsSocheata
66	13 Jun2019	Half Day	Dissemination Campaign Khan Sen Sok	52	MsSocheata
67	14 Jun2019	Half Day	Dissemination Campaign Khan Ressey Keo	90	Sim
68	20 Jun2019	Half Day	Dissemination Campaign Khan Chhrouey Chang Va	46	Sim
69	21 Jun2019	Half Day	Dissemination Campaign Khan Preak Phnov	104	Socheata
70	02 Jul2019	Half Day	Bus Scheduling improvement for CBA (Training)	25	Frits
71	05 Jul2019	Half Day	Bus Maintenance, Explanation (Roll Call & Bus Schedule)	7	Uzawa Frits Murata
72	22 Jul2019	Half Day	MM Action Plan Final, Concept Plan of Priority Measures Route Sele	9	Kov Yashiro
73	22 Jul2019	Half Day	4th Management Workshop Financial Simulation and Cost Reduce	11	Kov Shimegi
74	10 Jul2019	Half Day	Roll Call Training	50	Murata
75	15-19 Jul2019	5 Days	New Driver Training	18	Murata
76	30 Jul2019	Half Day	Driver Training Report, Promotion Video for Phnom Penh City Bus and The Progress of Bus Operation & Management System.	13	Kov Murata Sim Socheata
77	13 Aug2019	Half Day	Bus Operation Plan and Deployment Plan	9	Takahashi
78	22 Aug2019	Half Day	Scope of Pilot Bus Priority Measures	8	Takahashi Frits Mihoko
79	03 Oct.2019	Half Day	Rapid Bus Project 2019-2010	19	Mihoko
80	22 Oct2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108	Takahashi
81	24 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64	Uzawa
82	25 Oct2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89	Uzawa
83	25 Oct2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115	Uzawa
84	07 Nov2019	Haft Day	Bus Maintenance	17	Uzawa
85	05 Nov2019	Full Day	Assembly Meeting	All staffs of CBA	Uzawa
86	12 Dec..2019	Haft Day	Project Monitoring Sheet and Progress of Bus Operation & Management System	21	Takahashi Ito
87	12 Dec.2019	Half Day	E-Motorcycle sharing with City Bus	19	Takahashi Carl
88	20 Dec2019	Half Day	Preliminary Opinion Survey for Mobility Management	22	Taniguchi Takahashi Takada

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
89	06 Jan2020	Half Day	Summary of Activities of Finance and Management Area	11	Shimegi
90	20 Jan2020	Half Day	Overview of JICA's bus Priority Pilot Project	15	Takahashi
91	07 Feb.2020	Half Day	Progress of Bus ICT	15	Ito
92	11 Mar2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane and Report of Parameter setting for Bus Priority signal control.	10	Hong Yashiro
93	17 Mar2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane.	11	Hong Yashiro
94	29 Apr2020	Half Day	NO Corona Infections from CBA and Bus Users	13	Takahashi
95	08 May 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane	11	Takahashi Kov Hong
96	28 May 2020	Half Day	Zero Corona Infections from Bus Drivers and Passengers	10	Takahashi Kov Uzawa Nakano Takada
97	27-28 May 2020	2 Days	Learning Seminar on Hygiene and Prevention against COVID-19	513	Takahashi Kov Yi Kannitha Chun Bora
98	12 June 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane	6	Takahashi Kov Hong
99	30 June 2020	Half Day	Brief Progress Report to H.E Deputy Governor of PPCA	7	Takahashi Kov
100	08 July 2020	Half Day	Tracking System for COVID-19 (PIBO)	7	Takahashi Kov
101	22 July 2020	Half Day	Pandemic Bus Operation and Management Guide and Drivers Covid-19 Counter measures work content	11	Kov Murata
102	05 Aug2020	Half Day	Progress on E-bike Sharing	12	Takahashi
103	11 Aug2020	Half Day	Bus vehicle maintenance expert	15	Uzawa
104	25 Aug2020	Half Day	Progressive on E-bike sharing	8	Takahashi Kov
105	26 Aug2020	Half Day	Basic Approval on Installation of 4 Routers	7	Takahashi Kov
106	26 Augto 01 Sep2020	5 days	Pandemic Bus Operational and Management Guide	465	Murata
107	02 Sep2020	1 Days	Bus operation plan and deployment plan	7	Takahashi
108	25 Sep2020	1 Days	Mobility Management "Remote Activity" Draft Plan + MOU	12	Takada
109	28 Sep2020	1 Days	Pandemic Bus Operational and	58	Murata

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
			Management Guide		
110	29 Sep2020	1 Days	Preparation for the Reconstruction of the Public Bus	21	Takahashi Kov
111	16 Oct2020	Half Day	Improved sustainability of mechanics training- Coordination with NPIC and JVC	15	Takahashi Kov Uzawa
112	21 Jan2021	Half Day	Presentation on New Business for E-tok tok and E Van	11	Vanna Cheata
113	09 Feb2021	Half Day	Bus Maintenance	13	Uzawa
114	24 March 2021	Half Day	Bus Maintenance	11	Uzawa Kov
115	01 Apr2021	Half Day	QR Cord Stop Covid 19	7	Kov
116	22 April 2021	Half Day	Router Installation for more redundant OFC NW	16	Takahashi
117	06 June 2021	Half Day	3 OJT candidates 1 Substitute	10	Uzawa
118	23 June 2021	Half Day	Fiber Optic Core connection link	12	Vanna Cheata
119	29 June 2021	Half Day	Bakong Payment System and integration with bus ticketing/payment system	17	Takahashi
120	08 Aug2021	Haft Day	Bakong App for CBA	28	Takahashi Kov
121	24 Aug2021	Haft Day	Bus Operation & Deployment Plan	12	Takahashi Kov
122	01 Sep2021	Haft Day	Bakong App for CBA	37	Kov
123	07 Sep2021	Half Day	Bakong App for CBA	29	Kov
124	03 Nov2021	Half Day	Traffic Light	12	Kov
125	10 Nov2021	Half Day	AMENDMENT OF THE RECORD OF DISCUSSIONS	14	Takahasi Kov
126	12 Dec2021	Half Day	Approval for Specification of Aerial OFC already installed	10	Takahashi
127	16 Dec2021	Half Day	City Bus App	9	Takahasih Kov
128	22 Dec2021	Half day	Activity Report of Mobility Management	9	Takahashi Kov Nakano
129	08 March 2022	Half Day	Considerations for reorganizing CBA	10	Shimegi
130	17 February 2022	Half Day	Bus Maintenance	13	Uzawa
131	21 February 2022	Half Day	Bus Operation Plan and Recommendation for registration book of CBA	12	Takahashi Kov Shimegi
132	23 March 2022	Half Day	Bus Operation Plan	181	Kov
133	24 March 2022	Half Day	Bus Operation Plan	151	Kov
134	06 April 2022	Half Day	Meeting on BOMS	14	Kov Ito
135	28 April 2022	Half Day	Mobility Management Guideline	14	Nakano Tekeda
136	04 May 2022	Half Day	demonstration of Angkor E&C to CBA Management	16	Takahahasi Kov
137	05 May 2022	Half Day	Pilot Bus Priority Signal and Final Implementation Schedule for Pilot Bus Priority Signal	11	Takahashi
138	17 May 2022	Half Day	Guide for Public Transportation	11	Takahashi Yashiro
139	18 May 2022	Half Day	KPI and BOMS KPI and BOMS	14	Takahashi

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
			analysis Example Operation analysis		
140	31 May 2022	Half Day	Bus Priority Measures for City Bus Line 4	9	Hong
141	15 June 2022	Half Day	Report on pilot project of the priority signal for bus ”	8	Yashiro
142	13 July 2022	Half Day	City Bus Ticket - Pay with Bakong	13	Vanna, Piseth
143	15 July 2022	Half Day	Discussion on the Bus Priority Measures for Bus Line 4	7	Hong
144	27 July 2022	Half Day	Bus Maintenance	14	Uzawa
145	28 July 2022	Half Day	New Function Update (BOMS)	15	Takahashi
146	04 Aug2022	Half Day	Bus Driver Training Report	11	Murata
147	10 Aug2022	Half Day	Bus Facility Planning Guideline	10	Nakano/ Hong
148	28,29 July, 01,02 Aug2022	4 days	Bus Driver Training	54	Murata

ANNEX 1.8 On-line (remote) Training

1) For Output 1/2/3/4

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
1	17 Jun 2020	Half day	Progress of maintenance work, Air ventilation test, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
2	09 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
3	16 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
4	21 Jul 2020	Half day	Driver training video, Mechanic training video, Progress of maintenance work	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
5	30 Jul 2020	Half day	Driver training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Mechanics training video, Improvement of BOMS	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
6	06 Aug 2020	Half day	Installation of COVID-19 tools/equipment, Driver training video, Monitoring initial defects, Mechanics training video, Improvement of BOMS	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
7	13 Aug 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
8	25 Aug 2020	Half day	Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
					Takahashi/ Kov
9	03 Sep 2020	Half day	Bus operation plan and deployment plan with COVID-19 pandemic, Driver training video, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
10	10 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
11	23 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
12	01 Oct 2020	Half day	Driver training video, Driver training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
13	08 Oct 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
14	14 Oct 2020	Half day	Driver training video, Driver training, Bus inspectio , Installation of COVID-19 tools/equipment, Mechanics training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
15	22 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
16	28 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
17	05 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
18	12 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
19	19 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
20	25 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
21	03 Dec 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Improvement of bus services, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
22	10 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
23	16 Dec 2020	Half day	Improvement of bus services	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
24	25 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
25	06 Jan 2021	Half day	Improvement of bus services, Monitoring initial defects, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
26	13 Jan 2021	Half day	Improvement of monitor and display board (Bus stops display on monitor), Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
27	20 Jan 2021	Half day	Improvement of bus services, Bus inspection, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
28	27 Jan 2021	Half day	KM9 terminal utilization plan, Parking space arrangement, Drivers training/ inspection for resume bus operation, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
29	03 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
30	10 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Monitoring initial defects, Parking space arrangement, Drivers training/ inspection for resume bus operation, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Takahashi, Kov
31	18 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Monitoring initial defects, Parking space arrangement, Drivers training/ inspection for resume bus operation, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
32	25 Feb 2021	Half day	Improvement of bus services, Drivers training/ inspection for resume bus operation, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanic training video, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Kov
33	04 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Automobile repair and maintenance skills evaluation test, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
34	11 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Automobile repair and maintenance skills evaluation test, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
35	18 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Kov
36	25 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures, Bus maintenance manual	Mechanic section	Uzawa, Kov
37	01 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures, Bus maintenance manual	Mechanic section	Uzawa, Kov
38	08 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, Drivers training for resume bus operation, Bus maintenance manual	Mechanic section	Uzawa, Kov
39	22 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, Drivers training for resume bus operation, Bus maintenance manual	Mechanic section	Uzawa, Kov
40	28 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, English lesson for mechanics, Mechanic online training, Bus maintenance manual	Mechanic section	Uzawa, Kov

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
41	07 May 2021	Half Day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, English lesson for mechanics, Mechanic online training, Bus maintenance manual	Mechanic section	Uzawa, Kov
42	13 May 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
43	20 May 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
44	27 May 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
45	03 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
46	16 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, Smart glass, 3 OJT Candidates 1 Substitute, Procurement of Equipment and tools Bidding preparation, Translation Bus maintenance manual	Mechanic section	Uzawa, Kov
47	24 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, Smart glass, 3 OJT Candidates 1 Substitute, Procurement of Equipment and tools Bidding preparation, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
48	25 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, Smart glass, , Procurement of Equipment and tools Bidding preparation, 3 OJT Candidates 1 Substitute, Mechanic online training, YouTube English Lesson for mechanics, Maintenance section, Translation Bus maintenance manual, Apprenticeship program, JICA: Internship Program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
49	07 July 2021	Half Day	Improvement of bus stops display monitor, "Stop COVID" QR Code, Smart glasses, Procurement of Equipment and tools Bidding preparation, OJT Candidate 1 Substitute, Mechanic online training, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
50	14 July 2021	Half Day	Improvement of bus stops display monitor, Smart glasses, "Stop COVID"QR Code, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship Program: NPIC, JVC, ICT	Mechanic Section	Uzawa, Kov, Murata
51	22 July 2021	Half Day	Improvement of bus stops display monitor, Smart glasses, "Stop COVID"QR Code, Procurement of Equipment and tools Bidding preparation (MOU: NPIC, JVC), 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Maintenance section, Translation Bus Maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
52	29 July 2021	Half Day	Monitoring for Covid 19 counter measures, Improvement of Bus stops display monitor, Smart glasses, "Stop COVID"QR code, Procurement and tools bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
53	05 Aug2021	Half Day	Improvement of bus stops display monitor, "Stop COVID" QR code, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
54	12 Aug2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Translation Bus maintenance manual, Apprenticeship program, JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
55	18 Aug2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa Murata Kov
56	26 Aug2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with Smart glasses, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa Kov
57	16 Sept2021	Half Day	CBA COVID 19 Countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Reporting to higher authority for restoration of the bus operation, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities, Ex-Post Supervision check sheet	Mechanic Section	Uzawa Kov

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
58	22 Sept2021	Half Day	CBA COVID 19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with Smart Glass, Reporting to higher authority for restoration of bus operation, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities, Ex-Post supervision check sheet	Mechanic Section	Uzawa
59	01 Oct2021	Half Day	CBA COVID 19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with Smart Glass, Reporting to higher authority for restoration of bus operation, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and others facilities	Mechanic Section	Takahashi Uzawa Kov
60	14 Oct2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation (MOU: NPIC, JVC=Pending), 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities,	Mechanic Section	Takahashi Uzawa Kov
61	21 Oct2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation (MOU: NPIC, JVC=Pending), 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities, Traffic signal switch and router.	Mechanic Section	Takahashi Uzawa Kov
62	28 Oct2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Bus scheduling/driver roster/fleet assignment under 30% scenario, Driver's training before the resume bus operation, GPS and other facilities, Traffic signal switch and router, City bus app.	Mechanic Section	Takahashi Uzawa Kov
63	04 Nov2021	Half Day	Bus resumption, Bus scheduling/driver roster/fleet assignment under 30% scenario, Driver's training before the resume bus operation, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute	Mechanic Section	Takahashi Uzawa Kov
64	11 Nov2021	Half Day	Bus resumption, EOJ video shooting, Bus scheduling/driver roster/fleet assignment under 30% scenario, Driver's training before the resume bus operation, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute	Mechanic Section	Uzawa

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
65	17 Nov2021	Half Day	Bus resumption, EOJ video shooting, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training, With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute	Mechanic Section	Uzawa
66	25 Nov2021	Half Day	Bus resumption, Bus operation, EOJ video shooting, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute	Mechanic Section	Uzawa Kov
67	9 Dec2021	Half Day	Bus operation, City bus app, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Exhaust pipe	Mechanic Section	Takahashi Uzawa
68	16 Dec. 2021	Half Day	Bus operation, City bus app, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Exhaust pipe, CBA bus users and non-users survey	Mechanic Section	Uzawa
69	06 Jan2022	Half Day	Bus Operation, City bus app, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch, and router, CBA Covid 19 countermeasures, Mechanic online training with smart glasses, Exhaust pipe, CBA bus users and non- users survey	Mechanic Section	Takahashi Uzawa Kov Murata
70	13 Jan2022	Half Day	Bus Operation, Improvement of bus stops display monitor, Traffic signal switch and router, CBA Covid 19 countermeasures, Mechanic online training with smart glasses, Exhaust pipe,		
71	20 Jan2022	Half Day	Bus Operation, Improvement of bus stops display monitor, Traffic signal switch and router, CBA covid 19 countermeasures, Mechanic online training with smart glasses, Exhaust pipe, 100,000km hub bearing inspection	Mechanic Section	Takahashi Uzawa Kov
72	22 Feb2022	Half day	Bus operation, Improvement of bus stops display monitor, Traffic signal switch and router, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual	Mechanic Section	Takahashi Uzawa Kov
73	11 March 2022	Half day	Bus operation, Improvement of bus stops display monitor, Traffic signal switch and router, Bus location app, CBA Covid 19 countermeasure, Mechanic online training with Smart Glass, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual	Mechanic Section	Uzawa
74	18 March 2022	Half Day	Bus Operation, Improvement of bus stops display monitor, Team member of the Study Tour in Thailand, Traffic signal switch and router, CBA COVID 19 countermeasures, Mechanic online training With Smart glasses, 100,000km hub bearing inspection, Bus maintenance manual	Mechanic Section	Uzawa

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
75	01 April 2022	Half Day	Bus operation, Traffic signal switch and router, Improvement of bus stops display monitor, Mechanic online training with Smart glasses, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual,	Mechanic Section	Uzawa
76	07 April 2022	Half Day	Bus operation, Traffic signal switch and router, Bus location application, BOMS, Improvement of bus stops display monitor, Mechanic online training With Smart glasses, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual	Mechanic Section	Takahashi Uzawa Kov
77	28 April 2022	Half Day	Bus operation, Traffic signal switch and router, Bus location application, BOMS, Improvement of bus stops display monitor, Mechanic online training With Smart glasses, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual	Mechanic Section	Uzawa Kov
78	12 May 2022	Half Day	Bus operation, Traffic signal switch and router, Bus location application, BOMS, Improvement of bus stops display monitor, Mechanic online training With Smart glasses, Exhaust pipe, 100,000km hub bearing inspection,	Mechanic Section	Uzawa
79	20 May 2022		Bus operation, Traffic signal switch and router, Bus location application, BOMS, Improvement of bus stops display monitor, Mechanic online training With Smart glasses, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual,	Mechanic Section	Uzawa Kov
80	10 June 2022	Half day	Task, Bus operation, Traffic signal switch and router, Bus location application, BOMS, Improvement of bus stops display monitor, Thailand training, Mechanic online training With Smart glasses, Exhaust pipe, 100,000km hub bearing inspection, Bus maintenance manual	Mechanic Section	Uzawa Kov

2) For Output 5

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
1	09 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (1)	Technical section	Takada
2	16 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (2)	Technical section	Takada
3	27 Jul 2020	Half day	Ideas for Facebook promotion and promotion videos, Preparation for bus information provision at major facilities	Technical section	Takada
4	04 Aug 2020	Half day	Example script and storyboard for "How-to" videos, Filming of the video, Destination introduction by CBA staff/ drivers	Technical section	Takada
5	11 Aug 2020	Half day	Sample format for bus stop information for major facilities (How to prepare and scale-up), Discussion on progress of the video making	Technical section	Takada
6	24 Aug 2020	Half day	Overview of Mobility Management Activity of PIBO Project, Promotion Campaign at Schools	Technical section	Takada
7	31 Aug 2020	Half day	Discussion on Bus Operation Information, Discussion on COVID-19 Video, Discussion on schedule and how to proceed, targeting bus operation from October	Technical section	Takada
8	07 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (1)	Technical section	Takada

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
9	15 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (2)	Technical section	Takada
10	25 Sep 2020	Half day	Overview of Mobility Management activities and progress, Items to confirm with regard to bus operation restarts, Activities for the future	Technical section	Takada
11	05 Oct 2020	Half day	Bus operation restart information (video, poster, banner, press release)	Technical section	Takada
12	19 Oct 2020	Half day	Online survey (How to conduct, How to utilize result) (1)	Technical section	Takada
13	10 Oct 2020	Half day	Online questionnaire survey on City Bus's COVID-19 measures	Technical section	Takada
14	05 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (2)	Technical section	Takada
15	16 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (3)	Technical section	Takada
16	30 Nov 2020	Half day	Online survey (How to increase the number of respondent, How to inform PPCA and motivate PPCA for early operation)	Technical section	Takada
17	28 Dec 2020	Half day	Summary of Mobility Management activities done in 2020, Way forward: Preparation for restart	Technical section	Takada
18	18 Jan 2021	Half day	Preparation for restart, Mobility management plan for 2021	Technical section	Takada
19	01 Feb 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions	Technical section	Takada
20	18 Feb 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section	Takada
21	09 Mar 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section	Takada
22	24 Mar 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section	Takada
23	06 Apr 2021	Half day	Mobility management: Comments on Short Stories Interview, Bus Sticker/ wrapping with support message	Technical section	Takada
24	27 Apr 2021	Half day	Mobility management: Short Stories Interview schedule confirmation, Discussion on PR material prepared by ADB project team	Technical section	Takada
25	07 June 2021	Half Day	Mobility management: Short Stories Interview schedule confirmation, Discussion on PR material prepared by ADB project team, Discussion on promotion measures with "Smart technologies"	Technical section	Takada

ANNEX 2: Results of the Project

List of Products Produced by the Project

ANNEX2 List of Products (Report, Manuals, Handbooks, etc.) Produced by the Project

	Title	Note
Overall Project	Monthly Report	
	Monitoring Sheet 1- 10	
	Completion Report	This report
Deliverables for Output 1	BOMS	
	BOMS Manual	
Deliverables for Output 2	CBA Bus maintenance manual	
	Inspection and maintenance training video (How to conduct periodic inspections for CBA buses)	Available also on YouTube CBA Channel
	Inspection and maintenance training video (How to adjust clutch)	
	Inspection and maintenance training video (How to adjust valve clearance)	
	Inspection and maintenance training video (How to tight cylinder head bolt)	
Deliverables for Output 3	Bus Drive Training Manual	
	Drivers Manual (Accident Response)	
	Drivers Manual (COVID-19 Countermeasures)	
	Drivers Manual (Hiring of Driver)	
	Drivers training video 1 (Roll Call)	
	Drivers training video 2 (Inspection)	
	Drivers training video 3 (Announcement)	
	Drivers training video 4 (Driving)	
Deliverables for Output 4	Sub decree (draft)	
Deliverables for Output 5	MOBILITY MANAGEMENT Guidebook	
	Guidebook on Public Transport Priority Measures	
	Bus Facility Planning Guideline	
	CBA bus PR video (COVID-19 countermeasures for drivers)	Available also on YouTube CBA Channel
	CBA bus PR video (Measles 19 Prevention Measures for Citizens Using Public Bus Services)	Available also on YouTube CBA Channel
	CBA bus PR video (How to use CBA bus Application with smartphone)	Available also on YouTube CBA Channel
	CBA bus PR video (Staff story)	Available also on YouTube CBA Channel
	CBA bus PR video (How to use CBA bus)	Available also on YouTube CBA Channel
Others	Study tour report (Singapore, Malaysia)	Submission with Monthly Report
	Study tour report (Japan)	Submission with Monthly Report
	Study tour report (Vietnam, Singapore)	Submission with Monthly Report
	Study tour report (Thailand)	Submission with Monthly Report
	Aiming for safe and reliable public transportation (Brochure, English/ Khmer)	
	QR code for each bus route (as a countermeasures for COVID-19 pandemic)	
	Bus route map (as of Jun. 2020)	

ANNEX 3: Project Design Matrix (PDM)

Annex 3: Project Design Matrix (PDM) Ver_0Project Title: The Project for Improvement of Public Bus Operation in Phnom PenhProject Period: January 2017 to December 2020 (4 years)Project Area: Phnom Penh, CambodiaTarget Group: People in Phnom PenhCounterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PCCA), PPCA**Version 0.0****Dated 31/Dec./ 2017**

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	· Modal share by public transport is increased by ### % in Phnom Penh	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> · CBA keeps bus operation on schedule · Bus vehicle is maintained periodically · Attitude of the drivers and conductors towards the bus users is improved · The number of traffic accidents by bus is decreased · Financial health of CBA is improved · Traffic regulations are introduced on the bus operation 	<ul style="list-style-type: none"> · Record of the operation · Record of the maintenance · Interview · Accident report · Profitability · Decision/Degree 	<ul style="list-style-type: none"> · Policy on public transportation remains as the priority policy · People's behaviors on public transport will be changed.
Outputs			
1. Bus operation capacity of CBA is improved	1.1 Level of skills and knowledge on bus operation of CBA is improved 1.2 Bus operation manual is developed 1.3 Bus operation system is established 1.4 Bus operation is reviewed based on data 1.5 Basic plan of reliable and safety operation is formulated 1.6 Reliable and safety operation is improved 1.7 All the activities in the Action Plan are completed	<ul style="list-style-type: none"> · Training evaluation report · Manual · System · New bus operation plan · Training report · Evaluation report on the operation · Progress report 	<ul style="list-style-type: none"> · CBA is not privatized
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	2.1 Bus vehicle maintenance manual is developed 2.2 CBA's proficiency in the bus vehicle maintenance technology is improved 2.3 Reliability of the maintenance work is improved, and the number of breakdown is decreased	<ul style="list-style-type: none"> · Manual · Skill test · Inspection report 	
3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA	3.1 Bus driver training manual is developed 3.2 Conductor work manual is developed 3.3 ## trainers have completed the driver training 3.4 At least ##% of drivers have passed training 3.5 ## trainers have completed the conductor training 3.6 At least ## % of conductors have passed training 3.7 Performance evaluation of the drivers and conductors is conducted	<ul style="list-style-type: none"> · Manual · Manual · Result of skill test · Training report · Result of skill test · Training report · Evaluation report 	
4. CBA's business management capacity is improved	4.1 Financial statements are prepared 4.2 Ticket management manual is developed 4.3 Operation cost and passenger database are built 4.4 Potential needs in bus operation are assessed 4.5 Annual business plan is formulated and reflects on budget plan 4.6 Report of the new policies on the bus fare and subsidy is prepared 4.7 Road map and technological requirement for introducing smart card system for fare collection are prepared	<ul style="list-style-type: none"> · Financial statements · Manual · CBA account document/ database · Research report · Annual business plan · Study report · Roadmap, study report 	
5. Capacity of CBA and DPWT/PCCA on policy planning for the public transport priority measures is improved	5.1 Level of skills and knowledge on the traffic control and management is improved 5.2 Report of the traffic management and safety measures is prepared 5.3 Para-transit improvement plan on the bus operation routes is formulated 5.4 Evaluation of the pilot projects and social experiments is conducted 5.5 Technical design documents for the bus related facilities are prepared 5.6 Technical examination report for bus information and operation management system is prepared 5.7 At least ## participants of mobility management activities come to take public transport	<ul style="list-style-type: none"> · Training text · Study report · Improvement plan · Pilot project evaluation report · Technical design document · Technical report for the system · Evaluation report on mobility management activities 	

Activities	Input	Pre-Condition
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system with GPS</p> <p>1.4 To analyze the bus operation data to review the existing operation plan</p> <p>1.5 To formulate education and training plan for reliable and safety operation (examination of necessary measures)</p> <p>1.6 To implement OJT on the reliable and safety operation</p> <p>1.7 To monitor and manage the implementation of the Action Plan developed under "Preparatory Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Public transport policy - Bus operation planning - Bus vehicle maintenance - Bus driver training - Business management - Traffic control and safety - Bus facility planning - Information and communication technology - Mobility management - Monitoring and evaluation 	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p>
<p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance technologies and OJT for practice</p> <p>2.3 To monitor and manage inspection and maintenance works</p>	<p><u>Training in Japan and developing countries</u></p>	
<p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual (driving technology including theory and practice)</p> <p>3.2 To develop work manual for drivers and conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the monitoring system for the drivers and conductors by camera installed inside buses and drive-recorders etc., and implement OJT for practice</p>	<p><u>equipment</u></p> <ul style="list-style-type: none"> - Information system on bus location - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p>	<p>Pre-condition</p> <p>· CBA continues to exist for certain years</p>
<p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To develop manual for existing fare and ticket management</p> <p>4.3 To manage operation cost/expenses and passenger data</p> <p>4.4 To implement market research in bus operation area</p> <p>4.5 To formulate an annual business plan including budget and accounting management</p> <p>4.6 To review and examine the bus fare system and subsidy policy</p> <p>4.7 To provide technical support on introduction of smart card system for fare collection based on Japanese experience</p>	<p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	
<p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To implement OJT on the technology and practice for design and planning of the bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and operation management system</p> <p>5.7 To implement training for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>		

Annex 1: Project Design Matrix (PDM) Ver_1.0

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to December 2020 (4 years)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹ in Phnom Penh by 2023	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2020. • Average operation speed maintained at 15km/h in 2020. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy
Outputs			
1. Bus operation capacity of CBA is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities.
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	<ul style="list-style-type: none"> • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. 	<ul style="list-style-type: none"> • Maintenance Manual • Training evaluation report • Inspection report 	
3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA	<ul style="list-style-type: none"> • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have completed the conductor training and passed training • Safety management system is developed 	<ul style="list-style-type: none"> • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report 	
4. CBA's business management capacity is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)⁶ is improved to trainer's level • Financial statements are prepared • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed 	<ul style="list-style-type: none"> • Training evaluation report • Financial statements • Manual • Study report • Business plan • Agreed policy • Ticketing system 	
5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)⁷ is improved to trainer's level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed 	<ul style="list-style-type: none"> • Training evaluation report • Improvement strategy/plan • Pilot project and mobility management evaluation report • Inventory of bus related facilities • Bus information and location system 	

	<ul style="list-style-type: none"> · Bus information and location system is developed 		
Activities	Input	Pre-Condition	
<ol style="list-style-type: none"> 1. <u>Improvement of Bus Operation Capacity of CBA</u> <ol style="list-style-type: none"> 1.1 To implement training for bus operation 1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice 1.3 To establish bus operation system and develop the operation plan 1.4 To analyze the bus operation data and improve the operation plan 1.5 To develop bus safety operation guideline and implement OJT for practice 2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u> <ol style="list-style-type: none"> 2.1 To develop bus vehicle inspection and maintenance manual 2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice 2.3 To monitor and evaluate inspection and maintenance works 3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u> <ol style="list-style-type: none"> 3.1 To develop driver training manual 3.2 To develop work manual for conductors 3.3 To implement trainings for trainers of drivers 3.4 To implement series of training for both existing and newly-employed drivers by the trainers 3.5 To implement trainings for trainers of conductors 3.6 To implement series of training for conductors by the trainers 3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice 4. <u>Improvement of Business Management Capacity of CBA</u> <ol style="list-style-type: none"> 4.1 To implement training for financial accounting and management accounting 4.2 To collect and analyze operation cost/expenses and passenger data 4.3 To implement market research in bus operation area 4.4 To formulate a business plan including budget and accounting management 4.5 To review and examine the bus fare system and subsidy policy 4.6 To provide technical support for introduction of cashless ticketing system for fare collection 5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u> <ol style="list-style-type: none"> 5.1 To implement training for traffic management 5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal 5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes 5.4 To implement pilot projects and social experiments for the proposed traffic management measures 5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc. 5.6 To introduce bus information and location system 5.7 To implement workshops for mobility management to promote modal shift 5.8 To implement pilot projects for mobility management 	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Chief Advisor/ Public Transport Policy - Deputy Chief Advisor/ Public Transport Policy (2) - Bus Operation Planning - Bus Vehicle Maintenance - Bus Driver Training - Business Management - Traffic Control and Safety - Bus Facility Planning - IT System/Data Management - Mobility Management - Stakeholder Management - Monitoring and Evaluation - Bus Operator Advisory Group - Preparatory Survey Review (Team Leader) - Preparatory Survey Review (Bus Specification and Equipment) - Preparatory Survey Review (Procurement Plan) <p><u>Training in Japan and third countries</u></p> <p><u>Equipment</u></p> <ul style="list-style-type: none"> - Bus location system - Bus safety management system - Passenger monitoring system - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<ul style="list-style-type: none"> · Most of the counterparts assigned will be continuously responsible for the assigned work 	

Note 1: Under the assumption that 180 buses operate with occupancy rate at 50% of seat capacity on 10 PPCA/CBA's proposed bus lines.

Note 2: Deputy Governor of CBA, Chief of Technical Office and one (1) selected senior staff of Technical Office.

Note 3: Heads of Routine Inspection Group, Break Maintenance Group, Crutch Maintenance Group, Tire Maintenance Group, Painting and Body Works Group

Note 4: Two (2) Chiefs of Driver Group per route (20 chiefs for 10 routes)

Note 5: Two (2) Chiefs of Conductor Group per route (20 chiefs for 10 routes)

Note 6: Deputy Governor of CBA, Chief of Accounting Office and one (1) selected senior staff of Accounting Office of CBA

Note 7: One (1) selected Head/Chief of CBA (Technical Office), PPCA (Department of Urban Management) and DPWT (Division of Road Transport)

Annex 2: Project Design Matrix (PDM) Ver_1.2

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to February 2022 (5 years and 2 months)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹ in Phnom Penh by 2023	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2020. • Average operation speed maintained at 15km/h in 2020. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy
Outputs			
<ol style="list-style-type: none"> 1. Bus operation capacity of CBA is improved 2. Maintenance and inspection capacity on bus vehicles of CBA is implemented 3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA 4. CBA's business management capacity is improved 5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved 	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have completed the conductor training and passed training • Safety management system is developed • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)⁶ is improved to trainer's level • Financial statements are prepared • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)⁷ is improved to trainer's level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline • Maintenance Manual • Training evaluation report • Inspection report • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report • Training evaluation report • Financial statements • Manual • Study report • Business plan • Agreed policy • Ticketing system • Training evaluation report • Improvement strategy/plan • Pilot project and mobility management evaluation report • Inventory of bus related facilities • Bus information and location system 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities.

	· Bus information and location system is developed		
Activities	Input	Pre-Condition	
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system and develop the operation plan</p> <p>1.4 To analyze the bus operation data and improve the operation plan</p> <p>1.5 To develop bus safety operation guideline and implement OJT for practice</p> <p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice</p> <p>2.3 To monitor and evaluate inspection and maintenance works</p> <p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual</p> <p>3.2 To develop work manual for conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice</p> <p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To collect and analyze operation cost/expenses and passenger data</p> <p>4.3 To implement market research in bus operation area</p> <p>4.4 To formulate a business plan including budget and accounting management</p> <p>4.5 To review and examine the bus fare system and subsidy policy</p> <p>4.6 To provide technical support for introduction of cashless ticketing system for fare collection</p> <p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and location system</p> <p>5.7 To implement workshops for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Chief Advisor/ Public Transport Policy - Deputy Chief Advisor/ Public Transport Policy (2) - Bus Operation Planning - Bus Vehicle Maintenance - Bus Driver Training - Business Management - Traffic Control and Safety - Bus Facility Planning - IT System/Data Management - Mobility Management - Stakeholder Management - Monitoring and Evaluation - Bus Operator Advisory Group - Preparatory Survey Review (Team Leader) - Preparatory Survey Review (Bus Specification and Equipment) - Preparatory Survey Review (Procurement Plan) <p><u>Training in Japan and third countries</u></p> <p><u>Equipment</u></p> <ul style="list-style-type: none"> - Bus location system - Bus safety management system - Passenger monitoring system - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p>	

Note 1: Under the assumption that 180 buses operate with occupancy rate at 50% of seat capacity on 10 PPCA/CBA's proposed bus lines.

Note 2: Deputy Governor of CBA, Chief of Technical Office and one (1) selected senior staff of Technical Office.

Note 3: Heads of Routine Inspection Group, Break Maintenance Group, Crutch Maintenance Group, Tire Maintenance Group, Painting and Body Works Group

Note 4: Two (2) Chiefs of Driver Group per route (20 chiefs for 10 routes)

Note 5: Two (2) Chiefs of Conductor Group per route (20 chiefs for 10 routes)

Note 6: Deputy Governor of CBA, Chief of Accounting Office and one (1) selected senior staff of Accounting Office of CBA

Note 7: One (1) selected Head/Chief of CBA (Technical Office), PPCA (Department of Urban Management) and DPWT (Division of Road Transport)

Annex 4: Project Design Matrix (PDM) Ver_1.3

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to August 2022 (5 years and 8 months)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹ in Phnom Penh by 2025	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2022 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2022. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2022. • Average operation speed maintained at 15km/h in 2022. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy
Outputs			
<ol style="list-style-type: none"> 1. Bus operation capacity of CBA is improved 2. Maintenance and inspection capacity on bus vehicles of CBA is implemented 3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA 4. CBA's business management capacity is improved 5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved 	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have completed the conductor training and passed training • Safety management system is developed • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)⁶ is improved to trainer's level • Financial statements are prepared • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)⁷ is improved to trainer's level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed • Bus information and location system is developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline • Maintenance Manual • Training evaluation report • Inspection report • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report • Training evaluation report • Financial statements • Manual • Study report • Business plan • Agreed policy • Ticketing system • Training evaluation report • Improvement strategy/plan • Pilot project and mobility management evaluation report • Inventory of bus related facilities • Bus information and location system 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities.

Activities	Input	Pre-Condition
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system and develop the operation plan</p> <p>1.4 To analyze the bus operation data and improve the operation plan</p> <p>1.5 To develop bus safety operation guideline and implement OJT for practice</p> <p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice</p> <p>2.3 To monitor and evaluate inspection and maintenance works</p> <p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual</p> <p>3.2 To develop work manual for conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice</p> <p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To collect and analyze operation cost/expenses and passenger data</p> <p>4.3 To implement market research in bus operation area</p> <p>4.4 To formulate a business plan including budget and accounting management</p> <p>4.5 To review and examine the bus fare system and subsidy policy</p> <p>4.6 To provide technical support for introduction of cashless ticketing system for fare collection</p> <p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and location system</p> <p>5.7 To implement workshops for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Chief Advisor/ Public Transport Policy - Deputy Chief Advisor/ Public Transport Policy (2) - Bus Operation Planning - Bus Vehicle Maintenance - Bus Driver Training - Business Management - Traffic Control and Safety - Bus Facility Planning - IT System/Data Management - Mobility Management - Stakeholder Management - Monitoring and Evaluation - Bus Operator Advisory Group - Preparatory Survey Review (Team Leader) - Preparatory Survey Review (Bus Specification and Equipment) - Preparatory Survey Review (Procurement Plan) <p><u>Training in Japan and third countries</u></p> <p><u>Equipment</u></p> <ul style="list-style-type: none"> - Bus location system - Bus safety management system - Passenger monitoring system - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p>< Cambodia side ></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p>

Note 1: Under the assumption that 180 buses operate with occupancy rate at 50% of seat capacity on 10 PPCA/CBA's proposed bus lines.

Note 2: Deputy Governor of CBA, Chief of Technical Office and one (1) selected senior staff of Technical Office.

Note 3: Heads of Routine Inspection Group, Break Maintenance Group, Crutch Maintenance Group, Tire Maintenance Group, Painting and Body Works Group

Note 4: Two (2) Chiefs of Driver Group per route (20 chiefs for 10 routes)

~~Note 5: Two (2) Chiefs of Conductor Group per route (20 chiefs for 10 routes)~~

Note 6: Deputy Governor of CBA, Chief of Accounting Office and one (1) selected senior staff of Accounting Office of CBA

Note 7: One (1) selected Head/Chief of CBA (Technical Office), PPCA (Department of Urban Management) and DPWT (Division of Road Transport)

ANNEX 4: Minutes of Meeting and R/D

- (1) Kick-off
- (2) JCC 1
- (3) JCC 2
- (4) JCC 3
- (5) JCC 4
- (6) JCC 5
- (7) JCC 6
- (8) Minutes of Meeting on Project Extension 1
(PPCA and JICA)
- (9) Minutes of Meeting on Project Extension 2
(PPCA and JICA)
- (10) Original R/D

KICK-OFF MEETING

**MINUTES OF MEETING
OF
KICKOFF MEETING
FOR
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION
IN
PHNOM PENH**


Agreed upon between

PHNOM PENH CAPITAL ADMINISTRATION

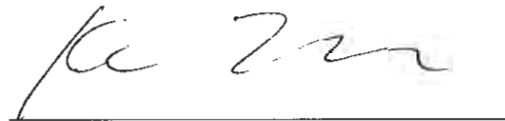
AND

JICA CAMBODIA OFFICE/JICA EXPERT TEAM

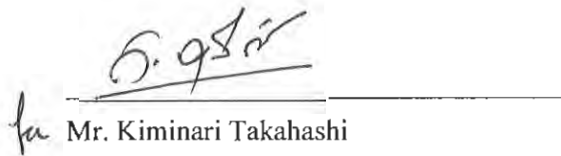
Phnom Penh, 8th February, 2017



H. E. Aunny Ieng
Deputy Governor,
Phnom Penh Capital Administration



Mr. Kotaro Tanaka
Senior Representative,
JICA Cambodia Office



Mr. Kiminari Takahashi
Chief Advisor,
JICA Expert Team

1. Introduction

The Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a team of JICA Experts on 15th January 2017, to commence 4-year project, namely, the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as “the Project”).

In the course of the Project, the JICA Experts and the counterpart agencies will be engaged in delivering five project outputs: (i) improvement of bus operation capacity, (ii) improvement of bus fleet maintenance capacity, (iii) training for bus driver, (iv) improvement of bus business management capacity and (v) improvement of policy planning capacity. During the initial stage of the Project, the JICA Experts prepared Draft Work Plan, exploring project goals, project approach and methodology and implementation plan, and submitted the Draft Work Plan in the Kick-off Meeting.

2. Opening Remarks

On behalf of the PPCA, H.E. Aunny Ieng , a chairperson of the Kick-off Meeting, welcomed all participants in the meeting. H.E. Aunny Ieng thanked continuous supports made by JICA and made opening remarks, briefing the history of public bus network development and operation, and the Kick-off Meeting started at 9:10 hours. Participants of the meeting are listed in the attachment 1.

3. Welcome Remarks

Mr. Kotaro Tanaka welcomed all participants in the meeting. Mr. Kotaro Tanaka made welcome remarks, briefing the background of the Project and thanked H.E. Aunny Ieng for his commitment in development of the urban transport system and that to the Project.

4. Presentation by JICA Expert

Mr. Kiminari Takahashi, Chief Advisor, and Mr. Frits Olyslagers, Bus Operation Planning Expert, made a presentation, highlighting the following bullet points:

- Background
- Present situation (SWOT)
- Project outline - Project Design Matrix
- Approach and methodology
- Project implementation plan – staffing, schedule, deliverables
- Confirmation of agreements in RD

5. Comments on the Draft Work Plan

After the presentation, participants of the Kick-off Meeting were requested to ask questions and provide comments, and the JICA Experts responded these comments, and discussions and agreements during the meeting are summarized below.

(1) Draft Work Plan

- Mr. Kimtry Chou, Deputy Director, DPWT expressed that he fully agreed with relevance of the overall approach and methodology that JICA Expert proposed in the presentation.
- Deputy Director, DPWT proposed to implement (i) sidewalk improvement and (ii) Park and Ride system at the bus terminal(s) as part of the pilot project(s)
- Deputy Director, DPWT mentioned that the project approach/methodology sufficiently covers ‘supply-side’ implications to establish quality bus network/service. Deputy Director, DPWT suggested that the Project should also focus on the ‘demand-side’ implications to promote the ridership of the city bus.
- Mr. Sophan Moeung, Advisor for DPWT expressed that he fully supports for proposed overall approach and methodology and implementation plan that JICA Expert proposed in the presentation.
- Advisor for DPWT suggested that JICA Expert should consider (i) sidewalk improvement, (ii) intersection improvement, (iii) divider along the arterial roads, (iv) measure to divert certain traffic of private vehicles to local street to give more road space to bus, (v) one-way system, and (vi) Park and Ride system as part of the pilot projects.
- JICA Expert responded that as part of the project activities, the Project will develop a comprehensive public transport priority/ traffic management strategy and plans on these measures, considering a number of the projects suggested by members and will select the priority corridor/area and identify effective pilot projects.
- JICA Expert emphasized importance of combined pull and push measures and responded that the Project will study and implement both pull measure and push measure as part of the pilot projects to promote the ridership of public bus.

(2) Undertakings by Cambodian side

- Chairperson stated that he fully understood deployment of depot space and development of depot(s) would be a bottleneck of procurement of 80 Japanese buses, as agreed in GA. Chairperson requested JICA to issue the letter to the Governor to request to secure the additional depot space and develop the depot, with enough reasoning.
- JICA Expert responded that existing depot(s) might be fully occupied by 100 Chinese buses and planned depot location suggested by PPCA does not have enough space to accommodate 80 Japanese buses and suggested that PPCA and JICA Expert will closely work to identify candidate and suitable depot location at earliest timing, considering the planned bus network/bus operation and hence the size of depot.
- Chairperson suggested to amend membership of the JCC (Joint Coordination Committee) as

follows:

JCC Members	Assigned
1. Project Director	Deputy Governor, PPCA
2. Deputy Project Director	Deputy Director, DPWT/PPCA
3. Project Manager	Governor, CBA
4. PPCA	Director, Direction of Urban Management
5. DPWT/PPCA	Advisor and other management staffs (in total 4 staffs assigned)
6. City Bus Authority	Deputy Governors and other management staffs
7. MEF	Director, Department of International Cooperation
8. MPWT	Department of Public Transport (to be established)
9. Personnel concerned to be decided by Cambodia Side	Khan Authorities, Traffic Police, other relevant departments of PPCA

6. Closing Remarks

H.E Aunny Ieng appreciated the continuous supports by JICA and expressed his supports for project output and its approach and methodology proposed by JICA Expert. During the closing remarks, H.E Aunny Ieng made following comments on the Project:

- Cambodian side was reminded deployment of depot space and development of depot(s) would be a critical pass for smooth procurement of 80 Japanese buses.
- A number of the projects, including sidewalk management, proposed by members should be considered as part of pilot projects to be designed and implemented in the course of the Project.
- Local culture and contexts need to be taken into account when the Project designs and implements the pilot project.
- City plans to develop interchange bus terminal(s) in the outskirts of the city and integrate intercity and city bus network. The Project also need to consider it in developing bus routing/operation plan.
- Kampong Speu Province plans to develop a bus network and operate 20 buses between Chom Chao and KP 100. The Project also need to consider connectivity between City Bus and these Regional Buses.

H.E Aunny Ieng thanked constructive comments and suggestions made by members and closed the Kick-off Meeting at 11:40 hours.

ATTACHMENT 1

Attendees of the Kick-off Meeting are listed below.

No.	Name	Sex	Position-Organization
1	H.E Aunny Ieng, PhD	M	Deputy Governor, PPCA
2	Chu Meng Chan	M	Deputy Director of Admin, PPCA
3	Som Vanda	M	Chief of Department of Planning, PPCA
4	Chu Kimtry	M	Deputy Director of DPWT
5	Pheng Pharinet	F	Official Staff of DPWT
6	Moeung Sophan	M	Official Staff of DPWT
7	Sar Vuthy	M	Deputy Governor, CBA
8	Soun Vanhong	M	General Directorate of Land Transport, MPWT
9	Kly Norak	M	Chief Admin. CBA
10	Kotaro Tanaka	M	Senior Representative, JICA
11	Hideaki Iwase	M	Project Formulation Officer
12	Seng Solady	F	Program/Officer
13	Kiminari Takahashi	M	JICA Expert Team
14	Monyrath Kov	M	JICA Expert Team
15	Frits Olysagers	M	JICA Expert Team
16	Hiroyuki Yamashita	M	JICA Expert Team
17	Toshiaki Takeda	M	JICA Expert Team
18	Koji Uzawa	M	JICA Expert Team

1st JCC MEETING

**MINUTES OF MEETING
OF
1ST JOINT COORDINATION COMMITTEE MEETING
FOR
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION
IN
PHNOM PENH**

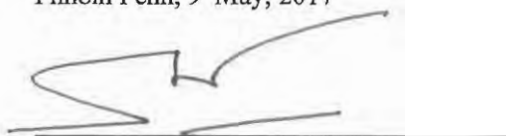
Agreed upon between

PHNOM PENH CAPITAL ADMINISTRATION

AND

JICA CAMBODIA OFFICE/JICA EXPERT TEAM

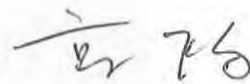
Phnom Penh, 9th May, 2017



H. E. Aunny Ieng
Deputy Governor,
Phnom Penh Capital Administration



Mr. Kotaro Tanaka
Senior Representative,
JICA Cambodia Office



Mr. Kiminari Takahashi
Chief Advisor,
JICA Expert Team

1. Introduction

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In the course of the Project, the JICA Experts and the counterpart agencies will be engaged in delivering five project outputs: (i) improvement of bus operation capacity, (ii) improvement of bus fleet maintenance capacity, (iii) training for bus driver, (iv) improvement of bus business management capacity and (v) improvement of policy planning capacity. During the initial stage of the Project, the JICA Experts prepared Work Plan, exploring project goals, project approach and methodology and implementation plan, and submitted the Work Plan in the 1st JCC Meeting.

2. Opening Remarks

On behalf of the PPCA, H.E. Aunny Ieng, a chairperson of the 1st JCC Meeting, welcomed all participants in the meeting. H.E. Aunny Ieng thanked continuous supports made by JICA and made opening remarks, highlighting the importance of the meeting, where all representatives from relevant agencies and local authorities were present whose cooperation are necessary to ensure the success of the project implementation. The 1st JCC Meeting started at 9:00 hours. Participants of the meeting are listed in the attachment 1.

3. Welcome Remarks

Mr. Kotaro Tanaka welcomed all participants in the meeting. Mr. Kotaro Tanaka made welcome remarks, briefing the background of the Project and thanked H.E. Aunny Ieng for his commitment in development of the urban transport system and that to the Project. Mr. Kotaro Tanaka concluded his remarks by encouraging all participants to consider the benefit of this project for Cambodian government and citizens so that the outcome would be materialized.

4. Presentation by JICA Expert

Mr. Kiminari Takahashi, Chief Advisor, and Mr. Frits Olyslagers, Bus Operation Planning Expert, made a presentation, highlighting the following bullet points:

- Matters arising and actions taken;
- Contents of Work Plan emphasizing on two major points;
 - Project background
 - Project Design Matrix (PDM)
- Summary of the progress report;
 - Route planning and preliminary bus operation plan
 - Review of bus specification and equipment under Japan Grant Aid
 - Progress of depot development and staff employment
 - Procurement schedule of buses by Japanese/Chinese Government

5. Comments on the Presentation

After the presentation, participants of the 1st JCC Meeting were requested to ask questions and provide comments, and the JICA Experts responded these comments, and discussions and agreements during the meeting are summarized below.

(1) Work Plan

- Mr. Chou Kimtry, Deputy Director of DPWT, commented that increasing public transport modal share of 2% in 2023, as mentioned in the PDM, seems too low to contribute to solving traffic congestion in Phnom Penh.
- Mr. Meng Chhunheng, Director of Urban Transport Department - MPWT, understood that promoting bus ridership is crucial for solving traffic congestion and reducing the annual deficit of CBA as presented by the JICA Expert Team. He mentioned a few factors attributed to ridership promotion:
 - Walking space to/from station; PPCA needs to secure space on sidewalk
 - Bus shall be comfortable, new, clean, punctual with reasonable travel speed
- Mr. Yoshiro Masuda, JICA Headquarter, explained the nature of technical cooperation project and added that target modal share of public transport should be set and achieved by Cambodian side. To achieve this, the efforts should not be only from CBA, but also from all parties concerned in PPCA. To secure the space for the bus stop, police officers can help CBA to make the space clear prior to the arrival of buses. To promote the modal shift, for example, PPCA can persuade or even force public officers not to take their private car but to take bus to go to and from between office and home like in Tokyo Japan. JICA welcome PPCA's commitment and JICA Expert Team would provide the technical support under mutual cooperation.
- Mr. Kiminari Takahashi, Chief Advisor, explained that the estimation was based on expected capacity of available public transport service in 2023 together with several assumptions on the ridership. This 2% target should be practical and not too low.
- H.E. Aunny Ieng requested that the modal share of public transport set in the verifiable indicators must be based on scientific estimation. To achieve the set targets requires commitment, policy and strategy that respond to the actual political and socio-economic situations, which is not limited to public transport. H.E. Aunny Ieng suggested specific study to be made before releasing 2% modal share.

(2) Bus Route Plan and Preliminary Operation Plan

- Mr. Chou Kimtry, Deputy Director of DPWT, requested CBA and JICA Expert Team to re-consider adjustment of a few planned routes to provide connections to town centers, tourist sites, and new stadium North of Prek Leab (particularly route 6), whereas new routes connected to suburb is not necessary at this moment.

- Mr. Ean Sokhim, Governor of CBA, explained that bus routes connecting suburban area to CBD are important. Water and electricity are now available in the suburban area, so if there is bus service, lower income citizen could choose to reside outside of the city and come to work in CBD.
- Mr. Kotaro Tanaka, JICA Cambodia Office, requested the Expert Team to explain the number of 130 required fleet size while CBA is expecting 100 buses from China and 80 buses from Japan.
- Mr. Kiminari Takahashi, Chief Advisor, explained the assumptions of this preliminary operation plan and the necessary adjustment would be done after the bus route network plan is finalized.
- H.E. Aunny Ieng requires passenger demand data including the sectional volume, travel patterns, and hourly demand fluctuation to justify the route plan.

(3) Depot

- Mr. Chou Kimtry, Deputy Director of DPWT, requested that accommodation for drivers/conductors should be considered in the depot design.
- Mr. Kiminari Takahashi, Chief Advisor, agreed to consider this request after studying the possibility of moving warehouse into the workshop.
- Mr. Tanaka Kotaro, JICA Cambodia Office, also requested PPCA to confirm the schedule related to the construction of depot as this is important for the procurement schedule of buses.
- H.E. Aunny Ieng explained that the detail schedule of depot development could not be provided at this moment as it is still being studied internally by PPCA. However, H.E. Aunny Ieng guaranteed that the depot would be ready before the arrival of the Japanese buses Grant Aid .

(4) Other

- Mr. Kiminari Takahashi, Chief Advisor, requested PPCA to confirm if the institutional structure of the CBA would remain the same during the course of this project. It is a pre-condition for this project that the CBA institutional structure remains unchanged.
- Mr. Shota Seto, JICA Headquarter, also pointed that the increase of bus fleet will increase the deficit, so he would like to know if Cambodian side has intention to change CBA financial structure.
- H.E. Aunny Ieng requested JICA Expert Team to analyze and recommend appropriate institutional arrangement of the CBA (e.g., State Enterprise).

- Mr. Shota Seto also requested PPCA to reveal the exact procurement schedule of 100 buses from Chinese government.
- H.E. Aunny Ieng guaranteed that Chinese buses would arrive Phnom Penh in July 2017; however, H.E. Aunny Ieng was not aware of detail procurement schedule.

6. Closing Remarks

H.E Aunny Ieng appreciated the continuous supports by JICA and expressed his supports on the expected project outputs and its approach and methodology proposed by JICA Expert. During the closing remarks, H.E Aunny Ieng provided the following responses and comments:

1. Fare policy requires also other possible alternatives in addition to the distance-based fare raised by the JICA Expert Team, e.g. different categories of buses with different fares.
2. Financial structure of CBA needs to be analyzed by the JICA Expert Team and several recommendations from the analysis could be discussed, e.g. timeframe, business plan, financial ability, technical capacity, etc.
3. Consideration on improvement of buses shall integrate the whole transport system, including private vehicle and paratransit.

The meeting adjourned at 12:20.

ATTACHMENT 1

Attendees of the 1st JCC Meeting are listed below.

No.	Name	Sex	Position-Organization
1	H.E. Dr. Aunny Ieng	M	Deputy Governor, PPCA
2	Seng Kun	M	Deputy Governor of Porsenchey District
3	Bun Sopheak	M	Deputy Governor of Chamkarmorn District
4	Ma Sopheap	M	Deputy Governor of Meanchey District
5	Yos Mony	M	Deputy Governor of Doun Penh District
6	Leng Ravong	M	Deputy Governor of Chhrouy Changva District
7	Hout Leappisith	M	Deputy Governor of Preak Pnov District
8	Kob Sles	M	Deputy Governor of Toul Kork District
9	Prach Siha	M	Deputy Governor of Russeykeo District
10	Nak Nora	M	Office staff of Chhbar Ampov District
11	Ean Sokhim	M	Governor of CBA
12	Sar Vuthy	M	Deputy Governor of CBA
13	Khly Noreak	M	Chief Admin. Of CBA
14	Meng Chhunheng	M	Director of Urban Transport
15	Touch Chan Kresna	M	Deputy Director General, MEF
16	Yos Sovannara	M	Deputy Office, MEF
17	Sarom Sothoeun	M	Deputy Chief, Office of Bilateral Cooperation II, MEF
18	Hout Sophy	M	Chief Officer of Intersectional Division

19	Sin Boromey	M	Chief Department of Urban Management
20	Dy Sanith	M	Deputy Director of Ministry Land Management Urban Planning and Construction
21	Peng Parineth	F	Office staff of DPWT
22	Chou Kimtry	M	Deputy Director of DPWT
23	Kotaro Tanaka	M	Senior Representative, JICA Cambodia Office
24	Yoshiro Masuda	M	JICA Headquarter
25	Shota Seto	M	JICA Headquarter
26	Hideaki Iwase	M	Project Formulation Advisor, JICA Cambodia Office
27	Seng Solady	F	Program Officer, JICA Cambodia Office
28	Kiminari Takahashi	M	JICA Expert Team
29	Kov Monyroth	M	JICA Expert Team
30	Frist Olyslagers	M	JICA Expert Team
31	Hor Sim	M	JICA Expert Team

2nd JCC MEETING

**MINUTES OF MEETING
OF
2ND JOINT COORDINATION COMMITTEE MEETING
FOR
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION
IN
PHNOM PENH**

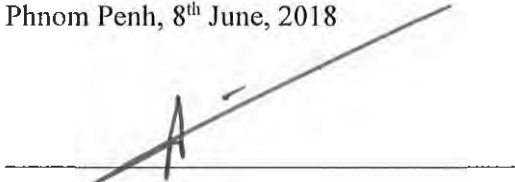
Agreed upon between

PHNOM PENH CAPITAL ADMINISTRATION

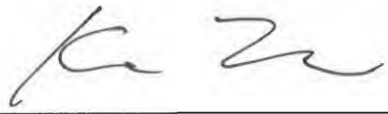
AND

JICA CAMBODIA OFFICE/JICA EXPERT TEAM


Phnom Penh, 8th June, 2018



H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration



Mr. Kotaro Tanaka
Senior Representative,
JICA Cambodia Office



Mr. Kiminari Takahashi
Chief Advisor,
JICA Expert Team

1. Introduction

The Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a team of JICA Experts on 15th January 2017, to commence 4-year project, namely, the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as “the PiBO Project”).

In the course of the PiBO Project, the JICA Experts and the counterpart agencies have been engaged in delivering five project outputs: (i) improvement of bus operation capacity, (ii) improvement of bus fleet maintenance capacity, (iii) training for bus driver, (iv) improvement of bus business management capacity and (v) improvement of public transport policy and planning capacity. As part of deliverables of the PiBO Project, the JICA Experts prepared Monitoring Sheets, exploring the progress as well as achievement of the PiBO Project, and submitted the Monitoring Sheet Vol.1-3 in the 2nd JCC Meeting.

2. Opening Remarks

On behalf of the Phnom Penh Capital Administration (hereinafter referred to as “PPCA”), H.E. Koeut Chhe, a chairperson of the 2nd JCC Meeting, welcomed all participants in the meeting. H.E. Koeut Chhe thanked continuous supports made by JICA and made opening remarks, highlighting the improvement of bus network and service since the PiBO Project commenced. The 2nd JCC Meeting started at 14:30 hours. Participants of the meeting are listed in the Attachment 1.

3. Welcome Remarks

Mr. Kotaro Tanaka welcomed all participants in the meeting. Mr. Kotaro Tanaka made welcome remarks, briefing the background of the Project and thanked H.E. Koeut Chhe for his commitment in development of the urban transport system and that to the PiBO Project. Mr. Kotaro Tanaka concluded his remarks by encouraging all participants to consider the benefit of the PiBO Project for Cambodian government and citizens so that the outcome derived from the Project would be materialized.

4. Presentation by Project Member

Mr. Ean Sokhim, Governor of City Bus Authority (hereinafter referred to as “CBA”), made a presentation on the progress and achievement of the bus network and service, highlighting the following bullet points:

- Network expansion and service improvement
- Passenger increase
- Increased fleet and maintenance
- Depot in progress and terminal development
- Increase in drivers and administration staffs
- Maintaining accident rate low

- Introduction of ICT and user friendly service
- Free for vulnerable groups & social service
- Public perception and customer satisfaction
- Dissemination Campaign

Mr. Kiminari Takahashi, Chief Advisor of the JICA Expert Team, made a presentation, highlighting the following bullet points:

- Summary PiBO Progress Report
- Matters arising
 - Institutional changes in CBA
 - Delivery of 80 Japanese buses and route expansion/staff employment
 - Bus network review and improved network plan
 - Recruitment and training for drivers/mechanics
 - Proposed bus priority measures and pilot project
 - Financial stability of CBA
 - Public perception and customer satisfaction

5. Comments on the Presentation

After the presentation, participants of the 2nd JCC Meeting were requested to ask questions and provide comments, and the JICA Experts responded these comments, and discussions and agreements during the meeting are summarized below.

1) Bus Network Plan and Service

- Bus network plan should be developed basing on not only bus users' survey but also passenger demand/opinion, especially those of non-bus users (Deputy Director of DPWT)
- The bus network plan and service should take into account various demands and needs including (i) women's perception for bus and taxi, (ii) low income group's perception for bus and other transport modes, (iii) airport demand such as taxi for foreigners and self pick up by locals. (Deputy Governor)
- Proposed bus network plan should take into account a multimodal interchange function between AGT and bus (Deputy Director of DPWT)
- Necessity of intercity bus terminal(s) is emphasized, referring to failure in previous years attempting to develop the intercity bus terminal(s) along NR-6A and NR-5. (Deputy Governor)
- Improvement of bus transport service is essential to achieve the project goal. To do so, 'increased frequency', 'improved schedule reliability' and 'cleanness of bus fleets' are emphasized as essential factors to increase the passenger demand from 0.2% to 2.0% of

trips in Phnom Penh. (Representative of MEF)

- JICA Expert responded:
 - The bus network plan is developed following the proposed design principle and will be further reviewed and fine-tuned through passenger demand, including non-bus user survey conducted by CBA/JICA Expert Team, as one of the key design principles.
 - Following the bus and non-bus user survey, the current bus network and service should be improved, with an emphasis of ‘increased frequency’, ‘improved schedule reliability’ and ‘ease of transfer’.
 - The result of cordon line survey, currently carried out under the Project to understand the number of intercity transport service, would be shared among JCC members which provides an essential input for designing intercity bus terminal facilities.

2) Bus Priority Measures

- Bus priority measures should be effective to manage the traffic demand and restrictive measures such as Area Pricing, Road Pricing and Car Sharing should be considered to be associated with bus priority measures (Deputy Director of DPWT)
- Priority corridor (Line 4B) for bus priority measures is identical to AGT alignment and these bus priority measures should be well designed considering AGT’s implementation plan, under the assumption that construction of AGT affects the proposed bus priority measures (Deputy Director of DPWT).
- It was briefed the tentative implementation plan of the AGT, demonstrating completion of AGT construction by 2026 and considerable time required for consultant/contractor’s procurement and detailed design/bidding document preparation. (JICA Representative)
- Implementation of bus priority measures should be associated with strict enforcement and the success of bus priority measures requires supports by JCC members, especially Khan Leaders and Traffic Polices (Deputy Governor)
- Importance of sidewalk and bus shelter is urged to improve the bus transport service, encouraging more passengers to shift to use public transport service. Also, restrictive measures such as hike of car licensing/inspection price as well as increase of fuel price should be also considered to realize a modal shift to bus transport.
- JICA Expert responded:
 - Appreciating the idea of proposed restrictive measures, it was proposed that introduction of restrictive measures should be carefully designed and implemented

once bus priority measures are in place and bus transport is considered as an alternative means of transport to a passenger car.

- Deputy Governor (Chairperson) confirmed and JCC members agreed with no further comments:
 - Line 4B as a priority corridor and proposed bus priority measures are confirmed relevant and optimum. The priority measures should be implemented as proposed along Line 4B while awaiting for the construction and operation of the AGT.
 - Restrictive measures such as change of car licensing/inspection scheme, requires amendment of related law/regulation, which is considered beyond the scope of works dealt by JCC members and PiBO Project.

3) Mobility Management

- Importance of mobility management is emphasized, urging a series of media and SNS campaign is essential and suggesting Khan Leaders should disseminate bus transport service to SNS, taking the bus by themselves. (Deputy Governor)
- JICA Expert responded:
 - Appreciating emphasis on importance of mobility management, it was suggested that CBA and JICA Expert will work together for further mobility management programs as planned, including (i) improved bus stop design, (ii) improved bus information (e.g., transfer map) as well as (iii) dissemination campaign, including media and SNS campaign.

4) Institutional change of CBA

- It was briefed that MEF requested PPCA to upgrade (i) business oriented State Enterprise or (ii) social service oriented Public Administrative Enterprise, and suggested that it is a right track that CBA/PPCA consider to go for Public Administrative Enterprise option considering the nature of bus transport business. It was also mentioned that the board of management of Public Administrative Enterprise may include wider range of representatives, including those from MEF, MPWT, MOI, and PPCA and that Public Administrative Enterprise will have more autonomous function including recruitment of staff and management of revenue/expense. (Representative of MEF)
- It was then confirmed that even CBA be updated to Public Administrative Enterprise, there would be no changes in the scope of work of the PiBO Project, limiting to improvement of bus network and service in Phnom Penh. (Representative of MEF)
- Deputy Governor (Chairperson) confirmed and JCC members agreed with no further comments:

- Even CBA be updated to Public Administrative Enterprise, there would be no changes in the scope of work of the PiBO Project as suggested and PPCA would continue to support CBA/PiBO Project as part of board members as well as financier to CBA/PiBO Project.

6. Mission Remarks

Mr. Taro Okawa recorded efforts of PPCA, CBA and the JICA Expert Team for project implementation during last one and half years period. Mr. Taro Okawa explained the project had progressed smoothly, especially the expansion of bus network and preparation for installing Japanese buses: new bus routes, employment of drivers and mechanics and bus priority measures etc. Mr. Taro Okawa added we needed more efforts from both sides in order to carry out further activities for modal shift to ridding on public transport. Mr. Taro Okawa concluded that changing passenger habits was quite difficult, however this project activity had a precious chance to urge more citizens to ride on public buses. Mr. Taro Okawa then made following requests to PPCA, CBA and JICA Expert Team:

- CBA/JICA Expert should study and propose how to optimally allocate 80 Japanese buses in different lines and discuss with PPCA to seek for official approval by Governor at appropriate timing (by end Sep 2018).
- A success of implementation of pilot projects requires commitment and supports from relevant agencies and 6 components of pilot projects proposed by JICA Expert should appear in the budget plan of next fiscal year.
- Importance of mobility management is urged, highlighting importance of changing local perception toward bus service. In line with this, public officers including CBA and PPCA, MPWT should use bus transport for commuter transport.
- CBA/PPCA should employ and train drivers and mechanics as proposed by JICA Expert to safely operate the additional 80 Japanese buses, recommending that completion of parking space and workshop construction by July 2018, utility installation by August 2018 and implementation of training in Sep 2018.

7. Closing Remarks

H.E. Koeut Chhe appreciated the continuous supports by JICA and expressed his commitments in successful implementation of the PiBO Project and improvement of bus network and service.

H.E. Koeut Chhe urged during his closing remarks:

- Bus route plan should consider the expansion of the city and further survey(s) is recommended to understand weekday/weekend traffic demand along the intercity trunk routes.
- Both PPCA and Khan are committed to improving bus network service including

implementation of pilot project and enforcement associated with the pilot project.

- CBA should prepare a budget plan for implementation of pilot project and submit it to PPCA by July 2018.
- CBA should call for a meeting with contractor/developer at earliest timing to discuss and confirm the implementation schedule of the depot, in order to ensure the training for mechanics would be carried out in Sep 2018.
- CBA and JICA Expert Team should fine-tune and submit the improved route plan, considering appropriate allocation of 80 Japanese buses.
- Referring to suspension of bus network and service in 2001, PPCA committed in continuously supporting bus network expansion and improved service as a high priority policy among PPCA.

The meeting adjourned at 18:30.

ATTACHMENT 1

Attendees of the 2nd JCC Meeting are listed below.

No.	Name	Sex	Position-Organization
1	H.E. Keut Chhe	M	Deputy Governor, Phnom Penh Capital Administration
2	Mr. Taro Okawa	M	Director, JICA Headquarters
3	Mr. Shata Seto	M	Staff, JICA Headquarters
4	Mr. Kotaro Tanaka	M	Senior Representative, JICA Cambodia Office
5	Mr. Pen Vutha	M	Director Department, MEF
6	Mr. Meng Chhun Heng	M	Director of UP.T, MPWT
7	Mr. Hideaki Iwase	M	Program Formulation Advisor, JICA Cambodia Office
8	Ms. Seng Solady	F	Program officer /JICA Cambodia Office
9	Mr. Chou Mengchan	M	Deputy Director of Administration, PPCA
10	Mr. Chou Kimtry	M	Deputy Director, DPWT
11	Mr. Prom Kampoul	M	Department Transportation Office, DPWT
12	Ms. Heng Sovatha	F	Deputy Director of International Cooperation, PPCA
13	Mr. Sin Boramey	M	Director of Urbanization Division, PPCA
14	Mr. Saray Sereypich	M	Chief Dept. Investigation, PPCA
15	Mr. Ean Sokhim	M	Governor, CBA
16	Mr. Ear Phirith	M	Deputy Governor, CBA
17	Mr. Kun Chanpagna	M	Deputy Governor, CBA
18	Mr. Kly Norak	M	Chief Administration, CBA
19	Mr. Danh Darith	M	Chief Accounting, CBA
20	Mr. Mel Sarith	M	Chief Technical, CBA

21	Mr. Lay Sokraksmeay	M	Chief Inspection, CBA
22	Mr. Kiminari Takahashi	M	Chief Advisor/ JICA PIBO
23	Dr. Kov Monyrath	M	Deputy Chief Advisor/ JICA PIBO
24	Mr. Hiroyuki Yamashita	M	Bus Facility Planning/ JICA PIBO
25	Mr. Yuki Takada	M	Bus Facility Planning (2)/ JICA PIBO
26	Mr. Horm Sim	M	Project Coordinator, JICA PIBO
27	Ms. Em Socheata	F	Project Assistant, JICA PIBO
28	Ms. Un Vanna	F	Project Secretary, JICA PIBO
29	Mr. Leng Ravong	M	Vice Governor, Chrouy Changvar District
30	Mr. Hout Leappiseth	M	Deputy Governor, Preah Pnov District
31	Mr. San Sophorn	M	Chief Administration, Russey Keo District
32	Mr. Keo Samol	M	Deputy Governor, Cham Karmorn District
33	Mr. Sim Tola	M	Deputy Chief Administration, Dangkor District
34	Ms. Keat Siviny	F	Deputy Chief Administration, 7 Makara District
35	Mr. Houy Virak	M	Chief Administration, Mean Chey District
36	Ms. Ly Rozami	F	Deputy Governor, Sen Sok District
37	Mr. Yos Youthy	M	Deputy Governor, Doun Penh District
38	Mr. Chan Bondith	M	Deputy Governor, Toul Kork District
39	Mr. Seng Kun	M	Deputy Governor, Por Sen Chey District
40	Mr. Bun Siphean	M	Deputy Director of Traffic Police Office
41	Mr. Ann Narith	M	Staff, MEF

3rd JCC MEETING

ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ



រដ្ឋបាលរាជធានីភ្នំពេញ

កំណត់ហេតុប្រជុំ

ស្តីពីការដាក់ឱ្យប្រើប្រាស់ប្រព័ន្ធគ្រប់គ្រងប្រតិបត្តិការ

ថេយន្តក្រុង (Bus Management System) និងប្រព័ន្ធតាមដានចលនាបណ្ណាស៍ទី

ថេយន្តក្រុង (City Bus App) និងកិច្ចប្រជុំគណៈកម្មការសម្របសម្រួលរួមលើកទី៣ (JCC)

ក្នុងក្របខ័ណ្ឌនៃគម្រោង ធ្វើឱ្យប្រសើរឡើងនូវសេវាដឹកជញ្ជូនសាធារណៈថេយន្តក្រុងសាធារណៈរាជធានីភ្នំពេញ

ឆ្នាំពីរពាន់ដប់ប្រាំបួន ខែកក្កដា ថ្ងៃទីបួន វេលាម៉ោងប្រាំពីរ និងសាមសិបនាទី នៅសាលារាជធានីភ្នំពេញ បានរៀបចំប្រកាសដាក់ឱ្យប្រើប្រាស់ជាផ្លូវការប្រព័ន្ធគ្រប់គ្រងប្រតិបត្តិការថេយន្តក្រុង (Bus Management System) និងប្រព័ន្ធតាមដានចលនាបណ្ណាស៍ទីថេយន្តក្រុង (City Bus App) និងកិច្ចប្រជុំគណៈកម្មការសម្របសម្រួលរួម (JCC) លើកទី៣ ស្តីពីគម្រោងធ្វើឱ្យប្រសើរឡើងនូវសេវាដឹកជញ្ជូនសាធារណៈថេយន្តក្រុងក្នុងរាជធានីភ្នំពេញ ក្រោមអធិបតី ភាពដ៏ខ្ពង់ខ្ពស់ **ឯកឧត្តម ឃួង ស្រេង អភិបាល នៃគណៈអភិបាលរាជធានីភ្នំពេញ**។

សមាសភាពចូលរួមប្រជុំដូចមានក្នុងបញ្ជីវត្តមានជូនភ្ជាប់មកជាមួយ។

របៀបវារៈនៃកិច្ចប្រជុំរួមមាន៖

- ១. ការដាក់ឱ្យប្រើប្រាស់ប្រព័ន្ធគ្រប់គ្រងប្រតិបត្តិការថេយន្តក្រុង (Bus Management System) និងប្រព័ន្ធតាម ដានចលនាបណ្ណាស៍ទីថេយន្តក្រុង (City Bus App) :

លោក **វិណន សុឃឹម** អភិបាលរដ្ឋាករស្វយ័តដឹកជញ្ជូនសាធារណៈថេយន្តក្រុង (City Bus) រាជធានីភ្នំពេញ បានមានប្រសាសន៍ថ្លែងអំណរគុណយ៉ាងក្រៃលែងចំពោះ **ឯកឧត្តម ឃួង ស្រេង** អភិបាល នៃគណៈអភិបាល រាជធានីភ្នំពេញ ព្រមទាំងឯកឧត្តម លោក លោកស្រី និងសមាជិកសមាជិកាដែលមានវត្តមានក្នុងអង្គប្រជុំ និងបាន មានប្រសាសន៍បន្តថា ដោយមានកិច្ចសហការជាមួយក្រុមជំនាញការ JICA ក្នុងគម្រោងធ្វើឱ្យប្រសើរឡើងនូវសេវា ដឹកជញ្ជូនសាធារណៈថេយន្តក្រុងក្នុងរាជធានីភ្នំពេញ (PIBO) រយៈពេល០៤ឆ្នាំ (២០១៧-២០២០) រដ្ឋាករបានដាក់ ឱ្យដំណើរការខ្សែរត់ ចំនួន១៣ខ្សែ ប្រើប្រាស់ថេយន្ត២៣៥គ្រឿង និងមានអ្នកជិះថេយន្តក្រុងប្រមាណ ពី២៦.០០០ នាក់ ទៅ៣០.០០០នាក់ ក្នុងមួយថ្ងៃ។ ទន្ទឹមនឹងនេះ រដ្ឋាករបានធ្វើទំនើបកម្មដោយបំពាក់ម៉ាស៊ីនទូទាត់ប្រាក់តាមប្រព័ន្ធ អេឡិចត្រូនិក ដោយប្រើប្រាស់កាត (NFC) របស់ធនាគារឯកទេសវីង និងអេស៊ីលីដាយូនីកូដធីទាន់ចិត្ត (QR-Code) របស់ធនាគារអេស៊ីលីដា និងមានបំពាក់ WIFI នៅលើថេយន្តក្រុងទាំងអស់ ព្រមទាំងបានរៀបចំជម្រករង់ចាំ ថ្មីចំនួន១៧៧ទីតាំង ចំណតរង់ចាំថេយន្តក្រុងចំនួន៩០៤ទីតាំង ដោយមានបំពាក់ភ្លើងបំភ្លឺនៅពេលយប់ផងដែរ។ ជាមួយគ្នានេះដែរ រដ្ឋាករ និងក្រុមជំនាញការក៏បានបំពាក់ប្រព័ន្ធ GPS និងបានរៀបចំប្រព័ន្ធគ្រប់គ្រងថេយន្តក្រុង (Bus Management System) និងប្រព័ន្ធតាមដានចលនាបណ្ណាស៍ទីថេយន្តក្រុង (City Bus App) ដើម្បីឱ្យប្រជាពលរដ្ឋ អាចទាញយកកម្មវិធីនេះ ប្រើប្រាស់ និងដឹងពីរយៈពេលនៃការមកដល់ថេយន្តក្រុង ចៀសវាងការរង់ចាំយូរ។

Kh

លោក ពេ សុគុន្តវិសិដ្ឋ តំណាងក្រុមហ៊ុន ITSUMO បានធ្វើបទបង្ហាញអំពី City Bus App និងសារៈប្រយោជន៍ នៃការប្រើប្រាស់ App គឺបង្កើនភាពងាយស្រួលដល់ការប្រើប្រាស់សេវាថយន្តក្រុងដោយមិនរង់ចាំយូរ និងខាតពេល វេលា។ ពិសេសជាងនេះទៅទៀត App ជួយបង្ហាញព័ត៌មានអំពីថយន្តក្រុង ចំណតរង់ចាំ និងខ្សែរត់នីមួយៗផងដែរ។

ឯកឧត្តម **ឃ្មុន ស្រេង** អភិបាល នៃគណៈអភិបាលរាជធានីភ្នំពេញ បានមានប្រសាសន៍ស្វាគមន៍ចំពោះ វគ្គមានរបស់ឯកឧត្តម លោក លោកស្រី និងសមាជិក សមាជិកាដែលបានអញ្ជើញចូលរួមក្នុងពិធីនេះ និងបានមាន ប្រសាសន៍កោតសរសើរ និងវាយតម្លៃខ្ពស់ចំពោះកិច្ចខិតខំប្រឹងប្រែងរបស់មន្ទីរ អង្គភាពជំនាញពាក់ព័ន្ធ ពិសេសមន្ទីរ សាធារណការ និងដឹកជញ្ជូនរាជធានីភ្នំពេញ និងរដ្ឋាករស្វយ័តដឹកជញ្ជូនសាធារណៈថយន្តក្រុង (City Bus) រាជធានីភ្នំពេញ ដែលបានផ្តល់កិច្ចសហការយ៉ាងល្អជាមួយក្រុមជំនាញការ JICA ក្នុងការធ្វើឱ្យប្រសើរឡើងនូវសេវា ដឹកជញ្ជូនសាធារណៈថយន្តក្រុងក្នុងរាជធានីភ្នំពេញ (PIBO) និងបានបង្កើតប្រព័ន្ធគ្រប់គ្រងប្រតិបត្តិការថយន្តក្រុង (Bus Management System) និងប្រព័ន្ធតាមដានចលនាបម្លាស់ទីថយន្តក្រុង (City Bus App) ដែលបានបង្កលក្ខណៈ ងាយស្រួលដល់អ្នកប្រើប្រាស់សេវាថយន្តក្រុងនាពេលបច្ចុប្បន្ន ។ មិនតែប៉ុណ្ណោះ ក្រុមជំនាញការ JICA បានសហការ ជាមួយរដ្ឋាបាលរាជធានីភ្នំពេញ មន្ទីរ រដ្ឋាករ និងអង្គភាពពាក់ព័ន្ធ ដើម្បីធ្វើឱ្យប្រសើរឡើងនូវការត្រួតពិនិត្យ និងថែទាំ ថយន្តក្រុង ប្រព័ន្ធគ្រប់គ្រងបញ្ហាលើអ្នកបើកបរ ការគ្រប់គ្រងអាជីវកម្ម និងសមត្ថភាពក្នុងការរៀបចំផែនការ និង គោលនយោបាយស្តីពីវិធានការអាទិភាពសម្រាប់ថយន្តក្រុង។ ជាទីបញ្ចប់ ឯកឧត្តមក៏បានសំណូមពរ ដល់ឯកឧត្តម លោក លោកស្រី និងសមាជិកសមាជិកានៃអង្គពិធី សុំចូលរួមប្រើប្រាស់កម្មវិធីខាងលើឱ្យបានច្រើន និងជួយផ្សព្វផ្សាយ កម្មវិធីនេះឱ្យបានទូលំទូលាយជាងនេះបន្ថែមទៀត និងបានប្រកាសដាក់ឱ្យប្រើប្រាស់នូវប្រព័ន្ធគ្រប់គ្រងប្រតិបត្តិការ ថយន្តក្រុង (Bus Management System) និងប្រព័ន្ធតាមដានចលនាបម្លាស់ទីថយន្តក្រុង (City Bus App) ជាផ្លូវការ ចាប់ពីពេលនេះ តទៅ។

២. កិច្ចប្រជុំគណៈកម្មការសម្របសម្រួលរួមលើកទី៣ (JCC) ក្នុងក្របខ័ណ្ឌនៃគម្រោងធ្វើឱ្យប្រសើរឡើងនូវសេវា ដឹកជញ្ជូនសាធារណៈថយន្តក្រុង:

ជាកិច្ចចាប់ផ្តើម ឯកឧត្តម **ឃ្មុន ស្រេង** អភិបាល នៃគណៈអភិបាលរាជធានីភ្នំពេញ បានមានប្រសាសន៍ ស្វាគមន៍សា ជាថ្មីម្តងទៀត ចំពោះវគ្គមានរបស់ឯកឧត្តម លោក លោកស្រី និងសមាជិកសមាជិកាដែលបានអញ្ជើញ ចូលរួមក្នុងពិធីនេះ និងបានបន្តថា កិច្ចប្រជុំគណៈកម្មការសម្របសម្រួលរួមលើកទី៣ ក្នុងក្របខ័ណ្ឌនៃគម្រោងធ្វើឱ្យ ប្រសើរឡើងនូវសេវាដឹកជញ្ជូនថយន្តក្រុងសាធារណៈនៅរាជធានីភ្នំពេញនេះ គឺប្រព្រឹត្តទៅទៀងទាត់ជារៀងរាល់ឆ្នាំ ចាប់ពីឆ្នាំ២០១៧មកម្ល៉េះ។ ដោយមានគោលបំណងពិភាក្សាអំពីផែនការ និងសកម្មភាពនានាដែលសម្រេចបាន និងបញ្ហាប្រឈមនានាកន្លងមកដែលត្រូវធ្វើការដោះស្រាយរួមគ្នា ក៏ដូចជាលើកទិសដៅសកម្មភាពការងារដែលត្រូវអនុវត្ត បន្ត នៅឆ្នាំបន្តបន្ទាប់ទៀត ។ ឯកឧត្តមប្រធានអង្គប្រជុំ បានមានប្រសាសន៍បន្ថែមថា បើទោះបីជារដ្ឋាករ និងក្រុមជំនាញ ការ JICA សម្រេចបាននូវសមិទ្ធផលជាច្រើនគួរឱ្យកត់សម្គាល់ដ៏ដោយ ក៏ប្រតិបត្តិការថយន្តក្រុងនៅជួបបញ្ហាប្រឈម មួយចំនួននាពេលបច្ចុប្បន្ន ដូចជាបញ្ហាហិរញ្ញវត្ថុជាដើម ដែលត្រូវការឧបត្ថម្ភធនជាច្រើនពីសាលារាជធានីភ្នំពេញដើម្បី ទ្រទ្រង់នូវការខាតបង់ក្នុងអាជីវកម្មរបស់ខ្លួន។ ដូច្នេះ កិច្ចការបន្ទាប់ដែលយើងត្រូវអនុវត្តនោះគឺ ការអូសទាញទឹកចិត្ត អ្នកដែលប្រើប្រាស់មធ្យោបាយផ្ទាល់ខ្លួនអោយមកប្រើប្រាស់សេវាថយន្តក្រុង ការបញ្ជ្រាបព័ត៌មានឱ្យបានទូលំទូលាយ ពីសេវាថយន្តក្រុង និងការបង្កើតនូវយន្តការដើម្បីធានាបាននូវស្ថិរភាពហិរញ្ញវត្ថុរបស់រដ្ឋាករ។ កិច្ចប្រជុំគណៈកម្មការ

សម្របសម្រួលរួមលើកទី៣ ក្នុងក្របខ័ណ្ឌនៃគម្រោងធ្វើឱ្យប្រសើរឡើងនូវសេវាដឹកជញ្ជូនសាធារណៈរថយន្តក្រុងនេះ នឹងចាប់ផ្តើមពិភាក្សាលើបញ្ហាសំខាន់ៗមួយចំនួននាពេលបន្តិចទៀតនេះ។ ដូច្នោះ សូមឱ្យក្រុមជំនាញការ JICA តំណាង ក្រសួង និងស្ថាប័នពាក់ព័ន្ធនានាចូលរួមពិភាក្សាគ្នាឱ្យបានផុសផុល ធ្វើយ៉ាងណាឱ្យកិច្ចប្រជុំនេះក្លាយជាអង្គពិភាក្សា ដែលមានសារៈសំខាន់ និងប្រមូលបានធាតុចូលឱ្យបានច្រើន សំដៅធ្វើឱ្យសេវាដឹកជញ្ជូនសាធារណៈរថយន្តក្រុងកាន់ តែមានប្រសិទ្ធភាពខ្ពស់ និងមាននិរន្តរភាព ហើយឯកឧត្តមក៏បានប្រកាសបើកកិច្ចប្រជុំគណៈកម្មការសម្របសម្រួលរួម លើកទី៣ ចាប់ពីពេលនេះតទៅ។

លោក SUGANO YUICHI ប្រធានតំណាងការិយាល័យ JICA ប្រចាំនៅព្រះរាជាណាចក្រកម្ពុជា បានមាន ប្រសាសន៍ចាប់អារម្មណ៍ និងថ្លែងអំណរគុណយ៉ាងជ្រាលជ្រៅចំពោះ ឯកឧត្តម **ហ៊ុន សែន** អភិបាល នៃគណៈអភិបាល រាជធានីភ្នំពេញ ដែលបានផ្តល់កិត្តិយសអញ្ជើញជាអធិបតីក្នុងកិច្ចប្រជុំនេះ និងបានមានប្រសាសន៍បន្តថា កិច្ចប្រជុំ គណៈកម្មការសម្របសម្រួលរួមលើកទី៣ដែលរៀបចំនាឱកាសនេះ គឺជាការបន្តការអនុវត្តគម្រោងដែលត្រូវបាន ចាប់ផ្តើមតាំងពី ខែមករា ឆ្នាំ២០១៧ មកម៉្លេះ ហើយគាត់មានការជឿជាក់ថាមានសមិទ្ធផលជាច្រើនដែលសម្រេចបាន ពីការខិតខំប្រឹងប្រែងពីក្រសួង ស្ថាប័ន និងអង្គភាពពាក់ព័ន្ធនានា ពិសេសរដ្ឋបាលរាជធានីភ្នំពេញលើគម្រោងនេះ។ ជាក់ស្តែង ការបង្កើតប្រព័ន្ធគ្រប់គ្រងប្រតិបត្តិការរថយន្តក្រុង (Bus Management System) ប្រព័ន្ធតាមដានចលនា បម្លាស់ទីរថយន្តក្រុង (City Bus App) និងផែនការសកម្មភាពជាច្រើនទៀតដែលក្រុមការងារបាននឹងកំពុងអនុវត្ត។ ក្រៅពីគម្រោងខាងលើ យើងក៏បានផ្តល់ថវិកា៨០គ្រឿង ដែលបានរៀបចំពិធីប្រគល់-ទទួលជាផ្លូវការរួចរាល់កាលពីថ្ងៃ ទី១៩ ខែមិថុនា ឆ្នាំ២០១៩ និងបានដាក់ឱ្យដំណើរការជារៀងរាល់ថ្ងៃនេះ ដែលរដ្ឋាករក៏បានបន្ថែមខ្សែរត់រហូតដល់ ១៣ខ្សែ ហើយចំនួនអ្នកជិះរថយន្តក្រុងមានការកើនឡើងពី ២៦.០០០នាក់ ទៅ៣០.០០០នាក់ ក្នុងមួយថ្ងៃ។ ទន្ទឹមនឹង នេះដែរ ក៏នៅមានបញ្ហាប្រឈមជាច្រើនទៀតដែលទាមទារឱ្យមានការខិតខំប្រឹងប្រែង និងមានការពិភាក្សាគ្នាបន្តទៀត ដូចជាការសិក្សាលើបញ្ហាផ្លូវអាទិភាព ការផ្សព្វផ្សាយពីសេវារថយន្តក្រុងឱ្យបានទូលំទូលាយ និងការពង្រឹងការគ្រប់គ្រង ប្រតិបត្តិការ រថយន្តក្រុងឱ្យកាន់តែមានប្រសិទ្ធភាព។ ជាចុងក្រោយ លោក SUGANO YUICHI បានលើកទឹកចិត្តដល់អ្នក ចូលរួមក្នុងអង្គប្រជុំទាំងអស់ចូលរួមផ្តល់យោបល់ និងបន្ថែមធាតុចូលឱ្យបានច្រើនទៅលើផែនការសកម្មភាពនៃគម្រោង ដើម្បីអភិវឌ្ឍវិស័យដឹកជញ្ជូនក្នុងរាជធានីភ្នំពេញកាន់តែមានការរីកចម្រើនឡើង។

លោក **វិណន សុឃីម** អភិបាលរដ្ឋាករស្វយ័តដឹកជញ្ជូនសាធារណៈរថយន្តក្រុង (City Bus) រាជធានីភ្នំពេញ បានធ្វើ បទបង្ហាញស្តីពីវឌ្ឍនភាពទាំង១០របស់រដ្ឋាករដែលរួមមាន៖

- ការពង្រីកបណ្តាញខ្សែរត់ពី០៣ខ្សែ ទៅ១៣ខ្សែ និងការកែលម្អសេវា
- ចំនួនអ្នកជិះមានការកើនឡើងពី២៦.០០០នាក់ ទៅ៣០.០០០នាក់ក្នុងមួយថ្ងៃ និងមូលហេតុពាក់ព័ន្ធ
- ការកើនឡើងនូវចំនួនរថយន្តក្រុងពី ៥៧គ្រឿង ទៅ២៣៥គ្រឿង ការជួសជុល និងថែទាំរថយន្តក្រុង
- ការអភិវឌ្ឍន៍ស្ថានីយចំណតរថយន្តក្រុង (Bus Depot) ក្រោមការយកចិត្តទុកដាក់ឧបត្ថម្ភគាំទ្រពីរដ្ឋបាល រាជធានីភ្នំពេញ
- ការកើនឡើងនូវចំនួនបុគ្គលិកអ្នកបើកបរ និងបុគ្គលិករដ្ឋបាលស្របតាមការបន្ថែមខ្សែរត់ និងតម្រូវការភារកិច្ច
- អត្រាគ្រោះថ្នាក់ចរាចរណ៍ស្ថិតក្នុងកម្រិតទាប និងមូលហេតុនៃការគ្រប់គ្រងរបស់រដ្ឋាករ
- ការបំពាក់ប្រព័ន្ធបច្ចេកវិទ្យាព័ត៌មាន និងទូរគមនាគមន៍ (ICT) នៅលើរថយន្តក្រុងនិងសេវាកម្មដែលមានភាព ងាយស្រួល

KL

- ការជិះមិនបង់ប្រាក់សម្រាប់ជនគោលដៅមួយចំនួន និងការចូលរួមសកម្មភាពកិច្ចការសង្គម - ជីវភាព
- ការយល់ដឹង និងការពេញចិត្តរបស់ប្រជាពលរដ្ឋលើសេវាថយន្តក្រុង
- ការធ្វើយុទ្ធនាការផ្សព្វផ្សាយពីសេវាថយន្តក្រុងដល់ខណ្ឌទាំង១៤

លោក **គីមីណារី តាកាហារាស៊ី** ប្រធានក្រុមជំនាញការ JICA បានមានប្រសាសន៍ថា ដោយសារពេលវេលាមានកំណត់ គាត់សុំការអនុញ្ញាតសង្ខេបរបាយការណ៍ ដោយបានលើកឡើងនូវចំណុចដែលសម្រេចបាន និងសមិទ្ធផលនានាដែលកើតចេញពីការសហការគ្នាក្នុងមករវាងរដ្ឋាករ និងក្រុមជំនាញការ JICA ។ ដូចអ្វីដែលលោកអភិបាលរដ្ឋាករបានជម្រាបជូនមុននេះ គឺគោលដៅដែលក្រុមការងារចង់បាននោះគឺចំនួនអ្នកជិះថយន្តក្រុងមានការកើនឡើងដល់ ៧០.០០០នាក់ក្នុងមួយថ្ងៃ នៅឆ្នាំ២០២០ និងការគ្រប់គ្រងប្រតិបត្តិការថយន្តក្រុងឱ្យកាន់តែប្រសើរ។ បន្ថែមជាងនេះទៅទៀត លោកក៏បានដាក់ចេញនូវចំណុចចំនួន៥ ដូចជា ការលើកកម្ពស់សមត្ថភាពប្រតិបត្តិការថយន្តក្រុង ការលើកកម្ពស់សមត្ថភាពត្រួតពិនិត្យ និងជួសជុលថយន្តក្រុង ការបណ្តុះបណ្តាលអ្នកបើកបរ ការលើកកម្ពស់សមត្ថភាពគ្រប់គ្រងថយន្តក្រុង និងការលើកកម្ពស់ផែនការគោលនយោបាយសម្រាប់វិធានការផ្លូវអាទិភាពថយន្តក្រុង ហើយចំណុចទាំងនេះនឹងដាក់ជូនអង្គប្រជុំពិភាក្សា ដើម្បីស្វែងរកយុទ្ធសាស្ត្រក្នុងការសម្រេចបានភាពជោគជ័យ ទទួលបានអ្នកជិះ ៧០.០០០នាក់ក្នុង១ថ្ងៃ នៅឆ្នាំ២០២០ ក៏ដូចជាជួយបង្កើនប្រាក់ចំណូលនិងកាត់បន្ថយការចំណាយ និងការបង្កើតនូវយន្តការដើម្បីធានាបាននូវស្ថិរភាពហិរញ្ញវត្ថុរបស់រដ្ឋាករផងដែរ ។

លោក **ហ្រ្វីត អូលីយេ** ក្រុមជំនាញការ JICA បានធ្វើបទបង្ហាញស្តីពីការលើកកម្ពស់ការយល់ដឹងផ្នែកសេវាថយន្តក្រុង នូវចំណុចមួយចំនួនដូចជា៖ យុទ្ធសាស្ត្រ និងគោលនយោបាយ ប្រមូលអ្នកជិះឱ្យបានច្រើន ដើម្បីទ្រទ្រង់ការចំណាយ ការបង្កើនប្រសិទ្ធភាពប្រតិបត្តិការថយន្តក្រុង និងទិសដៅស្ថិរភាពហិរញ្ញវត្ថុ តាមរយៈការបង្កើតសេវាដែលមានការជឿទុកចិត្ត មានជាសុភាព មានភាពងាយស្រួល សុវត្ថិភាព និងភាពស៊ីវិលយសម្រាប់អ្នកប្រើប្រាស់ ក្នុងគោលបំណងជួយសន្សំពេលវេលា និងថវិកា កាត់បន្ថយការបំពុលបរិស្ថាន ការកកស្ទះចរាចរណ៍ និងគ្រោះថ្នាក់ចរាចរណ៍ ។ លោកបានបន្ថែមថា ដើម្បីយកឈ្នះទីផ្សារបាន លុះត្រាតែមានការចូលរួមសហការពីស្ថាប័នពាក់ព័ន្ធ និងជួយផ្សព្វផ្សាយជូនប្រជាពលរដ្ឋឱ្យមានការយល់ដឹងបន្ថែម ក៏ដូចជាបន្តសិក្សាពីផែនការសកម្មភាពនានាដែលមិនទាន់អនុវត្តបានល្អប្រសើរ។

លោក **គីមីណារី តាកាហារាស៊ី** បានធ្វើបទបង្ហាញស្តីពីផែនការសកម្មភាព ស្តីពីគម្រោងសាកល្បង លើវិធានការផ្លូវអាទិភាពថយន្តក្រុង ដោយបានលើកឡើងថា ការប្រើប្រាស់ហេដ្ឋារចនាសម្ព័ន្ធដែលមានស្រាប់ អោយអស់សក្តានុពលគឺជាអ្វីដែលយើងទាំងអស់គ្នាបាននិងកំពុងធ្វើ ហើយការសិក្សាលើផ្លូវអាទិភាពថយន្តក្រុងនេះពិតជាមានសារៈសំខាន់ណាស់ ក្នុងការកាត់បន្ថយការកកស្ទះចរាចរណ៍ ការកែសម្រួលឱ្យថយន្តក្រុងរត់ទាន់ពេលវេលា បង្កើនការផ្តល់សេវាល្អ និងជួយទាក់ទាញអ្នកប្រើប្រាស់សេវាថយន្តក្រុងកាន់តែច្រើនថែមទៀត។ ផ្អែកតាមការសិក្សាកន្លងមក ការអនុវត្តសាកល្បងផ្លូវអាទិភាព គឺត្រូវបានជ្រើសរើសយកផ្លូវហ្សាលដឺហ្សាល មុនីរ៉េត ដែលមានប្រវែង ២,៥គីឡូម៉ែត្រ ដោយថយន្តក្រុងអាចប្រតិបត្តិការលើផ្លូវនេះពេញមួយថ្ងៃ ឬគ្រាន់តែរត់នៅម៉ោងមមាញឹកក៏បាន អាស្រ័យលើការពិភាក្សាគ្នា និងស្ថានភាពជាក់ស្តែង ហើយការចំណាយលើគម្រោងសាកល្បងផ្លូវអាទិភាពថយន្តក្រុងនេះមានចំនួនប្រហែល ១០ម៉ឺនដុល្លារ។

បន្ទាប់ពីស្តាប់បទបង្ហាញរបស់អ្នកជំនាញការ JICA រួចមក ឯកឧត្តមប្រធានអង្គប្រជុំក៏បានបើកកិច្ចពិភាក្សាគ្នាដោយអនុញ្ញាតឱ្យសមាជិក សមាជិកាដែលបានចូលរួម លើកយោបល់ ។

លោក **ឌីង ឈុនហេង** ប្រធាននាយកដ្ឋានដឹកជញ្ជូនសាធារណៈនៃក្រសួងសាធារណការ និងដឹកជញ្ជូន បានមានប្រសាសន៍ថា គម្រោងដែលក្រុមការងារបានលើកឡើងពិតជាមានសារៈសំខាន់ណាស់ក្នុងការធ្វើឱ្យសេវាថយន្តក្រុងកាន់តែមានប្រសិទ្ធភាព និងបានសំណូមពររបន្ថែមថា ដើម្បីឱ្យគម្រោងនេះអនុវត្តបានជោគជ័យ និងសម្រេចបាន

គោលដៅមានអ្នកជិះថយន្តក្រុងចំនួន ៧០.០០០នាក់ ក្នុងមួយថ្ងៃនៅឆ្នាំ២០២០ ត្រូវតែមានការចូលរួមពីស្ថាប័ន ពាក់ព័ន្ធ ពិសេសសាលារាជធានីភ្នំពេញផ្ទាល់។ ទន្ទឹមនឹងនោះដែរ លោកបានចូលរួមផ្តល់យោបល់នូវ៥ចំណុចរួមមាន៖ ១.ពង្រឹងយន្តការច្បាប់លើសេវាថយន្តក្រុង ២.រៀបចំចំណាត់រង់ចាំឱ្យបានល្អប្រសើរ ៣.រៀបចំផ្លូវថ្មីជើង និងបរិស្ថានល្អ ៤.បង្កើនល្បឿនថយន្តក្រុង និងពេលវេលារង់ចាំបានទៀងទាត់ ៥.បន្ថែមខ្សែរត់ និងចំនួនថយន្តក្រុង។

ឯកឧត្តម **ឃុន ស្រេង** អភិបាល នៃគណៈអភិបាលរាជធានីភ្នំពេញ បានមានប្រសាសន៍ថា ទាក់ទងនឹងមតិ របស់តំណាងក្រសួង រដ្ឋបាលរាជធានីភ្នំពេញ រដ្ឋាករ និងស្ថាប័នពាក់ព័ន្ធបាននិងកំពុងរៀបចំអនុវត្តហើយ។ ស្របពេល ជាមួយគ្នានេះដែរ ដើម្បីឱ្យគម្រោងនេះដំណើរការបានជោគជ័យ សូមឱ្យមានការសាកល្បង ហើយត្រូវមានការចូលរួម ពីស្ថាប័នពាក់ព័ន្ធ និងឯកភាពលើវិធានការផ្លូវអាទិភាព និងផ្លូវឯកទិស ដោយឡែកបញ្ជាតម្លៃសំបុត្រសូមរក្សានៅ ដដែល ហើយរដ្ឋាភិបាលកំពុងសិក្សាលើការឧបត្ថម្ភធនសម្រាប់ទ្រទ្រង់ផ្នែកហិរញ្ញវត្ថុរដ្ឋាករឱ្យមានស្ថិរភាព។ ទន្ទឹមនឹង នោះដែរ ឯកឧត្តមបានមានប្រសាសន៍ណែនាំដល់រដ្ឋាករឱ្យបង្កើនការអប់រំដល់អ្នកបើកបរឱ្យបានជាប់ជាប្រចាំ និងបាន សំណូមពរឱ្យមានការចូលរួមគ្រប់ខណ្ឌទាំងអស់ក្នុងរាជធានីភ្នំពេញ ពិសេសការចូលរួមជួយថែទាំចំណាត់រង់ចាំថយ ន្តក្រុង និងសមិទ្ធផលនានារបស់រដ្ឋាករ ដើម្បីធានាបានការប្រើប្រាស់យូរអង្វែង និងបានថ្លៃដំណើរគុណចំពោះ ឯកឧត្តម លោក លោកស្រី សមាជិក សមាជិកនៃអង្គប្រជុំដែលបានចំណាយពេលវេលាចូលរួមពិភាក្សា និងផ្តល់ យោបល់យ៉ាងផុលផុស ដែលជួយញ៉ាំងឱ្យពីធីនេះដំណើរការទៅដោយរលូន ទទួលបានផ្លែផ្កាគួរឱ្យកត់សម្គាល់ ។

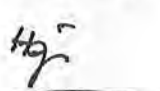
បន្ទាប់ពីបានពិភាក្សាគ្នា រួចមក អង្គប្រជុំបានសម្រេចដូចខាងក្រោម៖

1. ឯកភាពបង្កើតក្រុមការងារបច្ចេកទេស សិក្សា និងអនុវត្តសាកល្បងលើវិធានការផ្លូវអាទិភាពថយន្ត ក្រុងនៅ ផ្លូវហ្សាលដីហ្គាល -មុនីវ៉ែត ដែលមានប្រវែង២,៥គីឡូម៉ែត្រ។
2. រដ្ឋាករត្រូវយកចិត្តទុកដាក់បង្កើនការអប់រំដល់អ្នកបើកបរឱ្យបានជាប់ជាប្រចាំ និងធ្វើរបាយការណ៍ជូន មករដ្ឋបាលរាជធានីភ្នំពេញឱ្យបានទៀងទាត់ ។
3. រដ្ឋបាលខណ្ឌទាំង១៤ ត្រូវសហការជាមួយរដ្ឋាករ ដើម្បីថែរក្សាការពារសមិទ្ធផលនានា ពិសេសចំណាត់ រង់ចាំថយន្តក្រុងឱ្យបានគង់វង្ស ធានាបានការប្រើប្រាស់យូរអង្វែង និងរៀបចំសណ្តាប់ធ្នាប់តាម ចំណាត់ថយន្តក្រុងនីមួយៗ កុំឱ្យថយន្តឯកជន ឬម៉ូតូចតនៅលើគំនូស Bus Stop។
4. រដ្ឋាករ និងក្រុមជំនាញការ JICA ត្រូវបន្តផ្សព្វផ្សាយពិសេសថយន្តក្រុងឱ្យបានទូលំទូលាយ ដើម្បី សម្រេចបាននូវផែនការអ្នកជិះ ៧០.០០០នាក់ ក្នុងមួយថ្ងៃ នៅឆ្នាំ២០២០ ។

អង្គប្រជុំបានបញ្ចប់នៅវេលាម៉ោងដប់ពីរ និងសាមសិបនាទី នាថ្ងៃខែឆ្នាំដដែល ក្រោមបរិយាកាសរីករាយ និងស្ម័គ្រចិត្ត។

បានឃើញ និងឯកភាព
ប្រធានអង្គប្រជុំ

ឃុន ស្រេង

អ្នកធ្វើកំណត់ហេតុ

អិល សុឃីម

4th JCC MEETING

**MINUTES OF MEETING
OF
4TH JOINT COORDINATION COMMITTEE MEETING
FOR
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION
IN
PHNOM PENH**

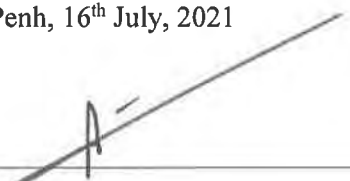
Agreed upon between

PHNOM PENH CAPITAL ADMINISTRATION

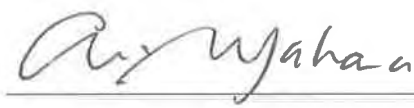
AND

JICA CAMBODIA OFFICE/JICA EXPERT TEAM

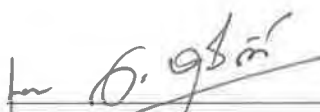
Phnom Penh, 16th July, 2021



H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration



Ms. Ai Miyahara
Deputy Chief Representative,
JICA Cambodia Office



Mr. Kiminari Takahashi
Chief Advisor,
JICA Expert Team

1. Introduction

The Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a team of JICA Experts on 15th January 2017, to commence 5-year project, namely, the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as “the PiBO Project”).

In the course of the PiBO Project, the JICA Experts and the counterpart agencies have been engaged in delivering five project outputs: (i) improvement of bus operation capacity, (ii) improvement of bus fleet maintenance capacity, (iii) training for bus driver, (iv) improvement of bus business management capacity and (v) improvement of public transport policy and planning capacity. As part of deliverables of the PiBO Project, the JICA Experts prepared Monitoring Sheets ver. 9, exploring the progress as well as achievement of the PiBO Project, and submitted the Monitoring Sheet ver. 9 in the 4th JCC Meeting.

2. Opening Remarks

On behalf of the Phnom Penh Capital Administration (hereinafter referred to as “PPCA”), H.E. Koet Chhe, a chairperson of the 4th JCC Meeting, welcomed all participants in the meeting. H.E. Koet Chhe thanked continuous supports made by JICA and made opening remarks, highlighting the achievement of public relation activities such as Bus Map, PR videos and City Bus App and the attempts to promote the bus ridership through various bus priority measures. H.E. Koet Chhe also regretted the suspension of the bus operation since March 2020 as part of the prevention measures from COVID-19 outbreak and emphasized that the 4th JCC is a good chance to share and discuss the countermeasures that City Bus Authority (hereinafter referred to as “CBA”) and PPCA have taken for restoration of the bus operation.

The 4th JCC Meeting started at 9:00 hours. Participants of the meeting are listed in the **Annex 1**. An opening remark made by H.E. Koet Chhe is attached to **Annex 2**.

3. Welcome Remarks

Ms. Ai Miyahara welcomed all participants in the meeting. Ms. Ai Miyahara made welcome remarks, thanking the PPCA and CBA for the commitment in the improvement of bus transport system in every difficult circumstance caused by the COVID-19 pandemic. A welcome remark made by Ms. Ai Miyahara is attached to **Annex 3**.

4. Presentation by Project Member

Mr. Yuki Fujita, JICA officer in charge of PiBO Project, made a presentation ‘Aiming for safe and reliable public transportation’, to share a cross-country study on sustainable operation and infection prevention measures against COVID-19 in public transport sector. He explained a variety of initiatives that the public transport operators and public agencies have been taking: Ensure employee safety, Control the infection of public transport passengers, Maintain vehicles to

control infection, Coordinate operation, as well as Maintain public transportation facilities.

Mr. Ean Sokhim, Governor of City Bus Authority, made a presentation on the progress and achievement of preparatory works for the restoration of the bus operation during and post COVID-19 pandemic, highlighting the following bullet points:

- Maintaining Staff Employment for Restoration of Bus Operation
- Transportation of Essential Workers and Arrival Air Passengers
- Learning Seminar on Hygiene and Prevention against COVID-19
- Training on COVID19 Countermeasures for CBA Management and Staffs
- Installation of Driver Shield
- PR Material on Preventive Measures and “Stop COVID” QR Sticker
- Donation from JICA of the COVID19 Preventive Goods
- Production of Bus Promotion Videos to be released when Bus Service Resumes
- Bus Periodic Inspection and Maintenance
- Updating Information on Bus Route Sticker and Bus Stop Banner

Mr. Kiminari Takahashi, Chief Advisor of the JICA Expert Team, made a presentation on the Monitoring Sheet ver. 9, demonstrating the progress and achievement of the PiBO Project and highlighting both ridership (70,000 Pax per day as the target) and the amount of bus revenue still far behind the project targets.

Mr. Kiminari Takahashi continued to make a presentation on (i) Proposed operation plan under COVID-19 and revenue generation scheme, (ii) Mobility management scheme for restoration of bus operation, and (iii) Enhanced fleet management.

5. Comments on the Presentation

After the presentation, H.E. Koout Chhe, expressing his gratitude to achievements made by JICA, CBA and JICA Expert Team even during the COVID-19 pandemic, provided comments and inquiries related to the presentation:

- Should the PPCA restore the bus operation bearing the loss of around 6,000 USD per day or should the PPCA use this opportunity cost for other purpose such as the countermeasures against COVID-19?
- Should the PPCA restore the bus operation under the condition that delta COVID-19 has been outbreaking in neighboring countries and the returning of Cambodian laborers carrying back home this new variation?

For the basis of the discussion, H.E. Koout Chhe raised that the restoration of the bus operation should be flexibly implemented when the situation allows under “New Normal” practice and emphasized that the PPCA continues to maintain the employment of the CBA staffs for full restoration of the bus operation. H.E. Koout Chhe, however, expressed his concerns on his

confidence for restoration of the bus operation due to uncertainty caused by the COVID-19 and invited the participants to comment and suggest how to regime the bus operation.

Mr. Chou Kimtry, Deputy Director of DPWT Phnom Penh, provided the following comments:

- Should the CBA only allow the bus passengers for those who completed the vaccination when the bus operation is restored, following the travel rule and restriction imposed during the Tokyo Olympic?
- The bus lane that DPWT and JICA Expert Team has studied before the COVID-19 should be designed together with the road widening and proper pedestrian walkway. The one dedicated bus lane plus one lane for mixed traffic arrangement which DPWT and JICA Expert Team has studied may cause the significant negative impacts on the flow of the mixed traffic.

H.E. Koet Chhe responded that the CBA should allow any bus passengers with and without the vaccination because (i) the vaccination is underway on the voluntary basis, (ii) some bus passengers cannot take the vaccination due to his/her age limit and health conditions, which may cause the discrimination of the citizens if implemented. He also responded that the bus lane could be continuously studied however the implementation of pilot bus priority project(s) should be suspended due to the COVID-19 and could be discussed further when the bus operation is resumed.

Mr. Tomohiro Ono answered by adding that the vaccination campaign in Japan as well as for those who are involved in the Tokyo Olympic and Paralympic is also underway on the voluntary basis and any restriction for the use of the public transport is not applied in Japan. He also shared the information that there is no cluster case caused by the public transport reported in Japan and the result of the simulation tested by the Japanese supercomputer implies that the COVID-19 infection could be prevented when the windows of the public transport are open to allow enough ventilation of the inside air of the public transport together with other countermeasures such as wearing masks, refrain from talking, etc.

Mr. Kiminari Takahashi responded the first question raised by H.E. Koet Chhe by supporting to the restoration of the bus service and provided several reasons: (i) the CBA and JICA Expert Team already prepared for every COVID-19 countermeasure as presented by Mr. Ean Sokhim, (ii) the CBA and JICA Expert Team also prepared for various PR materials as part of the Mobility Management schemes to lift up the ridership and which contributes to reduce the financial burden born by the PPCA. He also proposed that JICA Expert Team and the CBA should continue to study the operation plan during the COVID-19 and its financial analysis to minimize the financial loss from the bus operation. He then supplemented that there are a number of revenue generation schemes which could cover part of the bus operation cost, including specialized bus service (airport shuttle service, company/factory shuttle service and school bus) as well as advertisement fees.

After discussion on the presentation and few minutes break, H.E. Koet Chhe invited Mr. Kiminari Takahashi to discuss matters arising: Pending tasks and discussion and agreement to the timing for termination or extension of the Project. Mr. Kiminari Takahashi then explained remaining activities and unaccomplished activities as well as achievement level of each activity when the PiBO Project ends by February 2022 without restoration of the bus operation. Mr. Yuki Fujita then emphasized that JICA would have to consider the termination of the PiBO Project as scheduled if the bus operation is not restored by September 2021.

H.E. Koet Chhe responded that in order to restore the bus operation by September 2021 as suggested by Mr. Fujita, the CBA, PPCA and JICA Expert Team will work together:

- Prepare the step-by-step plan to resume the bus operation in and from September 2021 adopting the 'New Normal' life and propose it to the high level government for the approval on the restoration of the bus operation.
- Prepare and implement the concrete countermeasures against COVID-19 infection and seek for the approval on these countermeasures by the Ministry of Health.
- Prepare the route and operation plan considering also the COVID-19 quarantine and treatment facilities with fewer bus services to test the preference of the bus service by passengers and users.
- Also, secure a sufficient number of bus fleets and services for essential needs and workers and set aside some budget and implement countermeasures to ensure the safety and security of the drivers and potential COVID-19 patients.
- Hold a technical meeting as necessary to follow up the actions listed above: (i) proposed COVID-19 countermeasures and its approval by the Ministry of Health and (ii) step-by-step operational plan starting from the small scale operation to full scale operation and preparing the request to the government for approval on bus resumption.

Mr. Yuki Fujita inquired the PPCA and CBA of their interests in additional tasks related to proposed enhanced fleet management: Procurement of bus maintenance tools as part of COVID-19 countermeasures and dispatch of the CBA mechanics to OJT training in Japan.

Mr. Ean Sokhim reported that the CBA has already submitted the proposal on the collaboration with JICA's e-learning Project under the NPIC (National Polytechnic Institute of Cambodia) for enhanced bus fleet and large vehicle maintenance capacity in the CBA and NPIC and that H.E. Governor appreciated and already approved the proposed collaboration and instructed the CBA to prepare the MOU with the NPIC if required. He also expressed his appreciation to the proposed dispatch of the CBA mechanics to OJT training in Japan which also contributes to enhanced and sustained bus fleet management in the CBA.

6. Closing Remarks

H.E. Koeut Chhe appreciated the continuous supports by JICA and expressed his commitments in successful implementation of the PiBO Project. H.E. Koeut Chhe urged during his closing remarks:

- The PPCA has clearly understood the next and proceeding steps to restore the bus operation scheduled by September 2021.
- The PPCA continues to be committed to tackling with the COVID-19 pandemic through various countermeasures.
- In line with this, the PPCA is committed first to providing the public transport services to the citizens and then to securing the transport service for essential needs affected by the COVID-19.
- The PPCA appreciates JICA and the Japanese buses which JICA supplied to PPCA which contributes to reducing the risks of COVID-19 infections by transporting international air passengers and essential needs including infected patients from the PCR test centers to the treatment places.

The meeting adjourned at 12:40.

7. Actions to be taken by PPCA, CBA and JICA Expert Team

The following actions proposed during the JCC meeting are confirmed to be taken by concerned agency(ies) at a prompt manner in order to restore the bus operation by September 2021 by the signers of the tripartite entities:

- CBA to prepare the step-by-step plan to resume the bus operation in and from September 2021 adopting the 'New Normal' life and PPCA to propose it to the high level government for the approval on the restoration of the bus operation.
- CBA with the assistance by JICA Expert Team to prepare and implement the concrete countermeasures against COVID-19 infection and seek for the approval on these countermeasures by the Ministry of Health.
- CBA together with JICA Expert Team to prepare the route and operation plan considering also the COVID-19 quarantine and treatment facilities with fewer bus services to test the preference of the bus service by passengers and users.
- CBA and PPCA to secure a sufficient number of bus fleets and services for essential needs and workers and set aside some budget and implement countermeasures to ensure the safety and security of the drivers and potential COVID-19 patients.
- PPCA to hold a technical meeting as necessary to follow up the actions listed above: (i) proposed COVID-19 countermeasures and its approval by the Ministry of Health and (ii)

step-by-step operational plan starting from the small scale operation to full scale operation and preparing the request to the government for approval on bus resumption.

ATTACHMENT 1

Attendees of the 4th JCC Meeting are listed below.

No.	Name	Sex	Position-Organization
1	H.E. Koeut Chhe	M	Deputy Governor, PPCA
2	Mr. Chou Kimtry	M	Deputy Director, DPWT Phnom Penh
3	Mr. Ean Sokhim	M	Governor, Phnom Penh City Bus Authority
4	Mr. Tomohiro Ono	M	Director, Infrastructure Management Department, JICA Headquarter
5	Mr. Yuki Fujita	M	Infrastructure Engineering Department and Infrastructure Management Department, JICA Headquarter
6	Ms. Miu Nakazono	F	Infrastructure Management Department, JICA Headquarter
7	Ms. Ai Miyahara	F	Deputy Chief Representative, JICA Cambodia Office
8	Ms. Pheng Pharinet	F	Program Officer, JICA Cambodia Office
9	Mr. Sor Chanvisal	M	Assistant to Deputy Governor, PPCA
10	Mr. Kun Chanpagna	M	Deputy Governor, CBA
11	Mr. Danh Darith	M	Chief of Finance Office, CBA
12	Mr. Mel Sarith	M	Chief of Technical Office, CBA
13	Mr. Lay Sokraksmeay	M	Chief of Inspection Office, CBA
14	Mr. Khly Norack	M	Chief of Administration, CBA
15	Mr. Orl Sokchea	M	Chief of Mechanic, CBA
16	Mr. Kiminari Takahashi	M	Chief Advisor, PIBO
17	Mr. Kov Monyrath	M	Deputy Chief Advisor, PIBO
18	Mr. Koji Uzawa	M	Bus Maintenance Expert, PIBO
19	Mr. Yuki Takada	M	Mobility Management Expert, PIBO

- | | | | |
|----|-----------------|---|---------------------------|
| 20 | Ms. Em Socheata | M | Project Coordinator, PIBO |
| 21 | Ms. Un Vanna | F | Project Secretary, PIBO |

5th JCC MEETING

**MINUTES OF MEETING
OF
5TH JOINT COORDINATION COMMITTEE MEETING
FOR
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION
IN
PHNOM PENH**

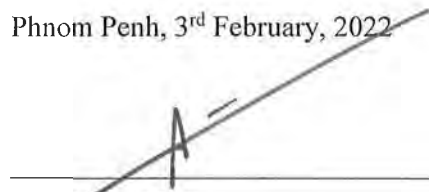
Agreed upon between

PHNOM PENH CAPITAL ADMINISTRATION


AND

JICA CAMBODIA OFFICE/JICA EXPERT TEAM

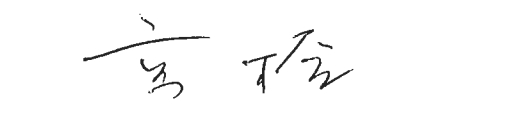
Phnom Penh, 3rd February, 2022



H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration



Ms. Ai Miyahara
Senior Representative,
JICA Cambodia Office



Mr. Kiminari Takahashi
Chief Advisor,
JICA Expert Team

1. Introduction

The Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a team of JICA Experts on 15th January 2017, to commence the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as “the PiBO”).

In the course of the PiBO, the JICA Expert Team and the counterpart agencies have been engaged in delivering five project outputs: (i) improvement of bus operation capacity, (ii) improvement of bus fleet maintenance capacity, (iii) training for bus driver, (iv) improvement of bus business management capacity and (v) improvement of public transport policy and planning capacity. As part of deliverables of the PiBO, the JICA Experts prepared Monitoring Sheets ver. 10, exploring the progress as well as achievement of the PiBO, and submitted the Monitoring Sheet ver.10 in the 5th JCC Meeting.

2. Opening Remarks

On behalf of the Phnom Penh Capital Administration (hereinafter referred to as “PPCA”), H.E. Koeut Chhe, chairperson of the 5th JCC Meeting, welcomed all participants in the meeting. H.E. Koeut Chhe thanked continuous supports made by JICA and made opening remarks, highlighting the achievement of restoration of City Bus operation starting from 2nd November 2021.

The 5th JCC Meeting started at 9:00 hours. Participants of the meeting are listed in the **Annex 1**.

3. Welcome Remarks

Ms. Ai Miyahara welcomed all participants in the meeting and made welcome remarks, thanking the PPCA and City Bus Authority (hereinafter referred to as “CBA”) for the commitment in restoration of City Bus operation started in November 2021. Ms. Miyahara raised a concern on the limited number of passenger and financial sustainability of the bus operation and emphasized the importance of bus priority measures and mobility management to attract the citizen to come back to use the City Bus. Ms. Miyahara also proposed to realize synergy effects derived from on-going MLIT initiative on promotion of Smart City and Smart Bus Shelter.

4. Presentation by Project Member

Mr. Ean Sokhim, Governor of CBA, made a presentation on the progress and achievement for the restoration of the bus operation, highlighting the following bullet points:

- Resumption of City Bus operation on 2nd November 2021
- Number of Passengers since bus operation resumed
- Intensive training of bus drivers, chief drivers and terminal commanders
- PR activities in relation with bus operation resumed
- Public perception on resumed bus operation
- Bus route information and bus stop facilities and Smart Bus Shelter Project
- Development of New Bus Terminal supported by PPCA

- Honorable visit of Japanese Ambassador to Bus Depot and EOJ's bus promotion video
- Challengers

Mr. Kiminari Takahashi, Chief Advisor of the JICA Expert Team, made a presentation on the Monitoring Sheet ver. 10, demonstrating the progress and achievement of the PiBO and highlighting that 19-month suspension of bus operation has significant adverse impacts on lowered ridership (70,000 Pax per day as the target), increased accident rate as well as lowered bus revenue/operation cost ratio, leaving PiBO far behind the project targets.

Mr. Takahashi continued to make a presentation on matters arising on (i) Remaining tasks towards project completion, (ii) Proposal on Overseas training, (iii) Proposal on Pilot bus priority signal, (iv) Towards full-scale operation of City Bus: Demand retrieved, followed by fare and subsidy policy and (v) Transformation of CBA to Public Administrative Enterprise.

5. Comments on the Presentation

After the presentation, H.E. Koeut Chhe, expressing his gratitude to achievements made by JICA, CBA and JICA Expert Team and asked participants to provide comments and inquiries related to the presentation.

Mr. Chou Kimtry, Deputy Director of DPWT, provided the following comments:

- Following the request made by JICA Expert Team, PPCA should inform EDC to understand if any planned power cut during implementation of the pilot project and recommend JICA Expert Team to plan the implementation schedule of pilot project, considering the planned power cut.
- PPCA should facilitate the restoration of OFC network if any cut of the network accidentally, especially caused by the on-going road/walkway improvement projects.
- JICA Expert Team and CBA should inform roadside building tenants/owners to properly park vehicles in the designated parking spaces to improve the traffic flow during implementation of the pilot project.
- JICA Expert Team should also consider to manage the para-transit operation, for instance, putting the priority on the bus to run along the main trunk roads and allowing para-transit to use only along small streets.

The Chairperson responded to Mr. Chou Kimtry's comments by clarifying two pilot projects: Bus Priority Signal initiated and financed by JICA and Bus Priority Lane financed by PPCA and provided his instruction:

- DPWT should draft the official announcement letter for PPCA to inform the public about the implementation of Pilot Bus Priority Signal.
- CBA should coordinate a meeting with Phnom Penh Traffic Police, Electricite du Cambodge

(EDC), and Khan Leaders along the pilot project site to inform the project outline of Pilot Bus Priority Signal and raise our requests to cooperate by not to manually control the traffic, not to cut the OFC network, and not to disconnect the GPS connections to the BOMS.

- PPCA should check to possibility to prepare the budget for implementation of pilot Bus Priority Lane in YF 2022/23 using the supplement budgets available for improvement of infrastructure for Asian SEA Game scheduled in 2023.

Mr. Kiminari Takahashi provided supplement comments to the Chairperson:

- The PiBO is currently working with DPWT to install OFC switches at 4 major intersections in order to improve the redundancy of the OFC network and of which the installation works would be completed by end February 2022. These switches would contribute to reducing the risks of cut of OFC network.
- The PiBO also used to work with DPWT to study and prepare the preliminary design of Bus Priority Lane and will continue with DPWT to develop the sample Design-Built contract documents for development of Bus Priority Lane, which could be fully utilized once the project is financed in 2023.

Mr. Tomohiro Ono, Director of JICA HQ, provided following inquiries to the CBA:

- Whether CBA is ready for full scale operation of City Bus
- How to win the passengers from motorcycle and tuk tuk which are main transport modes of bus passengers during suspension of City Bus operation

Mr. Ean Sokhim, Governor of CBA, answered to Mr. Ono's inquires:

- The CBA is ready for full scale operation of City Bus and has prepared for vehicle inspection/repair for all bus fleets and safety management training for all bus drivers and CBA staffs. The CBA only needs official approval for full operation by PPCA.
- As the bus and non-bus passenger interview survey implies, one of the reasons why the bus passengers do not come back to the City Bus is passengers' concerns on the risks of COVID-19 infection in using the City Bus. The CBA will continue to make efforts to disseminate the countermeasures against COVID-19 by educational PR videos, educating drivers, promotion of e-ticketing system, etc.

Mr. Kiminari Takahashi recapped the agenda and requested participants to discuss and obtain consensus to (i) implementation of pilot Bus Priority Signal and (ii) overseas training proposed to be organized in Thailand.

The Chairperson responded to Mr. Takahashi by answering below:

- By considering institutional structure and jurisdiction of public bus operation in neighboring countries as well as current travel restriction imposed by COVID-19, the Chairperson accepts

to organize overseas training in Thailand. The Chairperson requested JICA Expert Team to prepare the shorter and concise training program for management staff(s) to enable them, including the Chairperson himself, to attend the training.

- The Chairperson approves the implementation of pilot Bus Priority Signal and reminds DPWT and CBA to prepare the public announcement of the pilot project.
- The Chairperson also requested JICA Expert Team and CBA to develop a step-by-step operation plan towards the full scale operation of City Bus, by supplementing that there is a chance for full scale operation if there is no increase of on-going Omicron cases after Khmer New Year and that current fare structure would not be changed until the number of bus passengers are retrieved.
- The Chairperson also requested JICA Expert Team and CBA to prepare a preliminary study on reorganization of CBA to upgrade to the public enterprise and submit this study result to PPCA before going to overseas training. He also requested that the study should include organizational structure and their jurisdiction of both Bangkok and Nagoya.

Mr. Tomohiro Ono as his mission remarks emphasized over 5-year PiBO project would come to end by the end of August 2022 and requested all concerned authorities to work together under the PiBO and make maximum use of the project.

6. Closing Remarks

H.E. Koeut Chhe appreciated the continuous supports by JICA and expressed his commitments in successful implementation of the PiBO. H.E. Koeut Chhe urged during his closing remarks:

- The PiBO contributes a lot to improving the capacity of PPCA/CBA/DPWT for operation of the City Bus and which is proved by the evidence that the citizens in Phnom Penh do not call City Bus but call Japan Bus.
- The Chairperson requests JICA to consider to maintain the dispatchment of at least two experts after completion of the PiBO in order to sustain project activities and achievement made during the course of the project.

The meeting adjourned at 12:40.

7. Actions to be taken by PPCA, CBA and JICA Expert Team

The following actions proposed during the JCC meeting are confirmed to be taken by concerned agency(ies) at a prompt manner in order to realize the agreements made during the meeting:

- DPWT and CBA to make the public announcement of pilot Bus Priority Signal before full implementation of the pilot project scheduled in May and June 2022.
- JICA Expert Team and CBA to prepare the step-by-step plan towards full operation of City

Bus at earliest timing.

- JICA Expert Team and CBA to prepare the preliminary study report on reorganization of CBA before going to the overseas training scheduled in May 2022.
- JICA Expert Team to prepare the shorter and concise overseas training program at earliest timing.

ATTACHMENT 1

Attendees of the 5th JCC Meeting are listed below.

No.	Name	Sex	Position-Organization
1	H.E. Koeut Chhe	M	Deputy Governor, PPCA
2	Mr. Chou Kimtry	M	Deputy Director, DPWT Phnom Penh
3	Mr. Ean Sokhim	M	Governor, Phnom Penh City Bus Authority
4	Mr. Tomohiro Ono	M	Director, Infrastructure Management Department, JICA Headquarter
5	Mr. Yuki Fujita	M	Infrastructure Engineering Department and Infrastructure Management Department, JICA Headquarter
6	Ms. Miu Nakazono	F	Infrastructure Management Department, JICA Headquarter
7	Ms. Ai Miyahara	F	Senior Representative, JICA Cambodia Office
8	Mr. Hiroaki Kubota	M	Project Formulation Advisor, JICA Cambodia Office
9	Ms. Pheng Pharinet	F	Program Officer, JICA Cambodia Office
10	Mr. Sor Chanvisal	M	Assistant to Deputy Governor, PPCA
11	Mr. Kun Chanpagna	M	Deputy Governor, CBA
12	Mr. Danh Darith	M	Chief of Finance Office, CBA
13	Mr. Mel Sarith	M	Chief of Technical Office, CBA
14	Mr. Lay Sokraksmeay	M	Chief of Inspection Office, CBA
15	Mr. Khly Norack	M	Chief of Administration, CBA
16	Mr. Orl Sokchea	M	Chief of Mechanic, CBA
17	Mr. Kiminari Takahashi	M	Chief Advisor, PIBO
18	Mr. Kov Monyrath	M	Deputy Chief Advisor, PIBO
19	Mr. Koji Uzawa	M	Bus Maintenance Expert, PIBO

- | | | | |
|----|---------------------|---|---|
| 20 | Mr. Natsuki Shimegi | M | Business Management Expert, PIBO |
| 21 | Ms. Kayoko Miyao | F | Project Monitoring and Evaluation, PIBO |
| 22 | Mr. Piseth Srorn | M | Project Coordinator, PIBO |
| 23 | Ms. Un Vanna | F | Project Secretary, PIBO |

6th JCC MEETING

**MINUTES OF MEETING
OF
6TH JOINT COORDINATION COMMITTEE MEETING
FOR
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION
IN
PHNOM PENH**

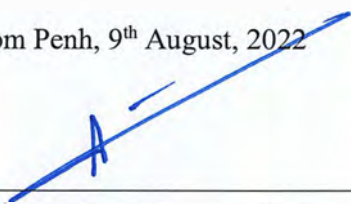
Agreed upon between

PHNOM PENH CAPITAL ADMINISTRATION

AND

JICA CAMBODIA OFFICE/JICA EXPERT TEAM

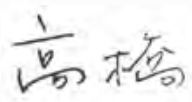
Phnom Penh, 9th August, 2022



H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration



Ms. Ai Miyahara
Senior Representative,
JICA Cambodia Office



Mr. Kiminari Takahashi
Chief Advisor,
JICA Expert Team

1. Introduction

The Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched a team of JICA Experts on 15th January 2017, to commence 5-year and 8-month project, namely, the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as “the PiBO”).

In the course of the PiBO, the JICA Expert Team and the counterpart agencies have been engaged in delivering five project outputs: (i) improvement of bus operation capacity, (ii) improvement of bus fleet maintenance capacity, (iii) training for bus driver, (iv) improvement of bus business management capacity and (v) improvement of public transport policy and planning capacity. As the final deliverables of the PiBO, the JICA Experts prepared the Project Completion Report, exploring the achievement of and lessons learnt from the PiBO, and submitted the report prior to the 6th JCC meeting.

2. Opening Remarks

On behalf of the Phnom Penh Capital Administration (hereinafter referred to as “PPCA”), H.E. Koeut Chhe, a chairperson of the 6th JCC Meeting, welcomed all participants in the meeting. H.E. Koeut Chhe thanked continuous supports made by JICA and JICA Experts and made opening remarks, highlighting the following achievements made under the PiBO and related instructions to concerned agencies for improvement of City Bus operation.

- The bus operation including construction of bus depot and bus information system by City Bus App has been improved under this technical assistance. As a result, the bus ridership after resumption of bus operation, reached to 6,000 pax per day.
- The operation of City Bus significantly contributed to behavior changes of citizens, reducing the traffic congestion, poverty reduction (providing available transport mode under the fuel price escalation), reducing traffic accidents.
- The local authorities should share their responsibilities to operate the City Bus, particularly using the bus stop/shelters in a proper manner, since their communities are the direct beneficiaries.
- The traffic police should provide priority measures to the City Bus, which attracts more passengers and hence reducing the accidents and casualties.

The 6th JCC Meeting started at 8:40 hours. Participants of the meeting are listed in the **Attachment 1**.

3. Welcome Remarks

Ms. Ai Miyahara welcomed all participants in the meeting and made welcome remarks, thanking the PPCA and City Bus Authority (hereinafter referred to as “CBA”) for the commitment in

restoration of City Bus operation started in November 2021. Ms. Miyahara emphasized the importance of continuous efforts being made by PPCA and CBA to work on improving public bus services after the Project ends, using the skills, experience and knowledge gained from the Project, as passenger numbers are currently below the target as well.

4. Presentation by CBA and Expert Team

Mr. Ean Sokhim, the Governor of CBA, made a presentation on the achievement made during the PiBO, highlighting the following bullet points:

- Establishment of CBA as competent bus operator
- Preparation of Veal Sbov bus terminal
- Upgrading CBA as customer-oriented service provider
- Improved local perception toward City Bus
- Transportation of passenger in Phnom Penh and to other Provinces during Khmer New Year & Pchum Ben
- Maximum use of ICT under private sector initiatives
- Strong ownership and commitment by PPCA/CBA
- Donor coordination
- Tackling with COVID-19

Mr. Kiminari Takahashi, Chief Advisor of the PiBO, made a presentation on the Project Completion Report, demonstrating the project outline, major achievement of project outcomes, and project evaluation. Mr. Takahashi continued to make a presentation on matters arising on the following bullet points:

- Proposed staged plan towards full-scale operation of City Bus
- Bus repair plan and required budget for full-scale operation
- Safety measurement for full-scale operation and training for reckless drivers
- Financial plan under full-scale operation and proposals on transformation of CBA to Public Administrative Enterprise
- Improved bus priority and mobility management

5. Comments on the Presentation

After these two presentations, H.E. Koeut Chhe, expressing his gratitude to achievements made by JICA, CBA and JICA Expert Team and asked participants to provide comments and inquiries related to the presentation.

Mr. Ou Thunsal, Deputy Director, Department of Urban Public Transport, MPWT, provided the following comments:

- MPWT has several policies and plans to work with PPCA and provincial administrations to improve the public transport.

- MPWT plans to establish City Bus Authority in Siem Reap.
- MPWT is seeking an opportunity to discuss on the improvement of suburban bus stop facilities and route extension with PPCA in September 2022.

The Chairperson responded to Mr. Ou Thunsal's comments by emphasizing:

- The initiative of MPWT on suburban route extension is very welcome, but MPWT should consider to sharing the increasing operation cost and deficit. So far, 17 million USD loss is borne by PPCA alone. The model of "Taxi Boat" must be avoided (initiated and developed by MPWT but operational cost paid by PPCA).

The Chairperson also provided comments on the actions proposed by the Expert Team:

- Budget for 5 km pilot section of bus priority lane may be possibly set aside for FY 2023 or 2024 when on-going COVID-19 and upcoming pandemic is settled.
- After opening of the new airport, it is necessary to extend the CBA bus route to transport airport passengers. Additionally, once the bridge to Arey Ksat is constructed and opened, a new bus route must be introduced across Kandal Province to reduce the private vehicular traffic to the heart of Phnom Penh. With these, PPCA expects new JICA's TA to consider in their scope of work.
- ADB TA and loan to pursue the next step of bus priority lane expansion is also under discussion. However, it may be challenging to get MEF approval.
- Adaptation of the stepwise bus route expansion proposed by JICA Expert Team is fully agreed by the Chairperson and PPCA will instruct CBA to prepare the necessary budget plan.

Mr. Kiminari Takahashi, Chief Advisor of Expert Team also supplemented to the Chairperson:

- The achievement of city bus operation in Phnom Penh is beyond the expectation, attained with the strong commitment and efforts made by PPCA and CBA.
- For the improvement in sustainability of bus transport business, cost reduction and revenue generation are inevitable. Later when the circumstance allows, fare and subsidy policy shall be addressed.
- The PiBO also has prepared and documented the establishment bill of CBA as Public Administrative Enterprise for PPCA to review and consider.
- Example of cross-subsidy (from parking revenue to BRT operation) in Vientiane is also a good example to enhance the sustainability of bus transport business. Given that Mr. Takahashi is also in charge of traffic management for the on-going JICA's Capacity Development Project for Traffic Control and Management, the parking management and cross subsidy to public transport will be further discussed in separate occasions.

The Chairperson also responded to Mr. Takahashi's comments by mentioning;

- Fare increase cannot be implemented during on-going international and regional crisis (COVID-19 pandemics, regional insecurity, and inflation and hike of fuel price caused by the war between Ukraine and Russia).
- The City Bus should at this moment contribute to serving the mobility of the citizen, especially vulnerable group. The Government of Cambodia is currently injecting 42 million USD per month to cash up the poor to meet their primary needs. The City Bus needs to first increase the ridership before raising the fare.
- Agreed with proposals to convert CBA to Public Administrative Enterprise which requires due support from MPWT and MEF. Through establishing Public Administrative Enterprise, new revenue generation schemes would be adopted and new competitive service (i.e., intercity bus) be realized. By 2023, the draft sub-decree on Public Admin Enterprise needs to be completed.
- Despite fuel price escalation, the concern over pandemic (now Monkey Pox) also contributed to stagnant of slow increase in bus ridership.

Ms. Ai Miyahara, Senior Representative of JICA Cambodia Office made following inquiries:

- Would PPCA be able to achieve cost reduction and revenue generation schemes proposed by the Expert Team?

The Chairperson answered to Ms. Miyahara's inquiry:

- As for the cost reduction of fuel charge by changing the procurement process, it would be a bit difficult at this moment because the fuel price remains high in the market. However, for the improved driving skills, PPCA and CBA will implement the training for drivers. PPCA plans to introduce a bus driver contract which defines the responsibility borne by driver and CBA in case of any incident and misconduct.

6. Mission Remarks

Mr. Keisuke Tanaka, Senior Deputy Director, JICA Headquarter, provided mission remarks by highlighting a number of achievements made in the course of the PiBO, including performance monitoring by Bus Operation Ratio, establishment of Maintenance Division and training of female drivers. Mr. Tanaka also appreciated the commitment and contributions for development and operation of bus service made by PPCA and CBA. Mr. Tanaka then raised the issues in financial sustainability of bus transport business should be addressed through continuous efforts by PPCA and CBA. Mr. Tanaka also highly valued the use of ICT applied to the continuous implementation of the PiBO during the COVID-19 pandemic. Mr. Tanaka concluded his mission remarks, highlighting the contributions made by PPCA and CBA.

7. Closing Remarks

H.E. Koeut Chhe appreciated the continuous supports by JICA and expressed his commitments in successful delivery of the PiBO. H.E. Koeut Chhe urged during his closing remarks:

- PPCA accepted all the recommendations made by the JICA Expert Team and continue to improve public transport service to the citizens in Phnom Penh.
- PPCA strongly encouraged the recruitment of female drivers and as many female employees as possible in all other positions at CBA.
- PPCA, under the leadership of H.E. Khuong Sreng, Governor of Phnom Penh Capital City, commits to ensuring the sustainability of public bus service in Phnom Penh.

The meeting adjourned at 12:40.

ATTACHMENT 1

Attendees of the 6th JCC Meeting are listed below.

Cambodian side:

No.	Name	Sex	Position-Organization
1	H.E. Koeut Chhe	M	Deputy Governor, PPCA
2	H.E Hout Hay	M	Deputy Governor, PPCA
3	Chou Kimtry	M	Deputy Director, DPWT
4	Ou Thunsal	M	Deputy Director, MPWT
5	Ean Sokhim	M	Governor, CBA
6	Kong Rathanakvatey	F	Assistant, H.E
7	Sar Channvisal	M	Assistant, H.E
8	Kun Chanphagha	M	Deputy Governor, CBA
9	Danh Darith	M	Chief Accounting, CBA
10	Kly Norack	M	Chief Admin., CBA
11	Mil Sarith	M	Chief Technical, CBA
12	Lay Sokreaksmey	M	Chief Inspection, CBA
13	Ing Dara	M	Officer, MPWT
14	Dith Nimol	M	Officer Investment, PPCA
15	Mao Kolmardi	M	Deputy Khan Boeung Keng Kang
16	San San Saranvuth	M	Deputy Governor of Por Sen Chey District
17	Seng Kun	M	Deputy Governor of Kambol District
18	Dy Rathkhemarun	M	Deputy Governor of Mean Chey District
19	Pean Veasna	M	Deputy Governor of 7 Makara District
20	Nop Pha	M	Deputy Governor of Chbar Ampov District
21	Ny Chanseang	M	Deputy Governor of Dangkor District
22	Yos Yuthy	M	Deputy Governor of Chamkarmorn District
23	Prach Saiha	M	Deputy Governor of Russeykeo District
24	Dy Leak	M	Deputy Chief of Toul Kork District
25	Hem Rithy	M	Deputy Chief of Preak Phnov District
26	Ly Visal	M	Representative of Traffic Police of Toul Kork District

Japanese side:

1	Keisuke Tanaka	M	Senior Deputy Director, JICA Headquarter
2	Shintaro Ogiwara	M	Deputy Assistant Director, JICA Headquarter
3	Ai Miyahara	F	Senior Representative, JICA Cambodia Office

4	Mariko Iwai	F	Project Formulation Advisor, JICA Cambodia Office
5	Pheng Pharinet	F	Program Officer, JICA Cambodia Office
6	Kong Viseth	M	Program Officer, JICA Cambodia Office
7	Kiminari Takahashi	M	Chief Advisor, PIBO
8	Kayoko Miyao	F	Monitoring and Evaluation, PIBO
9	Minoru Murata	M	Bus Driver Training, PIBO
10	Masaya Nakano	M	Mobility Management (2), PIBO
11	Dr. Hong Sungjoon	M	Bus Facility Planning (3), PIBO
12	Koji Uzawa	M	Bus Maintenance, PIBO
13	Shuichi Yashiro	M	Traffic Control and Safety, PIBO
14	Natsuki Shimegi	M	Business Management, PIBO
15	Takayoshi Ito	M	IT System/Data Management, PIBO
16	Long Borith	M	Project Coordinator, PIBO
17	Un Vanna	F	Project Secretary, PIBO
18	Em Socheata	F	Project Assistant, PIBO
19	Srom Piseth	M	Project Coordinator, PIBO

Donors:

1	Dr. Kov Monyrath	M	Senior Project Officer, ADB
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**Minute of Meeting
(Extension of Project Period 1)**

**MINUTES OF MEETINGS
BETWEEN
PHNOM PENH CAPITAL ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY
FOR
AMENDMENT OF THE RECORD OF DISCUSSIONS
ON
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION IN PHNOM PENH**

Phnom Penh Capital Administration (hereinafter referred to as "PPCA") and The Japan International Cooperation Agency (hereinafter referred to as "JICA") hereby agree that the Record of Discussions on the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as "the Project") signed on October 12th, 2016 is amended as follows;

1. Term of Cooperation

Before	Amended Version
Annex 1. Record of Discussions Appendix 1. Project Description II. Outline of the Project 4. Duration <u>Four (4) years</u> from the arrival of the first expert	Annex 1. Record of Discussions Appendix 1. Project Description II. Outline of the Project 4. Duration <u>Five (5) years and two (2) months</u> from the arrival of the first expert
Annex 2. Project Design Matrix (PDM) Project Period: January 2017 to December 2020 (4 years)	Annex 2. Project Design Matrix (PDM) Project Period: January 2017 to <u>February 2022</u> (5 years and 2 months)
Reason: The Phnom Penh City Bus Authority (hereinafter referred to as "CBA") has suspended the regular bus service since 26 th March 2020 as part of preventive measures against the COVID-19 pandemic taken by the PPCA. During the suspension period, the CBA has been providing a limited number of chartered bus service for essential workers and needs (such as doctors/nurses and international air passengers). In order to prevent bus drivers and passengers from the infection of the COVID-19, the CBA has been actively involved in providing preventive measures, such as organization of COVID-19 Prevention Training, installation of bus protection shields as well as teaching posters, and development of the code of conducts for drivers during COVID-19 pandemic, etc. The PPCA and CBA are currently preparing to restore the regular bus service to be resumed in October 2020. Meanwhile, JICA Expert Team has left Phnom Penh and will not be able to be mobilized until April 2021. Accordingly, PPCA and JICA confirmed it is essential to extend the project duration for additional fourteen (14) months to catch up and improve the operational capacity for	

the regular bus service to be gained during the same suspension period and to achieve the pre-set project goal and outcomes.

*According to the above amendment, PDM and PO are modified as Annex 2.

This amendment becomes effective as of October 20, 2020.

Annex 1 : Record of Discussions (signed on October 12th, 2016)

Annex 2 : PDM ver 1.2 and PO ver 7.1


Annex 3 : Minutes of Meeting (signed on August 11th, 2020)

Annex 4 : Minutes of Meeting (signed on August 25th, 2020)




Mr. Yuichi Sugano
Chief Representative
JICA Cambodia Office

Phnom Penh, October 20, 2020 *KC*



H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration



Mr. Kiminari Takahashi
Chief Advisor
JICA Expert Team

RECORD OF DISCUSSIONS
ON
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS
OPERATION
IN
PHNOM PENH
AGREED UPON BETWEEN
PHNOM PENH CAPITAL ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Phnom Penh, October 12, 2016 *KL*

	
	
Itsu ADACHI Chief Representative JICA Cambodia Office Japan International Cooperation Agency Japan	H.E. Sim Meatevong Governor Phnom Penh Capital Administration Cambodia

KL

In response to the official request of the Government of the Kingdom of Cambodia (hereinafter referred to as "GOC") to the Government of Japan (hereinafter referred to as "GOJ"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Phnom Penh Capital Administration, Department of Public Works and Transport of Phnom Penh Capital Administration, City Bus Authority (hereinafter referred to as "PPCA", "DPWT/PPCA" and "CBA" respectively) to develop a detailed plan of the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as "the Project").

Both JICA and the Kingdom of Cambodia sides (hereinafter referred to as "both sides") agreed the details of the Project and the main points discussed as described in the Appendix 1 and the Appendix 2 respectively.

Both sides also agreed that PPCA, DPWT/PPCA and CBA, the counterparts to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Kingdom of Cambodia (hereinafter referred to as "Cambodia").

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on June 17th 2003 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on May 6th 2016 between GOJ and GOC.

Appendix 1: Project Description

Appendix 2: Main Points Discussed

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PROJECT DESCRIPTION**I. BACKGROUND**

Phnom Penh is the capital and the largest city of Cambodia. Recently the registered number of the cars has increased continuously together with rapid urbanization, population increase and vitalization of economic activities. These situations brought about heavy traffic congestion and degradation of urban environment in Phnom Penh. At present, mobility in Phnom Penh is mainly dependent on motorcycles. It was reported that around 80 % of the total traffic along urban streets was dominated by motorcycles (JETRO, 2008) and about 68 % of road accident fatalities caused by motorcycles (RCVIS, 2012). It is expected to continue the further expansion of the registered number of the cars due to the increase of population and economic activities. In addition, the increase of road accident fatalities has been growing problem in Phnom Penh. Therefore the drastic policy formulation of transport improvement and the implementation have been required.

In response to the official request of Cambodia, JICA implemented "the Project for Comprehensive Urban Transport Plan in Phnom Penh City (PPUTMP)" from 2011 to 2014, which primarily involved in reviewing the existing transport master plan (2011 M/P) to formulate new comprehensive urban transport master plan for 2035 (2014 M/P). In the 2014 M/P, the new road map for the development of public transport system, road network and traffic management in Phnom Penh Capital City (PPCC) were formulated based on the estimate of future population (around 287 million, 2035). Also introduction of public transport system was considered as the most priority project to alleviate traffic congestion in PPCC because there was no proper mass public transport system. Therefore, early year 2014, JICA conducted one month City Bus Operation Experiment in Phnom Penh.

Following the experiment, PPCA established CBA and has been trying to continue the full city bus operation by themselves, and they purchased more used bus fleets at their own expense to run 3 bus routes. Furthermore, PPCA is also planning to expand the bus routes to 10 lines in the city for the development of safety and convenient public bus routes that contribute to relieve traffic congestion.

To address these issues, JICA is conducting "the Preparatory Survey for the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh" to consider the provision of bus fleets by Japanese Grant aid for expansion of bus routes. However, organization structure of CBA is fragile and their service level of bus operation such as bus route and headway is limited because CBA was established only 2 years ago. The improvement of bus operation management capacity is necessary to secure proper operation and maintenance of buses to be procured by Japanese Grant aid. Therefore, GOC requested GOJ to implement the technical assistance "The Project for Improvement of Public Bus Operation in Phnom Penh" in line with Grant aid.

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II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the Plan of Operation (Annex 2).

1. Input

(1) Input by JICA

(a) Dispatch of Experts

JICA will provide services of experts in the following categories and fields of expertise:

- Chief Advisor/Public Transport Policy
- Bus Operation Planning
- Bus Vehicle Maintenance
- Bus Driver Training
- Business Management
- Traffic Control and Safety
- Bus Facility Planning
- Information and Communication Technology
- Mobility Management
- Monitoring and Evaluation
- Others, as needed

(b) Training

JICA will receive the Cambodian personnel concerned with the Project for technical training in Japan or third countries as needed.

(c) Machinery and Equipment

JICA will provide machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed below:

- Information System on Bus Location
- Alcohol Detector

In case of importation, the machinery, equipment and other materials under II-1 (1) (c) above will become the property of the GOC upon being delivered C.I.F. (cost, insurance and freight) to the Cambodia authorities concerned at the ports and/or airports of disembarkation.

(2) Input by Cambodia side

Cambodia side will take necessary measures to provide at its own expense:

- (a) Services of Cambodia's counterpart personnel and administrative personnel as referred to in II-2;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;

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- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project;
- (h) Expenses necessary for transportation within Cambodia of the equipment referred to in II-1 (1) as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Cambodia from Japan in connection with the implementation of the Project

2. Implementation Structure

The project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

(1) Cambodia side

(a) Project Director

Deputy Governor, Phnom Penh Capital Administration will bear overall responsibility for administration and implementation of the Project.

(b) Deputy Project Director

Director, Department of Public Works and Transport of Phnom Penh Capital Administration will assist Project Director in administration and implementation of the Project.

(c) Project Manager

Governor, City Bus Authority will be responsible for managerial and technical matters of the Project.

(d) Counterpart Personnel

- 1) Phnom Penh Capital Administration
- 2) Department of Public Works and Transport of Phnom Penh Capital Administration
- 3) CBA

(3) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to PPCA, DPWT/PPCA and CBA on any matters pertaining to the implementation of the Project.

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will review the progress, revise the overall plan when necessary, approve an annual work plan, conduct evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of


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proposed members of JCC is shown in the Annex 4.

3. Project Site(s) and Beneficiaries

Project sites: Project activities will be implemented at PPCA at the central level and mainly conducted at operational level at DPWT/PPCA and CBA in Phnom Penh.

Beneficiaries: (Direct) PPCA, DPWT/PPCA and CBA, (Indirect) People using public transportation in Phnom Penh

4. Duration

Four (4) years from the arrival of the first expert.

5. Reports

Cambodia side and JICA experts will jointly prepare the following reports in English.

- (1) Monitoring Sheet on semi-annual basis until the Project completion
- (2) Project Completion Report at the time of Project completion

6. Environmental and Social Considerations

- (1) Cambodia side will abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF CAMBODIA SIDE


1. Cambodia side will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Cambodian national as a result of Japanese technical cooperation contributes to the economic and social development of Cambodia, and that the knowledge and experience acquired by the personnel of Cambodia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the JICA experts referred to in II-1 above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Cambodia.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement of Technical Cooperation signed on June 17th 2003 between the Government of Japan and the Government of Kingdom of Cambodia.

IV. MONITORING AND EVALUATION

JICA and Cambodia side will jointly and regularly monitor the progress of the


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Project through the Monitoring Sheets based on the Project Design Matrix (PDM) and Plan of Operation (PO). The Monitoring Sheets will be reviewed every six (6) months.

Also, Project Completion Report will be drawn up one (1) month before the termination of the Project.

JICA will conduct the following evaluations and surveys to verify sustainability and impact of the Project and draw lessons. Cambodia side is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, Cambodia side will take appropriate measures to make the Project widely known to the people of Cambodia.

VI. Misconduct

If JICA receives information related to suspected corrupt or fraudulent practices in the implementation of the Project, Cambodia side and relevant organizations will provide JICA with such information as JICA may reasonably request, including information related to any concerned official of the government and/or public organizations of Cambodia.

Cambodia side and relevant organizations will not, unfairly or unfavorably treat the person and/or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project.

VII. MUTUAL CONSULTATION

JICA and Cambodia side will consult each other whenever any major issues arise in the course of Project implementation.

VIII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and Cambodia side. However, PO may be amended in the Monitoring Sheets.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation
- Annex 3 Project Organization Chart
- Annex 4 A List of Proposed Members of Joint Coordinating Committee/
Steering Committee

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Annex 1: Project Design Matrix (PDM)

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to December 2020 (4 years)

Project Area: Phnom Penh, Cambodia


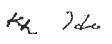
Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by public transport is increased by ### % in Phnom Penh	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • CBA keeps bus operation on schedule • Bus vehicle is maintained periodically • Attitude of the drivers and conductors towards the bus users is improved • The number of traffic accidents by bus is decreased • Financial health of CBA is improved • Traffic regulations are introduced on the bus operation 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Interview • Accident report • Profitability • Decision/Degree 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy • People's behaviors on public transport will be changed.
Outputs			
1. Bus operation capacity of CBA is improved	1.1 Level of skills and knowledge on bus operation of CBA is Improved 1.2 Bus operation manual is developed 1.3 Bus operation system is established 1.4 Bus operation is reviewed based on data 1.5 Basic plan of reliable and safety operation is formulated 1.6 Reliable and safety operation is improved 1.7 All the activities in the Action Plan are completed	<ul style="list-style-type: none"> • Training evaluation report • Manual • System • New bus operation plan • Training report • Evaluation report on the operation • Progress report 	• CBA is not privatized
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	2.1 Bus vehicle maintenance manual is developed 2.2 CBA's proficiency in the bus vehicle maintenance technology is improved 2.3 Reliability of the maintenance work is improved, and the number of breakdown is decreased	<ul style="list-style-type: none"> • Manual • Skill test • Inspection report 	
3. Training system of bus drivers and conductors, drivers management system for safe driving, and labor management system are established in CBA	3.1 Bus driver training manual is developed 3.2 Conductor work manual is developed 3.3 ## trainers have completed the driver training 3.4 At least ##% of drivers have passed training 3.5 ## trainers have completed the conductor training 3.6 At least ## % of conductors have passed training 3.7 Performance evaluation of the drivers and conductors is conducted	<ul style="list-style-type: none"> • Manual • Manual • Result of skill test • Training report • Result of skill test • Training report • Evaluation report 	
4. CBA's business management capacity is improved	4.1 Financial statements are prepared 4.2 Ticket management manual is developed 4.3 Operation cost and passenger database are built 4.4 Potential needs in bus operation are assessed 4.5 Annual business plan is formulated and reflects on budget plan 4.6 Report of the new policies on the bus fare and subsidy is prepared 4.7 Road map and technological requirement for introducing smart card system for fare collection are prepared	<ul style="list-style-type: none"> • Financial statements • Manual • CBA account document/ database • Research report • Annual business plan • Study report • Roadmap, study report 	
5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved	5.1 Level of skills and knowledge on the traffic control and management is improved 5.2 Report of the traffic management and safety measures is prepared 5.3 Para-transit improvement plan on the bus operation routes is formulated 5.4 Evaluation of the pilot projects and social experiments is conducted 5.5 Technical design documents for the bus related facilities are prepared 5.6 Technical examination report for bus information and operation management system is prepared 5.7 At least ## participants of mobility management activities come to take public transport	<ul style="list-style-type: none"> • Training text • Study report • Improvement plan • Pilot project evaluation report • Technical design document • Technical report for the system • Evaluation report on mobility management activities 	
Activities		Input	Pre-Condition

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<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system with GPS</p> <p>1.4 To analyze the bus operation data to review the existing operation plan</p> <p>1.5 To formulate education and training plan for reliable and safety operation (examination of necessary measures)</p> <p>1.6 To implement OJT on the reliable and safely operation</p> <p>1.7 To monitor and manage the implementation of the Action Plan developed under "Preparatory Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"</p> <p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance technologies and OJT for practice</p> <p>2.3 To monitor and manage inspection and maintenance works</p> <p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual (driving technology including theory and practice)</p> <p>3.2 To develop work manual for drivers and conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the monitoring system for the drivers and conductors by camera installed inside buses and drive-recorders etc., and implement OJT for practice</p> <p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To develop manual for existing fare and ticket management</p> <p>4.3 To manage operation cost/expenses and passenger data</p> <p>4.4 To implement market research in bus operation area</p> <p>4.5 To formulate an annual business plan including budget and accounting management</p> <p>4.6 To review and examine the bus fare system and subsidy policy</p> <p>4.7 To provide technical support on introduction of smart card system for fare collection based on Japanese experience</p> <p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To implement OJT on the technology and practice for design and planning of the bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and operation management system</p> <p>5.7 To implement training for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>	<p>input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Public transport policy - Bus operation planning - Bus vehicle maintenance - Bus driver training - Business management - Traffic control and safety - Bus facility planning - Information and communication technology - Mobility management - Monitoring and evaluation <p><u>Training in Japan and developing countries</u></p> <p><u>equipment</u></p> <ul style="list-style-type: none"> - Information system on bus location - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p> <p>Pre-condition</p> <ul style="list-style-type: none"> · CBA continues to exist for certain years
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Annex 2: Tentative Plan of Operation

Version 0.0

Dated 23 June, 2016

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

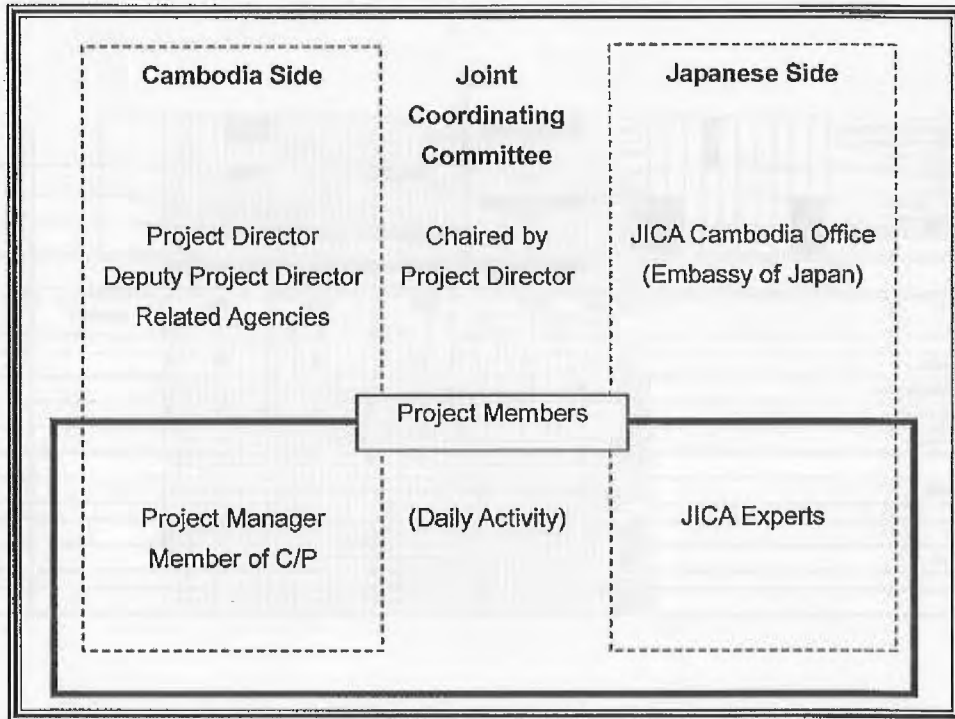
		Year					Remarks	Monitoring		
		2016	2017	2018	2019	2020		Issue	Solution	
Inputs										
Expert										
Public Transport Policy	Plan									
Public Transport Policy	Actual									
Bus Operation Planning	Plan									
Bus Operation Planning	Actual									
Bus Vehicle Maintenance	Plan									
Bus Vehicle Maintenance	Actual									
Bus Driver Training	Plan									
Bus Driver Training	Actual									
Business Management	Plan									
Business Management	Actual									
Traffic Control and Safety	Plan									
Traffic Control and Safety	Actual									
Bus Facility Planning	Plan									
Bus Facility Planning	Actual									
Information and Communication Technology	Plan									
Information and Communication Technology	Actual									
Mobility Management	Plan									
Mobility Management	Actual									
Monitoring and Evaluation	Plan									
Monitoring and Evaluation	Actual									
Equipment										
Information System on Bus Location	Plan									
Information System on Bus Location	Actual									
Alcohol detector	Plan									
Alcohol detector	Actual									
Training (Japan / Third country)										
Activities							Responsible Organization		Achievements	Issue & Countermeasures
Sub-Activities							Japan	GOC		
Output 1: Improvement of Bus Operation Capacity of CBA										
1.1 To implement training course for Bus Operation	Plan									
1.1 To implement training course for Bus Operation	Actual									
1.2 To develop Bus Operation Manual and implement On-the-Job Training (OJT) for practice	Plan									
1.2 To develop Bus Operation Manual and implement On-the-Job Training (OJT) for practice	Actual									
1.3 To establish Bus Operation System with GPS	Plan									
1.3 To establish Bus Operation System with GPS	Actual									
1.4 To analysis of the Bus Operation Data to review the existing operation	Plan									
1.4 To analysis of the Bus Operation Data to review the existing operation	Actual									
1.5 To establish Education and Training Plan for the Reliable and Safety Operation (examination of the necessary measures)	Plan									
1.5 To establish Education and Training Plan for the Reliable and Safety Operation (examination of the necessary measures)	Actual									
1.6 To implement OJT on the Reliable and Safety Operation	Plan									
1.6 To implement OJT on the Reliable and Safety Operation	Actual									
1.7 To monitor and manage the progress of action plan developed in "Preliminary Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"	Plan									
1.7 To monitor and manage the progress of action plan developed in "Preliminary Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"	Actual									

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Annex 3: Project Organization Chart

The Project will be implemented by Cambodia side in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:

Joint Implementation Structure of the Project



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Annex 4: Proposed Members of Joint Coordinating Committee (JCC)

The Proposed chairperson and the members of the JCC will be as follows:

- 1) Chairperson
 - Project Director
- 2) Members from the Cambodia Side
 - Deputy Project Director
 - Project Manager
 - Representative from Phnom Penh Capital Administration
 - Representative from Department of Public Works and Transport of Phnom Penh Capital Administration
 - Representative from City Bus Authority
 - Representative from Ministry of Economy and Finance
 - Personnel concerned to be decided by Cambodia Side
- 3) Members from the Japanese Side
 - Japanese Experts
 - Chief Representative, JICA Cambodia Office
 - Personnel concerned to be decided by the Japanese Side
- 4) Others
 - Officials of the Embassy of Japan may attend the meeting as observers.
 - Persons who are invited by the Chairperson may attend the meeting as observers.

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MAIN POINTS DISCUSSED

(j) Project Design Matrix (PDM) and Plan of Operation (PO)

Both sides agreed on the tentative PDM (Annex I) and PO (Annex II). The PDM and PO will be used as a management tool of the Project, and are to be flexibly revised according to the progress and the achievement of the Project, upon mutual agreement between Cambodia side and JICA by signing a Minutes of Meetings, according to the R/D.

(ii) Setting of numerical targets for Objectively Verifiable Indicators in PDM

Both sides agreed that the numerical targets for Objectively Verifiable Indicators in PDM would be set based on the result of baseline survey.

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Annex 2: Project Design Matrix (PDM) Ver_1.2

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to February 2022. (5 years and 2 months)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹¹ in Phnom Penh by 2023	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2020. • Average operation speed maintained at 15km/h in 2020. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy
Outputs			
1. Bus operation capacity of CBA is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities.
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	<ul style="list-style-type: none"> • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. 	<ul style="list-style-type: none"> • Maintenance Manual • Training evaluation report • Inspection report 	
3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA	<ul style="list-style-type: none"> • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have completed the conductor training and passed training • Safety management system is developed 	<ul style="list-style-type: none"> • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report 	
4. CBA's business management capacity is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)⁶ is improved to trainer's level • Financial statements are prepared • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed 	<ul style="list-style-type: none"> • Training evaluation report • Financial statements • Manual • Study report • Business plan • Agreed policy • Ticketing system 	
5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)⁷ is improved to trainer's level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed • Bus information and location system is developed 	<ul style="list-style-type: none"> • Training evaluation report • Improvement strategy/plan • Pilot project and mobility management evaluation report • Inventory of bus related facilities • Bus information and location system 	

Activities	Input	Pre-Condition
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system and develop the operation plan</p> <p>1.4 To analyze the bus operation data and improve the operation plan</p> <p>1.5 To develop bus safety operation guideline and implement OJT for practice</p> <p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice</p> <p>2.3 To monitor and evaluate inspection and maintenance works</p> <p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual</p> <p>3.2 To develop work manual for conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice</p> <p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To collect and analyze operation cost/expenses and passenger data</p> <p>4.3 To implement market research in bus operation area</p> <p>4.4 To formulate a business plan including budget and accounting management</p> <p>4.5 To review and examine the bus fare system and subsidy policy</p> <p>4.6 To provide technical support for introduction of cashless ticketing system for fare collection</p> <p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and location system</p> <p>5.7 To implement workshops for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Chief Advisor/ Public Transport Policy - Deputy Chief Advisor/ Public Transport Policy (2) - Bus Operation Planning - Bus Vehicle Maintenance - Bus Driver Training - Business Management - Traffic Control and Safety - Bus Facility Planning - IT System/Data Management - Mobility Management - Stakeholder Management - Monitoring and Evaluation - Bus Operator Advisory Group - Preparatory Survey Review (Team Leader) - Preparatory Survey Review (Bus Specification and Equipment) - Preparatory Survey Review (Procurement Plan) <p><u>Training in Japan and third countries</u></p> <p><u>Equipment</u></p> <ul style="list-style-type: none"> - Bus location system - Bus safety management system - Passenger monitoring system - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p>< Cambodia side ></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p>

Note 1: Under the assumption that 180 buses operate with occupancy rate at 50% of seat capacity on 10 PPCA/CBA's proposed bus lines.

Note 2: Deputy Governor of CBA, Chief of Technical Office and one (1) selected senior staff of Technical Office.

Note 3: Heads of Routine Inspection Group, Break Maintenance Group, Crutch Maintenance Group, Tire Maintenance Group, Painting and Body Works Group

Note 4: Two (2) Chiefs of Driver Group per route (20 chiefs for 10 routes)

Note 5: Two (2) Chiefs of Conductor Group per route (20 chiefs for 10 routes)

Note 6: Deputy Governor of CBA, Chief of Accounting Office and one (1) selected senior staff of Accounting Office of CBA

Note 7: One (1) selected Head/Chief of CBA (Technical Office), PPCA (Department of Urban Management) and DPWT (Division of Road Transport)

The Project for Improvement of Public Bus Operation in Phnom Penh (PIBO)			
Report on			
<u>Bus Vehicle Maintenance Expert</u>			
<u>Location</u>	<u>Written and Checking</u>	<u>Period of Inspection</u>	<u>Time</u>
CBA	Writer by: Mr. THLANG Narith Inspect by: Dr. KOV Monyrath	11 th August, 2020	14:47
<u>Attendees:</u>			
<ol style="list-style-type: none"> 1. Mr. Ean Sokhim (Governor of CBA) 2. Kon Chan Panha (Vice Governor of CBA) 3. Danh Darith 4. Mel Sarith 5. Ol Sochea 6. Sao Sovannary 7. Pay Neakhatya 8. Ke Sorim 9. Thou Sambath 			
<u>PIBO Team</u>			
<ol style="list-style-type: none"> 1. Mr. Kiminary Takahashi Team Leader of PIBO project 2. Dr. Kov Monyrath Deputy Team Leader of PIBO project 3. Mr. Uzawa Koji PIBO-member 4. Mr. Minoru Murata PIBO-member 5. Ms. Un Vanna Project Secretary 6. Ms. Em Socheata Project Assistant 7. Mr. Thlang Narith Project Coordinator 			

Agenda:

- 1) Budget for bus lubrication changing
- 2) Officer for the spare part management
- 3) Additional information on Mobility Management activities
- 4) Suggestion the bus that have the preventive measure for COVID-19 in order to transport the international passengers from Phnom Penh airport (at the end of August/or beginning of September).

Main points discussed and Agreed upon:**1) Budget for bus lubrication changing**

Mr. Ean Sokhim, CBA's Governor, basically agreed with the budget for bus



The Project for Improvement of Public Bus Operation in Phnom Penh			
Report on			
<u>Oyika Shared e-Bike Proposal</u>			
<u>Location</u>	<u>Written and Checking</u>	<u>DATE of Inspection</u>	<u>Time</u>
PPCA	Written: Ms. Em Socheata	25 Aug, 2020	09:00am
<p><u>Attendees:</u></p> <ol style="list-style-type: none"> 1. H.E. Koeut Chhe (Vice Governor PPCA) 2. Mr. Visal (Assistant Vice Governor) 3. Mr. Ean Sokhim (Governor Phnom Penh City Bus) 4. Mr. Mel Sarith (Chief of Technical office) 5. Ms. Sophom Sreynich (GM at Oyika) <p>PIBO Team</p> <ol style="list-style-type: none"> 1. Mr. Kiminari Takahashi Team Leader 2. Mr. Kov Monyroth Deputy Team Leader 3. Ms. Un Vanna, Project Secretary 4. Ms. Em Socheata Project Assistant 5. Mr. Thlang Narith Project Coordinator 			

Comments from H.E Koeut Chhe

1. H.E. Koeut Chhe will report this Shared e-Bike (Go2) to H.E Governor to get the approval.
2. H.E. pointed out necessity to do the public relation for Go2 by social media.
3. H.E. suggested not to cooperate with NGOs if they have not registered with the Ministry of Interior, because some NGOs are politically motivated. And Oyika's cooperation with PPCA is enough.
4. H.E. allows solar panels to place on the roof of bus shelter with battery chargers and battery cabinet for the motorbike must put at the side of bus shelter, so we can save the cable and the beauty of the bus shelter and the city. H.E. added that we should design the curb side slope for the motorcycle can go to park easily.
5. For stolen motorcycle, H.E. suggested Oyika to note on each motorcycle "Selling or buying this motorcycle is illegal" if someone buy and sell is a violation of the law.
6. H.E. suggested Oyika should write the advantage of using this motorcycle such as:
 - using this motorcycle is cheaper than the moto which use fuel.
 - reduce the environment pollution
 - safe (40km/h)

7. To proceed this service smoothly, H.E. suggested JICA Expert Team, CBA and Oyika should draft MoU. This MoU should be sign by CBA and Oyika with approval from H.E Governor.

AOB

Both CBA and JICA Expert Team raised and shared a concern of the suspension of the project activities during suspension of City Bus operation with H.E. Deputy Governor and requested to extend the project duration until the end of 2021. H.E. Deputy Governor fully understood the necessity of extension of the project duration and additional tasks for improvement of operation and management capacity of the CBA during post COVID-19 to achieve the project outcomes and goal and requested CBA and JICA Expert Team to draft the minutes of the meetings to make the project extension official.

Photo



**Minute of Meeting
(Extension of Project Period 2)**

**MINUTES OF MEETINGS
BETWEEN
PHNOM PENH CAPITAL ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY
FOR
AMENDMENT OF THE RECORD OF DISCUSSIONS
ON
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION IN PHNOM PENH**

The Japan International Cooperation Agency (hereinafter referred to as "JICA") and Phnom Penh Capital Administration (hereinafter referred to as "PPCA") hereby agree that the Record of Discussions on the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as "the Project") signed on October 12th, 2016 is amended as follows;

1. Term of Cooperation

Original	Amended
Appendix 1. Project Description II. Outline of the Project 4. Duration Five (5) years and two (2) months from the arrival of the first expert	Appendix 1. Project Description II. Outline of the Project 4. Duration <u>Five (5) years and eight (8) months</u> from the arrival of the first expert
Reason: The PPCA and CBA (City Bus Authority) have suspended the regular bus service since 26 th March 2020 as part of preventive measures against the COVID-19 pandemic taken by PPCA. Due to the efforts made by the Royal Government of Cambodia, including PPCA, a series of preventive measures against the COVID-19, which include a vaccination campaign to all desired and voluntary citizens, have been taken and, accordingly, the Royal Government of Cambodia announced the reopening of Cambodia to embrace 'New Normal' to the public on 1 st November 2021 which allows the citizens to lead a new way of normal life with preventive measures against COVID-19. As part of the New Normal campaign, the PPCA instructed CBA to restore the operation of City Bus on 1 st November 2021, following advanced actions, including an official permission and recognition from higher authorities, including the Minister for Economic and Finance and Minister for Justice. Following this instruction, the CBA officially announced the resumption of bus operation on 2 nd November 2021, and resumed bus operation utilizing 60 units of the bus and running on four (4) designated lines (Line 1A, Line 2, Line 3 and Line 4 A/B) on the same day. Although the resumption of bus operation is slightly delayed against September 2021 as the timing both PPCA and JICA agreed during the 4 th Joint Coordinating Committee meeting held on 16 th July 2021, these efforts made by PPCA for restoration of bus operation was highly appreciated by JICA and JICA positively considers extension of	

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the project duration. Through the follow up meeting held on 10th November 2021, PPCA and JICA agreed to extend the project duration for additional six (6) months until August 2022 to catch up and improve the operational capacity for the regular bus service to be gained during the remaining project period of eleven (11) months since the bus service was suspended (Note that the remaining period from March 2021 to February 2022 and applying September 2021 as a timing of restart of the bus operation, the new termination period is estimated in August 2022) and to achieve the attainable project goal and outcomes under the existing project concept and TOR. JICA insisted that the above mentioned extension period was reasonable, however, there was no room for further additional extension of the project period considering the uncertainty of COVID-19 situation, and all participants understood this was the final extension. JICA also explained that JICA, at this moment, could neither promise nor confirm to implement training in Japan even within the extended project period, referring that there is still restriction to enter Japan and the virus infection case is surging again around the world especially in Europe.

In line with the agreed project extension, the PPCA made the following requests to JICA: (i) Assistance to CBA to upgrade it to the Public Enterprise, (ii) Preparation for extension of the bus route and service to the New International Airport which will be open to public in 2023, and (iii) Dispatch of CBA mechanics to an overseas training in the third country during the remaining project period. JICA noted and promised to consider the requests. .

Note that since the CBA terminated any service by bus conductors as part of business management plan to reduce the bus operation cost, all project outcome, activities, as well as objective verifiable indicators, related to the conductor are eliminated from the PDM and PO.

*According to the above amendment, PDM and PO are modified as Annex 3.

This amendment becomes effective as of the 17th day of November, 2021.

- Annex 1 : Record of Discussions (signed on 12th October, 2016)
- Annex 2 : Minutes of Meetings between PPCA and JICA for Amendment of the Record of Discussions on the Project for Improvement of Public Bus Operation in Phnom Penh
- Annex 3 : PDM ver 1.3 and PO ver 7.2
- Reference : Remaining sub-activities and implementation schedule (Draft as of 10th November 2021)

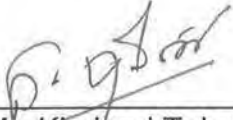
Phnom Penh, 17 November, 2021



Ms. Haruko Kamei
Chief Representative
JICA Cambodia Office



H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration



Mr. Kiminari Takahashi
Chief Advisor
JICA Expert Team



RECORD OF DISCUSSIONS
ON
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS
OPERATION
IN
PHNOM PENH
AGREED UPON BETWEEN
PHNOM PENH CAPITAL ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Phnom Penh, October 12, 2016 *14*

		
Itsu ADACHI Chief Representative JICA Cambodia Office Japan International Cooperation Agency Japan		H.E. Sornheatevong Governor Phnom Penh Capital Administration Cambodia

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In response to the official request of the Government of the Kingdom of Cambodia (hereinafter referred to as "GOC") to the Government of Japan (hereinafter referred to as "GOJ"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Phnom Penh Capital Administration, Department of Public Works and Transport of Phnom Penh Capital Administration, City Bus Authority (hereinafter referred to as "PPCA", "DPWT/PPCA" and "CBA" respectively) to develop a detailed plan of the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as "the Project").

Both JICA and the Kingdom of Cambodia sides (hereinafter referred to as "both sides") agreed the details of the Project and the main points discussed as described in the Appendix 1 and the Appendix 2 respectively.

Both sides also agreed that PPCA, DPWT/PPCA and CBA, the counterparts to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Kingdom of Cambodia (hereinafter referred to as "Cambodia").

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on June 17th 2003 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on May 6th 2016 between GOJ and GOC.

Appendix 1: Project Description
Appendix 2: Main Points Discussed

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PROJECT DESCRIPTION

I. BACKGROUND

Phnom Penh is the capital and the largest city of Cambodia. Recently the registered number of the cars has increased continuously together with rapid urbanization, population increase and vitalization of economic activities. These situations brought about heavy traffic congestion and degradation of urban environment in Phnom Penh. At present, mobility in Phnom Penh is mainly dependent on motorcycles. It was reported that around 80 % of the total traffic along urban streets was dominated by motorcycles (JETRO, 2008) and about 68 % of road accident fatalities caused by motorcycles (RCVIS, 2012). It is expected to continue the further expansion of the registered number of the cars due to the increase of population and economic activities. In addition, the increase of road accident fatalities has been growing problem in Phnom Penh. Therefore the drastic policy formulation of transport improvement and the implementation have been required.

In response to the official request of Cambodia, JICA implemented "the Project for Comprehensive Urban Transport Plan in Phnom Penh City (PPUTMP)" from 2011 to 2014, which primarily involved in reviewing the existing transport master plan (2011 M/P) to formulate new comprehensive urban transport master plan for 2035 (2014 M/P). In the 2014 M/P, the new road map for the development of public transport system, road network and traffic management in Phnom Penh Capital City (PPCC) were formulated based on the estimate of future population (around 287 million, 2035). Also introduction of public transport system was considered as the most priority project to alleviate traffic congestion in PPCC because there was no proper mass public transport system. Therefore, early year 2014, JICA conducted one month City Bus Operation Experiment in Phnom Penh.

Following the experiment, PPCA established CBA and has been trying to continue the full city bus operation by themselves, and they purchased more used bus fleets at their own expense to run 3 bus routes. Furthermore, PPCA is also planning to expand the bus routes to 10 lines in the city for the development of safety and convenient public bus routes that contribute to relieve traffic congestion.

To address these issues, JICA is conducting "the Preparatory Survey for the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh" to consider the provision of bus fleets by Japanese Grant aid for expansion of bus routes. However, organization structure of CBA is fragile and their service level of bus operation such as bus route and headway is limited because CBA was established only 2 years ago. The improvement of bus operation management capacity is necessary to secure proper operation and maintenance of buses to be procured by Japanese Grant aid. Therefore, GOC requested GOJ to implement the technical assistance "The Project for Improvement of Public Bus Operation in Phnom Penh" in line with Grant aid.

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II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the Plan of Operation (Annex 2).

1. Input

(1) Input by JICA

(a) Dispatch of Experts

JICA will provide services of experts in the following categories and fields of expertise:

- Chief Advisor/Public Transport Policy
- Bus Operation Planning
- Bus Vehicle Maintenance
- Bus Driver Training
- Business Management
- Traffic Control and Safety
- Bus Facility Planning
- Information and Communication Technology
- Mobility Management
- Monitoring and Evaluation
- Others, as needed

(b) Training

JICA will receive the Cambodian personnel concerned with the Project for technical training in Japan or third countries as needed.

(c) Machinery and Equipment

JICA will provide machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed below:

- Information System on Bus Location
- Alcohol Detector

In case of importation, the machinery, equipment and other materials under II-1 (1) (c) above will become the property of the GOC upon being delivered C.I.F. (cost, insurance and freight) to the Cambodia authorities concerned at the ports and/or airports of disembarkation.

(2) Input by Cambodia side

Cambodia side will take necessary measures to provide at its own expense:

- (a) Services of Cambodia's counterpart personnel and administrative personnel as referred to in II-2;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;

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- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project;
- (h) Expenses necessary for transportation within Cambodia of the equipment referred to in II-1 (1) as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Cambodia from Japan in connection with the implementation of the Project

2. Implementation Structure

The project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

(1) Cambodia side

(a) Project Director

Deputy Governor, Phnom Penh Capital Administration will bear overall responsibility for administration and implementation of the Project.

(b) Deputy Project Director

Director, Department of Public Works and Transport of Phnom Penh Capital Administration will assist Project Director in administration and implementation of the Project.

(c) Project Manager

Governor, City Bus Authority will be responsible for managerial and technical matters of the Project.

(d) Counterpart Personnel

- 1) Phnom Penh Capital Administration
- 2) Department of Public Works and Transport of Phnom Penh Capital Administration
- 3) CBA

(3) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to PPCA, DPWT/PPCA and CBA on any matters pertaining to the implementation of the Project.

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will review the progress, revise the overall plan when necessary, approve an annual work plan, conduct evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of


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Project through the Monitoring Sheets based on the Project Design Matrix (PDM) and Plan of Operation (PO). The Monitoring Sheets will be reviewed every six (6) months.

Also, Project Completion Report will be drawn up one (1) month before the termination of the Project.

JICA will conduct the following evaluations and surveys to verify sustainability and impact of the Project and draw lessons. Cambodia side is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, Cambodia side will take appropriate measures to make the Project widely known to the people of Cambodia.

VI. Misconduct

If JICA receives information related to suspected corrupt or fraudulent practices in the implementation of the Project, Cambodia side and relevant organizations will provide JICA with such information as JICA may reasonably request, including information related to any concerned official of the government and/or public organizations of Cambodia.

Cambodia side and relevant organizations will not, unfairly or unfavorably treat the person and/or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project.

VII. MUTUAL CONSULTATION

JICA and Cambodia side will consult each other whenever any major issues arise in the course of Project implementation.

VIII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and Cambodia side. However, PO may be amended in the Monitoring Sheets.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation
- Annex 3 Project Organization Chart
- Annex 4 A List of Proposed Members of Joint Coordinating Committee/
Steering Committee

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proposed members of JCC is shown in the Annex 4.

3. Project Site(s) and Beneficiaries

Project sites: Project activities will be implemented at PPCA at the central level and mainly conducted at operational level at DPWT/PPCA and CBA in Phnom Penh.

Beneficiaries: (Direct) PPCA, DPWT/PPCA and CBA, (Indirect) People using public transportation in Phnom Penh

4. Duration

Four (4) years from the arrival of the first expert.

5. Reports

Cambodia side and JICA experts will jointly prepare the following reports in English.

- (1) Monitoring Sheet on semi-annual basis until the Project completion
- (2) Project Completion Report at the time of Project completion

6. Environmental and Social Considerations

- (1) Cambodia side will abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF CAMBODIA SIDE

1. Cambodia side will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Cambodian national as a result of Japanese technical cooperation contributes to the economic and social development of Cambodia, and that the knowledge and experience acquired by the personnel of Cambodia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the JICA experts referred to in II-1 above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Cambodia.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement of Technical Cooperation signed on June 17th 2003 between the Government of Japan and the Government of Kingdom of Cambodia.

IV. MONITORING AND EVALUATION

JICA and Cambodia side will jointly and regularly monitor the progress of the


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Annex 1: Project Design Matrix (PDM)

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

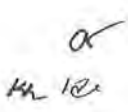
Project Period: January 2017 to December 2020 (4 years)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh; Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	· Modal share by public transport is increased by ### % in Phnom Penh	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> · CBA keeps bus operation on schedule · Bus vehicle is maintained periodically · Attitude of the drivers and conductors towards the bus users is improved · The number of traffic accidents by bus is decreased · Financial health of CBA is improved · Traffic regulations are introduced on the bus operation 	<ul style="list-style-type: none"> · Record of the operation · Record of the maintenance · Interview · Accident report · Profitability · Decision/Degree 	<ul style="list-style-type: none"> · Policy on public transportation remains as the priority policy · People's behaviors on public transport will be changed.
Outputs			
1. Bus operation capacity of CBA is improved	<ul style="list-style-type: none"> 1.1 Level of skills and knowledge on bus operation of CBA is improved 1.2 Bus operation manual is developed 1.3 Bus operation system is established 1.4 Bus operation is reviewed based on data 1.5 Basic plan of reliable and safety operation is formulated 1.6 Reliable and safety operation is improved 1.7 All the activities in the Action Plan are completed 	<ul style="list-style-type: none"> · Training evaluation report · Manual · System · New bus operation plan · Training report · Evaluation report on the operation · Progress report 	· CBA is not privatized
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	<ul style="list-style-type: none"> 2.1 Bus vehicle maintenance manual is developed 2.2 CBA's proficiency in the bus vehicle maintenance technology is improved 2.3 Reliability of the maintenance work is improved, and the number of breakdown is decreased 	<ul style="list-style-type: none"> · Manual · Skill test · Inspection report 	
3. Training system of bus drivers and conductors, drivers management system for safe driving, and labor management system are established in CBA	<ul style="list-style-type: none"> 3.1 Bus driver training manual is developed 3.2 Conductor work manual is developed 3.3 ## trainers have completed the driver training 3.4 At least ##% of drivers have passed training 3.5 ## trainers have completed the conductor training 3.6 At least ## % of conductors have passed training 3.7 Performance evaluation of the drivers and conductors is conducted 	<ul style="list-style-type: none"> · Manual · Manual · Result of skill test · Training report · Result of skill test · Training report · Evaluation report 	
4. CBA's business management capacity is improved	<ul style="list-style-type: none"> 4.1 Financial statements are prepared 4.2 Ticket management manual is developed 4.3 Operation cost and passenger database are built 4.4 Potential needs in bus operation are assessed 4.5 Annual business plan is formulated and reflects on budget plan 4.6 Report of the new policies on the bus fare and subsidy is prepared 4.7 Road map and technological requirement for introducing smart card system for fare collection are prepared 	<ul style="list-style-type: none"> · Financial statements · Manual · CBA account document/ database · Research report · Annual business plan · Study report · Roadmap, study report 	
5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved	<ul style="list-style-type: none"> 5.1 Level of skills and knowledge on the traffic control and management is improved 5.2 Report of the traffic management and safety measures is prepared 5.3 Para-transit improvement plan on the bus operation routes is formulated 5.4 Evaluation of the pilot projects and social experiments is conducted 5.5 Technical design documents for the bus related facilities are prepared 5.6 Technical examination report for bus information and operation management system is prepared 5.7 At least ## participants of mobility management activities come to take public transport 	<ul style="list-style-type: none"> · Training text · Study report · Improvement plan · Pilot project evaluation report · Technical design document · Technical report for the system · Evaluation report on mobility management activities 	
Activities	Input	Pre-Condition	



<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system with GPS</p> <p>1.4 To analyze the bus operation data to review the existing operation plan</p> <p>1.5 To formulate education and training plan for reliable and safety operation (examination of necessary measures)</p> <p>1.6 To implement OJT on the reliable and safely operation</p> <p>1.7 To monitor and manage the implementation of the Action Plan developed under "Preparatory Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Public transport policy - Bus operation planning - Bus vehicle maintenance - Bus driver training - Business management - Traffic control and safety - Bus facility planning - Information and communication technology - Mobility management - Monitoring and evaluation 	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p>
<p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance technologies and OJT for practice</p> <p>2.3 To monitor and manage inspection and maintenance works</p>	<p><u>Training in Japan and developing countries</u></p>	
<p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual (driving technology including theory and practice)</p> <p>3.2 To develop work manual for drivers and conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the monitoring system for the drivers and conductors by camera installed inside buses and drive-recorders etc., and implement OJT for practice</p>	<p><u>equipment</u></p> <ul style="list-style-type: none"> - Information system on bus location - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p>	<p>Pre-condition</p> <ul style="list-style-type: none"> · CBA continues to exist for certain years
<p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To develop manual for existing fare and ticket management</p> <p>4.3 To manage operation cost/expenses and passenger data</p> <p>4.4 To implement market research in bus operation area</p> <p>4.5 To formulate an annual business plan including budget and accounting management</p> <p>4.6 To review and examine the bus fare system and subsidy policy</p> <p>4.7 To provide technical support on introduction of smart card system for fare collection based on Japanese experience</p>	<p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	
<p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To implement OJT on the technology and practice for design and planning of the bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and operation management system</p> <p>5.7 To implement training for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>		

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Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

	Plan		Actual	
	Plan	Actual	Plan	Actual
2.1 To develop Bus Vehicle Inspection and Maintenance Manual				
2.2 To implement training for bus vehicle inspection/maintenance technologies and OJT for practice				
2.3 To Monitor and manage the inspection and maintenance works				

Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

	Plan		Actual	
	Plan	Actual	Plan	Actual
3.1 To develop Driver Training Manual (Driving technology including theory and practical)				
3.2 To develop Work Manual for Driver and Conductor				
3.3 To implement trainings for trainers of driver				
3.4 To implement series of trainings for both existing and newly-employed drivers by the trainers				
3.5 To implement trainings for trainers of conductors				
3.6 To implement series of trainings for conductors by the trainers				
3.7 To establish the monitoring system for the drivers and conductors by camera inside bus and drive-recorder, etc., and implement OJT for practice				

Output 4: Improvement of Business Management Capacity of CBA

	Plan		Actual	
	Plan	Actual	Plan	Actual
4.1 To implement Training for financial accounting and management				
4.2 To develop manual for existing fare and ticket management				
4.3 To manage operation cost/expenses and passenger data				
4.4 To implement Market Research in the bus operation area				
4.5 To formulate an Annual Business Plan including budget and accounting management				
4.6 To review and examine the bus fare system and subsidy policy				
4.7 To provide technical support on introduction of smart card system for fare collection system				

Output 5: Improvement of Capacity on policy planning for the Public Transport Priority Measures

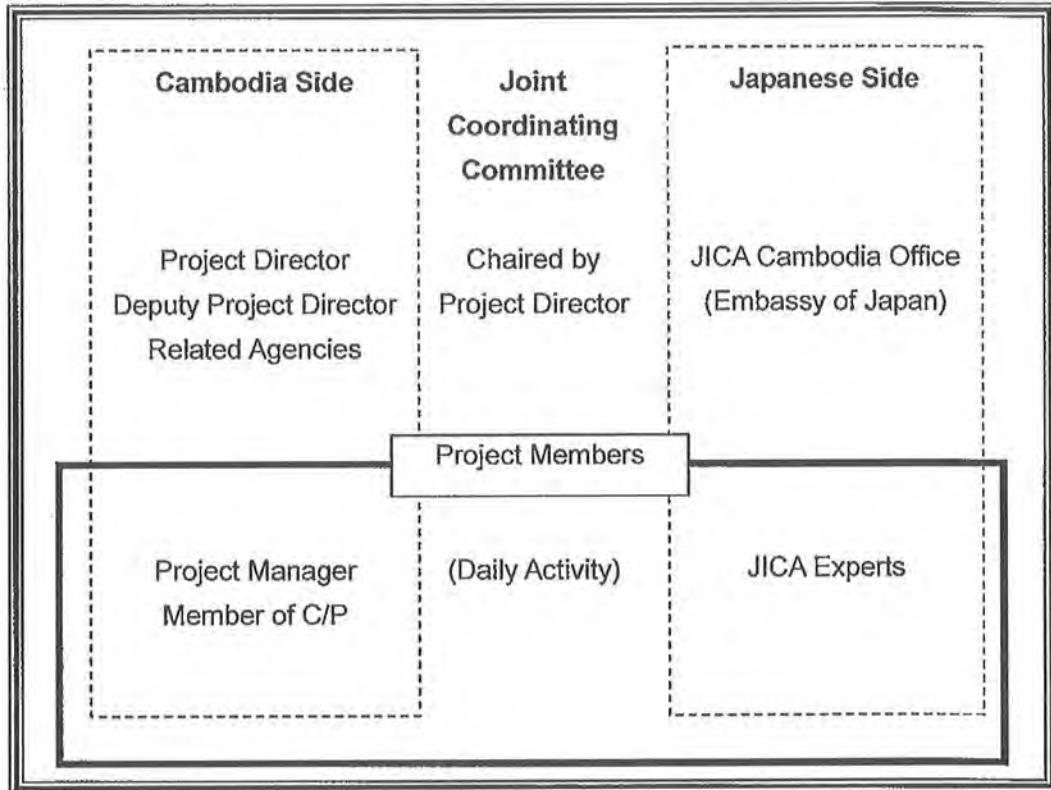
	Plan		Actual	
	Plan	Actual	Plan	Actual
5.1 To implement training for traffic control and management				
5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal				
5.3 To develop Para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes				
5.4 To implement a pilot project and social experiments for the proposed traffic management measures				

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Annex 3: Project Organization Chart

The Project will be implemented by Cambodia side in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:

Joint Implementation Structure of the Project



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Annex 4: Proposed Members of Joint Coordinating Committee (JCC)

The Proposed chairperson and the members of the JCC will be as follows:

- 1) Chairperson
 - Project Director
- 2) Members from the Cambodia Side
 - Deputy Project Director
 - Project Manager
 - Representative from Phnom Penh Capital Administration
 - Representative from Department of Public Works and Transport of Phnom Penh Capital Administration
 - Representative from City Bus Authority
 - Representative from Ministry of Economy and Finance
 - Personnel concerned to be decided by Cambodia Side
- 3) Members from the Japanese Side
 - Japanese Experts
 - Chief Representative, JICA Cambodia Office
 - Personnel concerned to be decided by the Japanese Side
- 4) Others
 - Officials of the Embassy of Japan may attend the meeting as observers.
 - Persons who are invited by the Chairperson may attend the meeting as observers.

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MAIN POINTS DISCUSSED

(j) Project Design Matrix (PDM) and Plan of Operation (PO)

Both sides agreed on the tentative PDM (Annex I) and PO (Annex II). The PDM and PO will be used as a management tool of the Project, and are to be flexibly revised according to the progress and the achievement of the Project, upon mutual agreement between Cambodia side and JICA by signing a Minutes of Meetings, according to the R/D.

(ii) Setting of numerical targets for Objectively Verifiable Indicators in PDM

Both sides agreed that the numerical targets for Objectively Verifiable Indicators in PDM would be set based on the result of baseline survey.

OK
K. K.

**MINUTES OF MEETINGS
BETWEEN
PHNOM PENH CAPITAL ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY
FOR
AMENDMENT OF THE RECORD OF DISCUSSIONS
ON
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS OPERATION IN PHNOM PENH**

Phnom Penh Capital Administration (hereinafter referred to as "PPCA") and The Japan International Cooperation Agency (hereinafter referred to as "JICA") hereby agree that the Record of Discussions on the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as "the Project") signed on October 12th, 2016 is amended as follows;

1. Term of Cooperation

Before	Amended Version
Annex 1. Record of Discussions Appendix 1. Project Description II. Outline of the Project 4. Duration <u>Four (4) years</u> from the arrival of the first expert	Annex 1. Record of Discussions Appendix 1. Project Description II. Outline of the Project 4. Duration <u>Five (5) years and two (2) months</u> from the arrival of the first expert
Annex 2. Project Design Matrix (PDM) Project Period: January 2017 to December 2020 (4 years)	Annex 2. Project Design Matrix (PDM) Project Period: January 2017 to <u>February 2022</u> (5 years and 2 months)
Reason: The Phnom Penh City Bus Authority (hereinafter referred to as "CBA") has suspended the regular bus service since 26 th March 2020 as part of preventive measures against the COVID-19 pandemic taken by the PPCA. During the suspension period, the CBA has been providing a limited number of chartered bus service for essential workers and needs (such as doctors/nurses and international air passengers). In order to prevent bus drivers and passengers from the infection of the COVID-19, the CBA has been actively involved in providing preventive measures, such as organization of COVID-19 Prevention Training, installation of bus protection shields as well as teaching posters, and development of the code of conducts for drivers during COVID-19 pandemic, etc. The PPCA and CBA are currently preparing to restore the regular bus service to be resumed in October 2020. Meanwhile, JICA Expert Team has left Phnom Penh and will not be able to be mobilized until April 2021. Accordingly, PPCA and JICA confirmed it is essential to extend the project duration for additional fourteen (14) months to catch up and improve the operational capacity for	

the regular bus service to be gained during the same suspension period and to achieve the pre-set project goal and outcomes.

*According to the above amendment, PDM and PO are modified as Annex 2.

This amendment becomes effective as of October , 2020.

Annex 1 : Record of Discussions (signed on October 12th, 2016)

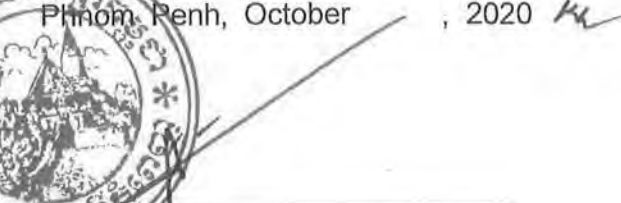
Annex 2 : PDM ver 1.2 and PO ver 7.1

Annex 3 : Minutes of Meeting (signed on August 11th, 2020)

Annex 4 : Minutes of Meeting (signed on August 25th, 2020)


Mr. Yuichi Sugano
Chief Representative
JICA Cambodia Office



Phnom Penh, October , 2020 *KH*

H.E. Koeut Chhe
Deputy Governor,
Phnom Penh Capital Administration




Mr. Kiminari Takahashi
Chief Advisor
JICA Expert Team

Annex 3: Project Design Matrix (PDM) Ver_1.3

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to August 2022 (5 years and 8 months)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹ in Phnom Penh by 2025	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2022 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2022. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2022. • Average operation speed maintained at 15km/h in 2022. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy
Outputs			
<ol style="list-style-type: none"> 1. Bus operation capacity of CBA is improved 2. Maintenance and inspection capacity on bus vehicles of CBA is implemented 3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA 4. CBA's business management capacity is improved 5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved 	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have completed the conductor training and passed training • Safety management system is developed • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)⁶ is improved to trainer's level • Financial statements are prepared • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)⁷ is improved to trainer's level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed • Bus information and location system is developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline • Maintenance Manual • Training evaluation report • Inspection report • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report • Training evaluation report • Financial statements • Manual • Study report • Business plan • Agreed policy • Ticketing system • Training evaluation report • Improvement strategy/plan • Pilot project and mobility management evaluation report • Inventory of bus related facilities • Bus information and location system 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities.

Activities	Input	Pre-Condition
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system and develop the operation plan</p> <p>1.4 To analyze the bus operation data and improve the operation plan</p> <p>1.5 To develop bus safety operation guideline and implement OJT for practice</p> <p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice</p> <p>2.3 To monitor and evaluate inspection and maintenance works</p> <p>3. <u>Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual</p> <p>3.2 To develop work manual for conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice</p> <p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To collect and analyze operation cost/expenses and passenger data</p> <p>4.3 To implement market research in bus operation area</p> <p>4.4 To formulate a business plan including budget and accounting management</p> <p>4.5 To review and examine the bus fare system and subsidy policy</p> <p>4.6 To provide technical support for introduction of cashless ticketing system for fare collection</p> <p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and location system</p> <p>5.7 To implement workshops for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Chief Advisor/ Public Transport Policy - Deputy Chief Advisor/ Public Transport Policy (2) - Bus Operation Planning - Bus Vehicle Maintenance - Bus Driver Training - Business Management - Traffic Control and Safety - Bus Facility Planning - IT System/Data Management - Mobility Management - Stakeholder Management - Monitoring and Evaluation - Bus Operator Advisory Group - Preparatory Survey Review (Team Leader) - Preparatory Survey Review (Bus Specification and Equipment) - Preparatory Survey Review (Procurement Plan) <p><u>Training in Japan and third countries</u></p> <p><u>Equipment</u></p> <ul style="list-style-type: none"> - Bus location system - Bus safety management system - Passenger monitoring system - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<p>Most of the counterparts assigned will be continuously responsible for the assigned work</p>

Note 1: Under the assumption that 180 buses operate with occupancy rate at 50% of seat capacity on 10 PPCA/CBA's proposed bus lines.

Note 2: Deputy Governor of CBA, Chief of Technical Office and one (1) selected senior staff of Technical Office.

Note 3: Heads of Routine Inspection Group, Break Maintenance Group, Crutch Maintenance Group, Tire Maintenance Group, Painting and Body Works Group

Note 4: Two (2) Chiefs of Driver Group per route (20 chiefs for 10 routes)

~~Note 5: Two (2) Chiefs of Conductor Group per route (20 chiefs for 10 routes)~~

Note 6: Deputy Governor of CBA, Chief of Accounting Office and one (1) selected senior staff of Accounting Office of CBA

Note 7: One (1) selected Head/Chief of CBA (Technical Office), PPCA (Department of Urban Management) and DPWT (Division of Road Transport)

Reference: Remaining sub-activities and implementation schedule (Draft as of 10th November 2021)

Output	Activities	Remaining Tasks	2021												Note			
			2021						2022									
			Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug				
1. Improvement of Bus Operation Capacity of CBA	1.1 To implement training for bus operation	□I. (OJT)																Assume partial operation regimes in Dec 2021. Assume full operation regimes in July 2022
		□M. (Capacity assessment)																
	1.2 To develop bus operation manual and implement OJT for practice	□I5. Finalization of Operation Manual																
		□I6. Completion of development of BOMS																
	1.3 To establish bus operation system and develop the operation plan	□M3. Review of operation of BOMS and its design improvement on scheduling																
		□P1. Bus operation plan/bus fleet deployment plan under COVID-19 pandemic																
	1.4 To analyze the bus operation data and improve the operation plan	□P2. Improved bus operation plan/bus fleet deployment plan under post-COVID-19																
		□P3. 3-5 year bus operation plan/bus fleet deployment plan under mid-term business plan																
		□I1. Approval of operation plan/bus fleet deployment plan under COVID-19																
		□I2. Stepwise operation under COVID-19																
		□I3. Approval of operation plan/bus fleet deployment plan under post COVID-19																
		□I4. Full scale and stepwise operation after COVID-19																
		□M1. Review of operation under COVID-19 and optimized operational plan/ timetable thru operation of BOMS																
		□M2. Review of full scale operation and optimized operation plan/ timetable thru operation of BOMS																
2. Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA	2.1 To develop bus vehicle inspection and maintenance manual	□P1. Finalization of Bus Inspection and Management Manual																
		□P2. Finalization of mechanics training materials																
	2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice	□P3. 3-5 year bus fleet operation and management plan under mid-term business plan																
		□I1. Implementation of periodical inspection and maintenance																
	2.3 To monitor and evaluate inspection and maintenance works	□I2. Development of database on periodic inspection and maintenance records																
		□I3. Improvement of BOMS on bus fleet management																
		□M1. Review of operation of BOMS and its design improvement on fleet management																
		□M2. Evaluation on intensive and short-term trainings																
3. Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labour	3.1 To develop driver training manual	□P1. Finalization of Drivers Management Manual																
		□I1. Finalization of Driver Training Materials																
	3.3 To implement TOT of drivers	□I. (OJT)																
		□M. (Capacity Assessment)																
	3.4 To implement training for existing and newly employed drivers	□I2. Intensive training for safety driving and procedures during COVID-19																
		□I3. Full scale intensive training for safety driving during post COVID-19																
	3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice	□P2. Driver/staff deployment plan under bus operation plan during COVID-19 pandemic																
		□P3. Roster development to resume bus service under COVID-19																
		□P4. Driver/staff deployment plan under improved bus operation plan during post-COVID-19																
		□P5. 3-5 year driver/staff deployment plan under mid-term business plan																
□I4. Deployment of drivers/staffs under COVID-19 bus operation																		
□I5. Deployment of drivers/staffs for post COVID-19 operation																		
□M1. Monitoring on accidents of bus during COVID-19/post COVID-19																		
□M2. Monitoring on driver/staff deployment and optimized development plan thru operation of BOMS																		
4. Improvement of Business Management Capacity of CBA	4.1 To implement training for financial accounting and management accounting	□I. (OJT)																
		□M. (Capacity assessment)																
	4.2 To collect and analyze operation cost/expenses and passenger data	□I1. Finalization of BOM model																
		□M1. Review of expense/revenue of bus operation during COVID-19 and post COVID-19																
	4.3 To implement market research in bus operation area Plan	□P1. Online passenger and non-passenger survey																
		□P2. Preparation of revenue generation plan																
□I2. Implementation of pilot revenue generation scheme																		
4.4 To formulate a business plan including budget and accounting management	□M2. Monitoring and evaluation of revenue generation scheme																	
	□P3. Preparation of 3-5 year mid-term business plan																	
4.5 To review and examine the bus fare system and subsidy policy Plan	□I3. Finalization and approval of mid-term business plan																	
	□I4. Finalization and approval of fare/subsidy policy and related decree																	
4.6 To provide technical support for introduction of cashless ticketing system for fare collection	□P4. Assist to introduce Bakong as part of e-ticketing system																	
	□I5. Assist to implement pilot project of Bakong																	
5. Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA	5.1 To implement training for traffic management	□I. (OJT)																
		□M. (Capacity Assessment)																
	5.2 To examine traffic management and safety measures on the bus routes	□P1. Finalization of Bus Priority Measure Planning Guide																
		□P2. Finalization of design of pilot project: i) Rapid Bus Project, ii) Shared e-bike Project, iii) Smart Bus Shelter Project																
	5.4 To implement pilot projects and social experiments for the proposed traffic management measures	□M1. Monitoring and evaluation of pilot project(s)																
		□P3. Preparation of IP of pilot project: i) Rapid Bus Project, ii) Shared e-bike Project, iii) Smart Bus Shelter Project																
	5.5 To provide technical support on development of bus-related facilities	□I1. Implementation of pilot project: i) Bus Priority Signal Project, ii) Rapid Bus Project, iii) Shared e-bike Project, iv) Smart Bus Shelter Project																
		□P4. Finalization of Bus Facility Planning and Design Guide																
	5.6 To introduce bus information and location system	□I2. Improvement of bus facilities (e.g., Bus shelter)																
		□P5. Development of Google-based GTFS data																
5.7 To implement workshops for mobility management to promote modal shift	□I3. Upgrading Location System to Google Search																	
	□P6. Finalization of Mobility Management Planning Guide																	
	□P7. Finalization of Mobility Management materials																	
		□I4. Implementation of pilot project: i) Bus map/Bus information, ii) PR activities (poster, banner, radio, PR video), iii) Workshop/Camp/Sign (School dissemination, travel blending)																

NOTE: P: Planning, I: Implementation, M: Monitoring & Evaluation. Red-colored sub-activities to be completed only when bus operation restored.





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Original Record of Discussion (R/D)

RECORD OF DISCUSSIONS
ON
THE PROJECT FOR IMPROVEMENT OF PUBLIC BUS
OPERATION
IN
PHNOM PENH
AGREED UPON BETWEEN
PHNOM PENH CAPITAL ADMINISTRATION
AND
JAPAN INTERNATIONAL COOPERATION AGENCY

Phnom Penh, October 12, 2016 KH

 	 
Itsu ADACHI Chief Representative JICA Cambodia Office Japan International Cooperation Agency Japan	H.E. PA Socheatevong Governor Phnom Penh Capital Administration Cambodia

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In response to the official request of the Government of the Kingdom of Cambodia (hereinafter referred to as "GOC") to the Government of Japan (hereinafter referred to as "GOJ"), the Japan International Cooperation Agency (hereinafter referred to as "JICA") held a series of discussions with Phnom Penh Capital Administration, Department of Public Works and Transport of Phnom Penh Capital Administration, City Bus Authority (hereinafter referred to as "PPCA", "DPWT/PPCA" and "CBA" respectively) to develop a detailed plan of the Project for Improvement of Public Bus Operation in Phnom Penh (hereinafter referred to as "the Project").

Both JICA and the Kingdom of Cambodia sides (hereinafter referred to as "both sides") agreed the details of the Project and the main points discussed as described in the Appendix 1 and the Appendix 2 respectively.

Both sides also agreed that PPCA, DPWT/PPCA and CBA, the counterparts to JICA, will be responsible for the implementation of the Project in cooperation with JICA, coordinate with other relevant organizations and ensure that the self-reliant operation of the Project is sustained during and after the implementation period in order to contribute toward social and economic development of the Kingdom of Cambodia (hereinafter referred to as "Cambodia").

The Project will be implemented within the framework of the Agreement on Technical Cooperation signed on June 17th 2003 (hereinafter referred to as "the Agreement") and the Note Verbales exchanged on May 6th 2016 between GOJ and GOC.

Appendix 1: Project Description

Appendix 2: Main Points Discussed

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PROJECT DESCRIPTION

I. BACKGROUND

Phnom Penh is the capital and the largest city of Cambodia. Recently the registered number of the cars has increased continuously together with rapid urbanization, population increase and vitalization of economic activities. These situations brought about heavy traffic congestion and degradation of urban environment in Phnom Penh. At present, mobility in Phnom Penh is mainly dependent on motorcycles. It was reported that around 80 % of the total traffic along urban streets was dominated by motorcycles (JETRO, 2008) and about 68 % of road accident fatalities caused by motorcycles (RCVIS, 2012). It is expected to continue the further expansion of the registered number of the cars due to the increase of population and economic activities. In addition, the increase of road accident fatalities has been growing problem in Phnom Penh. Therefore the drastic policy formulation of transport improvement and the implementation have been required.

In response to the official request of Cambodia, JICA implemented “the Project for Comprehensive Urban Transport Plan in Phnom Penh City (PPUTMP)” from 2011 to 2014, which primarily involved in reviewing the existing transport master plan (2011 M/P) to formulate new comprehensive urban transport master plan for 2035 (2014 M/P). In the 2014 M/P, the new road map for the development of public transport system, road network and traffic management in Phnom Penh Capital City (PPCC) were formulated based on the estimate of future population (around 287 million, 2035). Also introduction of public transport system was considered as the most priority project to alleviate traffic congestion in PPCC because there was no proper mass public transport system. Therefore, early year 2014, JICA conducted one month City Bus Operation Experiment in Phnom Penh.

Following the experiment, PPCA established CBA and has been trying to continue the full city bus operation by themselves, and they purchased more used bus fleets at their own expense to run 3 bus routes. Furthermore, PPCA is also planning to expand the bus routes to 10 lines in the city for the development of safety and convenient public bus routes that contribute to relieve traffic congestion.

To address these issues, JICA is conducting “the Preparatory Survey for the Project for Improvement of Transportation Capacity of Public Bus in Phnom Penh” to consider the provision of bus fleets by Japanese Grant aid for expansion of bus routes. However, organization structure of CBA is fragile and their service level of bus operation such as bus route and headway is limited because CBA was established only 2 years ago. The improvement of bus operation management capacity is necessary to secure proper operation and maintenance of buses to be procured by Japanese Grant aid. Therefore, GOC requested GOJ to implement the technical assistance “The Project for Improvement of Public Bus Operation in Phnom Penh” in line with Grant aid.

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II. OUTLINE OF THE PROJECT

Details of the Project are described in the Logical Framework (Project Design Matrix: PDM) (Annex 1) and the Plan of Operation (Annex 2).

1. Input

(1) Input by JICA

(a) Dispatch of Experts

JICA will provide services of experts in the following categories and fields of expertise:

- Chief Advisor/Public Transport Policy
- Bus Operation Planning
- Bus Vehicle Maintenance
- Bus Driver Training
- Business Management
- Traffic Control and Safety
- Bus Facility Planning
- Information and Communication Technology
- Mobility Management
- Monitoring and Evaluation
- Others, as needed

(b) Training

JICA will receive the Cambodian personnel concerned with the Project for technical training in Japan or third countries as needed.

(c) Machinery and Equipment

JICA will provide machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed below:

- Information System on Bus Location
- Alcohol Detector

In case of importation, the machinery, equipment and other materials under II-1 (1) (c) above will become the property of the GOC upon being delivered C.I.F. (cost, insurance and freight) to the Cambodia authorities concerned at the ports and/or airports of disembarkation.

(2) Input by Cambodia side

Cambodia side will take necessary measures to provide at its own expense:

- (a) Services of Cambodia's counterpart personnel and administrative personnel as referred to in II-2;
- (b) Suitable office space with necessary equipment;
- (c) Supply or replacement of machinery, equipment, instruments, vehicles, tools, spare parts and any other materials necessary for the implementation of the Project other than the equipment provided by JICA;
- (d) Information as well as support in obtaining medical service;



- (e) Credentials or identification cards;
- (f) Available data (including maps and photographs) and information related to the Project;
- (g) Running expenses necessary for the implementation of the Project;
- (h) Expenses necessary for transportation within Cambodia of the equipment referred to in II-1 (1) as well as for the installation, operation and maintenance thereof; and
- (i) Necessary facilities to the JICA experts for the remittance as well as utilization of the funds introduced into Cambodia from Japan in connection with the implementation of the Project

2. Implementation Structure

The project organization chart is given in the Annex 3. The roles and assignments of relevant organizations are as follows:

(1) Cambodia side

(a) Project Director

Deputy Governor, Phnom Penh Capital Administration will bear overall responsibility for administration and implementation of the Project.

(b) Deputy Project Director

Director, Department of Public Works and Transport of Phnom Penh Capital Administration will assist Project Director in administration and implementation of the Project.

(c) Project Manager

Governor, City Bus Authority will be responsible for managerial and technical matters of the Project.

(d) Counterpart Personnel

- 1) Phnom Penh Capital Administration
- 2) Department of Public Works and Transport of Phnom Penh Capital Administration
- 3) CBA

(3) JICA Experts

The JICA experts will give necessary technical guidance, advice and recommendations to PPCA, DPWT/PPCA and CBA on any matters pertaining to the implementation of the Project.

(4) Joint Coordinating Committee

Joint Coordinating Committee (hereinafter referred to as "JCC") will be established in order to facilitate inter-organizational coordination. JCC will be held at least once a year and whenever deems it necessary. JCC will review the progress, revise the overall plan when necessary, approve an annual work plan, conduct evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of

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proposed members of JCC is shown in the Annex 4.

3. Project Site(s) and Beneficiaries

Project sites: Project activities will be implemented at PPCA at the central level and mainly conducted at operational level at DPWT/PPCA and CBA in Phnom Penh.

Beneficiaries: (Direct) PPCA, DPWT/PPCA and CBA, (Indirect) People using public transportation in Phnom Penh

4. Duration

Four (4) years from the arrival of the first expert.

5. Reports

Cambodia side and JICA experts will jointly prepare the following reports in English.

- (1) Monitoring Sheet on semi-annual basis until the Project completion
- (2) Project Completion Report at the time of Project completion

6. Environmental and Social Considerations

- (1) Cambodia side will abide by 'JICA Guidelines for Environmental and Social Considerations' in order to ensure that appropriate considerations will be made for the environmental and social impacts of the Project.

III. UNDERTAKINGS OF CAMBODIA SIDE

1. Cambodia side will take necessary measures to:

- (1) ensure that the technologies and knowledge acquired by the Cambodian national as a result of Japanese technical cooperation contributes to the economic and social development of Cambodia, and that the knowledge and experience acquired by the personnel of Cambodia from technical training as well as the equipment provided by JICA will be utilized effectively in the implementation of the Project; and
- (2) grant privileges, exemptions and benefits to the JICA experts referred to in II-1 above and their families, which are no less favorable than those granted to experts and members of the missions and their families of third countries or international organizations performing similar missions in Cambodia.

Other privileges, exemptions and benefits will be provided in accordance with the Agreement of Technical Cooperation signed on June 17th 2003 between the Government of Japan and the Government of Kingdom of Cambodia.

IV. MONITORING AND EVALUATION

JICA and Cambodia side will jointly and regularly monitor the progress of the

Project through the Monitoring Sheets based on the Project Design Matrix (PDM) and Plan of Operation (PO). The Monitoring Sheets will be reviewed every six (6) months.

Also, Project Completion Report will be drawn up one (1) month before the termination of the Project.

JICA will conduct the following evaluations and surveys to verify sustainability and impact of the Project and draw lessons. Cambodia side is required to provide necessary support for them.

1. Ex-post evaluation three (3) years after the project completion, in principle
2. Follow-up surveys on necessity basis

V. PROMOTION OF PUBLIC SUPPORT

For the purpose of promoting support for the Project, Cambodia side will take appropriate measures to make the Project widely known to the people of Cambodia.

VI. Misconduct

If JICA receives information related to suspected corrupt or fraudulent practices in the implementation of the Project, Cambodia side and relevant organizations will provide JICA with such information as JICA may reasonably request, including information related to any concerned official of the government and/or public organizations of Cambodia.

Cambodia side and relevant organizations will not, unfairly or unfavorably treat the person and/or company which provided the information related to suspected corrupt or fraudulent practices in the implementation of the Project.

VII. MUTUAL CONSULTATION

JICA and Cambodia side will consult each other whenever any major issues arise in the course of Project implementation.

VIII. AMENDMENTS

The record of discussions may be amended by the minutes of meetings between JICA and Cambodia side. However, PO may be amended in the Monitoring Sheets.

The minutes of meetings will be signed by authorized persons of each side who may be different from the signers of the record of discussions.

- Annex 1 Logical Framework (Project Design Matrix: PDM)
- Annex 2 Tentative Plan of Operation
- Annex 3 Project Organization Chart
- Annex 4 A List of Proposed Members of Joint Coordinating Committee/
Steering Committee

Annex 1: Project Design Matrix (PDM)

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to December 2020 (4 years)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by public transport is increased by ### % in Phnom Penh	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • CBA keeps bus operation on schedule • Bus vehicle is maintained periodically • Attitude of the drivers and conductors towards the bus users is improved • The number of traffic accidents by bus is decreased • Financial health of CBA is improved • Traffic regulations are introduced on the bus operation 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Interview • Accident report • Profitability • Decision/Degree 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy • People's behaviors on public transport will be changed.
Outputs			
1. Bus operation capacity of CBA is improved	1.1 Level of skills and knowledge on bus operation of CBA is improved 1.2 Bus operation manual is developed 1.3 Bus operation system is established 1.4 Bus operation is reviewed based on data 1.5 Basic plan of reliable and safety operation is formulated 1.6 Reliable and safety operation is improved 1.7 All the activities in the Action Plan are completed	<ul style="list-style-type: none"> • Training evaluation report • Manual • System • New bus operation plan • Training report • Evaluation report on the operation • Progress report 	<ul style="list-style-type: none"> • CBA is not privatized
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	2.1 Bus vehicle maintenance manual is developed 2.2 CBA's proficiency in the bus vehicle maintenance technology is improved 2.3 Reliability of the maintenance work is improved, and the number of breakdown is decreased	<ul style="list-style-type: none"> • Manual • Skill test • Inspection report 	
3. Training system of bus drivers and conductors, drivers management system for safe driving, and labor management system are established in CBA	3.1 Bus driver training manual is developed 3.2 Conductor work manual is developed 3.3 ## trainers have completed the driver training 3.4 At least ##% of drivers have passed training 3.5 ## trainers have completed the conductor training 3.6 At least ## % of conductors have passed training 3.7 Performance evaluation of the drivers and conductors is conducted	<ul style="list-style-type: none"> • Manual • Manual • Result of skill test • Training report • Result of skill test • Training report • Evaluation report 	
4. CBA's business management capacity is improved	4.1 Financial statements are prepared 4.2 Ticket management manual is developed 4.3 Operation cost and passenger database are built 4.4 Potential needs in bus operation are assessed 4.5 Annual business plan is formulated and reflects on budget plan 4.6 Report of the new policies on the bus fare and subsidy is prepared 4.7 Road map and technological requirement for introducing smart card system for fare collection are prepared	<ul style="list-style-type: none"> • Financial statements • Manual • CBA account document/ database • Research report • Annual business plan • Study report • Roadmap, study report 	
5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved	5.1 Level of skills and knowledge on the traffic control and management is improved 5.2 Report of the traffic management and safety measures is prepared 5.3 Para-transit improvement plan on the bus operation routes is formulated 5.4 Evaluation of the pilot projects and social experiments is conducted 5.5 Technical design documents for the bus related facilities are prepared 5.6 Technical examination report for bus information and operation management system is prepared 5.7 At least ## participants of mobility management activities come to take public transport	<ul style="list-style-type: none"> • Training text • Study report • Improvement plan • Pilot project evaluation report • Technical design document • Technical report for the system • Evaluation report on mobility management activities 	
Activities		Input	Pre-Condition

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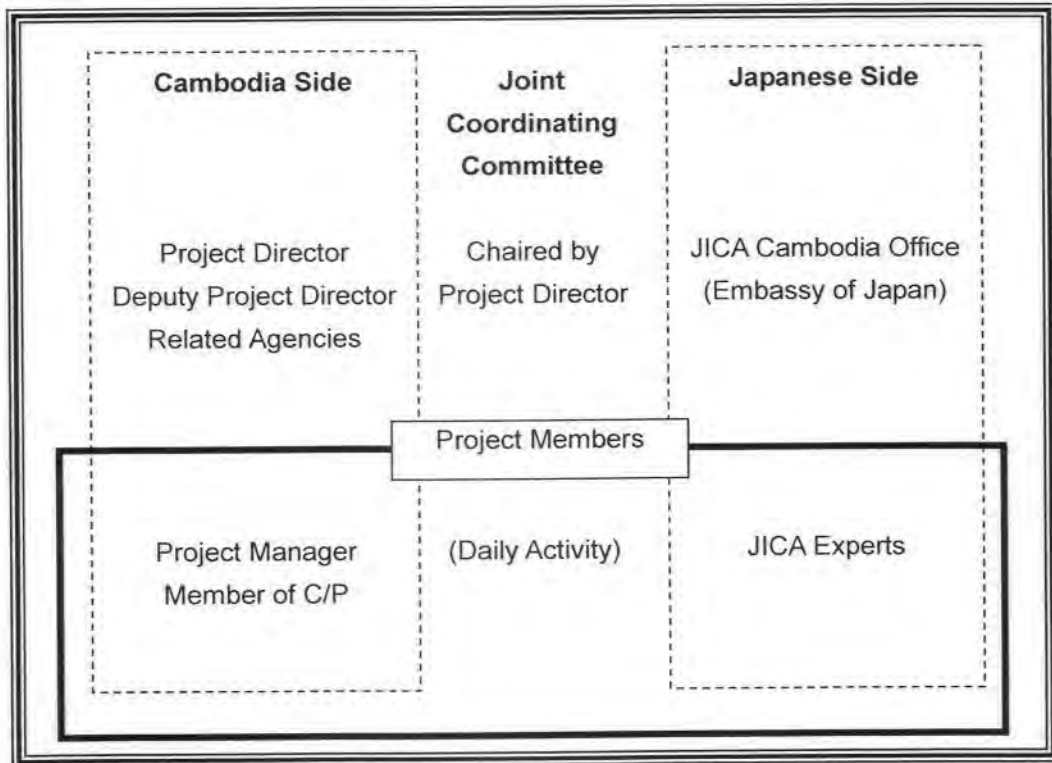
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system with GPS</p> <p>1.4 To analyze the bus operation data to review the existing operation plan</p> <p>1.5 To formulate education and training plan for reliable and safety operation (examination of necessary measures)</p> <p>1.6 To implement OJT on the reliable and safety operation</p> <p>1.7 To monitor and manage the implementation of the Action Plan developed under "Preparatory Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"</p> <p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance technologies and OJT for practice</p> <p>2.3 To monitor and manage inspection and maintenance works</p> <p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual (driving technology including theory and practice)</p> <p>3.2 To develop work manual for drivers and conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the monitoring system for the drivers and conductors by camera installed inside buses and drive-recorders etc., and implement OJT for practice</p> <p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To develop manual for existing fare and ticket management</p> <p>4.3 To manage operation cost/expenses and passenger data</p> <p>4.4 To implement market research in bus operation area</p> <p>4.5 To formulate an annual business plan including budget and accounting management</p> <p>4.6 To review and examine the bus fare system and subsidy policy</p> <p>4.7 To provide technical support on introduction of smart card system for fare collection based on Japanese experience</p> <p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To implement OJT on the technology and practice for design and planning of the bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and operation management system</p> <p>5.7 To implement training for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Public transport policy - Bus operation planning - Bus vehicle maintenance - Bus driver training - Business management - Traffic control and safety - Bus facility planning - Information and communication technology - Mobility management - Monitoring and evaluation <p><u>Training in Japan and developing countries</u></p> <p><u>equipment</u></p> <ul style="list-style-type: none"> - Information system on bus location - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p>< Cambodia side ></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<p>- Most of the counterparts assigned will be continuously responsible for the assigned work</p> <p>Pre-condition</p> <ul style="list-style-type: none"> - CBA continues to exist for certain years
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Annex 3: Project Organization Chart

The Project will be implemented by Cambodia side in cooperation with JICA. The Project Organization Chart indicating joint implementation structure is shown below:

Joint Implementation Structure of the Project



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Annex 4: Proposed Members of Joint Coordinating Committee (JCC)

The Proposed chairperson and the members of the JCC will be as follows:

- 1) Chairperson
 - Project Director
- 2) Members from the Cambodia Side
 - Deputy Project Director
 - Project Manager
 - Representative from Phnom Penh Capital Administration
 - Representative from Department of Public Works and Transport of Phnom Penh Capital Administration
 - Representative from City Bus Authority
 - Representative from Ministry of Economy and Finance
 - Personnel concerned to be decided by Cambodia Side
- 3) Members from the Japanese Side
 - Japanese Experts
 - Chief Representative, JICA Cambodia Office
 - Personnel concerned to be decided by the Japanese Side
- 4) Others
 - Officials of the Embassy of Japan may attend the meeting as observers.
 - Persons who are invited by the Chairperson may attend the meeting as observers.

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MAIN POINTS DISCUSSED

(j) Project Design Matrix (PDM) and Plan of Operation (PO)

Both sides agreed on the tentative PDM (Annex I) and PO (Annex II). The PDM and PO will be used as a management tool of the Project, and are to be flexibly revised according to the progress and the achievement of the Project, upon mutual agreement between Cambodia side and JICA by signing a Minutes of Meetings, according to the R/D.

(ii) Setting of numerical targets for Objectively Verifiable Indicators in PDM

Both sides agreed that the numerical targets for Objectively Verifiable Indicators in PDM would be set based on the result of baseline survey.

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ANNEX 5: Monitoring Sheet

- 1) Monitoring Sheet 1
- 2) Monitoring Sheet 2
- 3) Monitoring Sheet 3
- 4) Monitoring Sheet 4
- 5) Monitoring Sheet 5
- 6) Monitoring Sheet 6
- 7) Monitoring Sheet 7
- 8) Monitoring Sheet 8
- 9) Monitoring Sheet 9
- 10) Monitoring Sheet 10

Monitoring Sheet 1

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.1 (Term: Jan. 2017 – Jun. 2017)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 2nd Jan 2018

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: **3** organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Local cost: See **Annex 5** Inputs provided

<Japanese Side>

1. Dispatch of Experts: 16 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning
 - 9) IT System/Data Management
 - 10) Mobility Management
 - 11) Stakeholder Management
 - 12) Monitoring and Evaluation

- 13) Bus Operator Advisory Group
- 14) Preparatory Survey Review (Team Leader):
- 15) Preparatory Survey Review (Bus Specification and Equipment)
- 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
 Nil (as of the submission date)
3. Machinery and equipment:
 Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)
4. 1st JCC (*9th May 2017*) (Ditto)

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
5. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

List of Workshops/Technical Trainings

No.	Date	Duration	Title of Training	No. of participant	Lecturer (Expert Name)
1	20 Jan. 2017	Half Day	Work Plan Outline	10 persons	Mr. K. Takahashi

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The Project for Improvement of Public Bus Operation in Phnom Penh

2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10 persons	Mr. Koji Uzawa
3	04 March 2017	Haft Day	Bus Maintenance Plan and Budget	10 persons	Mr. Koji Uzawa
4	26 June 2017	Haft Day	Bus Maintenance Plan and Budget	11 persons	Mr. Uzawa
5	05 June 2017	Haft Day	GPS System	13 persons	Mr. Ito

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are still awaiting. No specific progress made so far as of June 2017

The activities for **Output 4 “Improvement of Business Management Capacity of CBA”** are undergoing.

1. ICT (*May 2017*):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
2. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Preparation of bus depot layout plan (May – Jun 2017)

1.3. Achievement of Output

The achievement level of each output is summarized below.

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer’s level	10%	- Data collection works conducted with the C/P’s support
- Bus operation manual is developed	20%	- Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed in May 2017 during the 1 st JCC.
- Bus operation system/model is established	40%	- BOM model prepared and tested to develop Phase 1 network and operation plan
- Bus operation is reviewed and revised based on data collected	10%	- Phase 1 operation reviewed and optimum operation plan developed

1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Objective verifiable indicator of Output 2	Achieved	Activities completed
- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer’s level	10%	- Recruitment plan discussed and prepared - A number of workshops conducted for CBA management and staffs
- Bus vehicle maintenance manual is developed	15%	- Bus operation and maintenance manual for Korean bus reviewed - Bus maintenance/budget plan prepared
- Bus inspection is routinely conducted, following maintenance manual	15%	- Bus operation and maintenance for Korean bus reviewed

1.3.3. Output 3: Establishment of Training System of Drivers/conductors and

Management System of Safety Driving and Labour

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	10%	- Data collection works conducted with the C/P's support
- Conductor work manual is developed	10%	Ditto
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	0%	Nil
- All drivers have completed the driver training and passed training	0%	Nil
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	0%	Nil
- All conductors have completed the conductor training and passed training	0%	Nil
- Safety management system is developed	10%	- Data collection works conducted with the C/P's support

1.3.4. Output 4: Improvement of Business Management Capacity of CBA

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	10%	- Data collection works conducted with the C/P's support
- Financial statements are prepared	10%	Ditto
- Operation cost model and passenger database are developed	40%	- BOM model prepared and tested to develop Phase 1 network and operation plan
- Potential needs in bus operation are assessed	0%	Nil
- Business plan is formulated and reflects on budget plan	0%	Nil
- Policies on bus fare and subsidy are drafted and agreed with PPCA	0%	Nil
- Cashless ticketing system is developed	0%	Nil

1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on	10%	- Data collection works conducted with

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The Project for Improvement of Public Bus Operation in Phnom Penh

traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level		the C/P's support
- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	0%	Nil
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	15 %	- Bus depot layout plan drafted and discussed in May 2017 during the 1 st JCC.
- Bus information and location system is developed	10 %	- ICT concept plan for bus operation and management prepared and discussed

1.4. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	0%	- Phase 1 bus network and operation plan developed and awaiting for approval by PPCA
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	40%	- Bus service rate improved from 67.5% in 2016 to 76.3.% as of Jun 2017
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	0%	Nil
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	0%	- Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 3.80/100,000km in total as of Jun 2017
- Level of perception of the bus improves and customer satisfaction of bus users improves.	0%	- Baseline survey planed with collaboration with Nagoya Univ.
- Bus operation cost covered by the revenue in 2020.	17%	- Bus revenue covers 17% of bus operation cost between Jan and Jun 2017
- Average operation speed maintained at 15km/h in 2020	NA	NA

1.5. Changes of Risks and Actions for Mitigation

Not applicable

1.6. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.7. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.8. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Not applicable

1.9. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

So far, there is no significant delay in the work schedule and any outstanding problems which hinders operation and management of the Project.

2.1. Summary

2.2. Cause

2.3. Action to be taken

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Project Monitoring Sheet I & II and Annexes

Annex 1: Project Monitoring Sheet I: PDM

Annex 2: Project Monitoring Sheet II: PO

Annex 3: PDM Ver.1.0

Annex 4: Major Issues, Challenges and Actions to be taken

Annex 5: Inputs provided

Annex 6: Working Conditions of Equipment provided

Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting (Soft Copy)

Annex 8: Monitoring Indicators (Soft Copy)

Annex 1: Project Monitoring Sheet I: PDM based on the Achievement and Remarks

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Version 1.0

Project Period: January 2017 to December 2020 (4 years)

Dated XX Oct. 2017

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption	Achievements	Remarks												
Overall Goal																	
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹ in Phnom Penh by 2023	Traffic survey, statistical data															
Project Purpose																	
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2020. • Average operation speed maintained at 15km/h in 2020. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy 	<ul style="list-style-type: none"> 1) One Kick-off meeting and one JCC meeting are held 2) Member of JCC were agreed in 1st JCC held on 9th May 2017 3) Project office set up in CBA during inception stage of the Project 4) As summarized below, meetings are good attendance for Kick-off and JCC <p><No. of attendants of meetings: Cambodian side></p> <table border="1"> <thead> <tr> <th>Meeting</th> <th>Date</th> <th>No. of Attendants</th> </tr> </thead> <tbody> <tr> <td>Kick-off</td> <td>8 Feb. 2017</td> <td>18</td> </tr> <tr> <td>1st JCC</td> <td>9 May 2017</td> <td>31</td> </tr> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <ul style="list-style-type: none"> 5) Bus operation lines increased 3 to 6 lines, following routes are operating as of ct. 2017; <ul style="list-style-type: none"> ① Route 1 ② Route 2 ③ Route 3 ④ Route 4 (4A/4B) ⑤ Route 5 ⑥ Route 7 (7A/7B) 	Meeting	Date	No. of Attendants	Kick-off	8 Feb. 2017	18	1 st JCC	9 May 2017	31				
Meeting	Date	No. of Attendants															
Kick-off	8 Feb. 2017	18															
1 st JCC	9 May 2017	31															
Outputs																	
1. Bus operation capacity of CBA is improved	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities. 	<ul style="list-style-type: none"> • Following training/ workshop held as of 20 Oct. 2017 <p><List of Training/ Workshop by the Project: For Output 1></p> <table border="1"> <thead> <tr> <th>Title</th> <th>Date</th> <th>No. of Attendants</th> </tr> </thead> <tbody> <tr> <td>Bus stop design guide</td> <td>11 Jul. 2017</td> <td>12</td> </tr> <tr> <td>Phnom Penh Bus Route Development Plan</td> <td>6 Sep. 2017</td> <td>16</td> </tr> <tr> <td>Public Transport and Traffic Management Plan and Potential Pilot Project</td> <td>8 Sep. 2017</td> <td>16</td> </tr> </tbody> </table>	Title	Date	No. of Attendants	Bus stop design guide	11 Jul. 2017	12	Phnom Penh Bus Route Development Plan	6 Sep. 2017	16	Public Transport and Traffic Management Plan and Potential Pilot Project	8 Sep. 2017	16	
Title	Date	No. of Attendants															
Bus stop design guide	11 Jul. 2017	12															
Phnom Penh Bus Route Development Plan	6 Sep. 2017	16															
Public Transport and Traffic Management Plan and Potential Pilot Project	8 Sep. 2017	16															
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	<ul style="list-style-type: none"> • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. 	<ul style="list-style-type: none"> • Maintenance Manual • Training evaluation report • Inspection report 		<ul style="list-style-type: none"> • Following training/ workshop held as of 20 Oct. 2017 <p><List of Training/ Workshop by the Project: For Output 2></p> <table border="1"> <thead> <tr> <th>Title</th> <th>Date</th> <th>No. of Attendants</th> </tr> </thead> <tbody> <tr> <td>Establishment Plan for Bus Vehicle Workshop</td> <td>24 Feb. 2017</td> <td>10</td> </tr> <tr> <td>Bus Maintenance Plan and Budget (1)</td> <td>4 Mar. 2017</td> <td>10</td> </tr> <tr> <td>Bus Maintenance Plan and Budget (2)</td> <td>26 Jun. 2017</td> <td>11</td> </tr> </tbody> </table>	Title	Date	No. of Attendants	Establishment Plan for Bus Vehicle Workshop	24 Feb. 2017	10	Bus Maintenance Plan and Budget (1)	4 Mar. 2017	10	Bus Maintenance Plan and Budget (2)	26 Jun. 2017	11	
Title	Date	No. of Attendants															
Establishment Plan for Bus Vehicle Workshop	24 Feb. 2017	10															
Bus Maintenance Plan and Budget (1)	4 Mar. 2017	10															
Bus Maintenance Plan and Budget (2)	26 Jun. 2017	11															
3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA	<ul style="list-style-type: none"> • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have 	<ul style="list-style-type: none"> • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report 		<ul style="list-style-type: none"> • Following training/ workshop held as of 20 Oct. 2017 <p><List of Training/ Workshop by the Project: For Output 3></p> <table border="1"> <thead> <tr> <th>Title</th> <th>Date</th> <th>No. of Attendants</th> </tr> </thead> <tbody> <tr> <td>Introduction of bus license & others</td> <td>11 Jul. 2017</td> <td>12</td> </tr> </tbody> </table>	Title	Date	No. of Attendants	Introduction of bus license & others	11 Jul. 2017	12							
Title	Date	No. of Attendants															
Introduction of bus license & others	11 Jul. 2017	12															

	<ul style="list-style-type: none"> completed the conductor training and passed training Safety management system is developed 													
4. CBA's business management capacity is improved	<ul style="list-style-type: none"> Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)¹⁶ is improved to trainer's level Financial statements are prepared Operation cost model and passenger database are developed Potential needs in bus operation are assessed Business plan is formulated and reflects on budget plan Policies on bus fare and subsidy are drafted and agreed with PPCA Cashless ticketing system is developed 	<ul style="list-style-type: none"> Training evaluation report Financial statements Manual Study report Business plan Agreed policy Ticketing system 		<ul style="list-style-type: none"> Following training/ workshop held as of 20 Oct. 2017 <p><List of Training/ Workshop by the Project: For Output 4></p> <table border="1"> <thead> <tr> <th>Title</th> <th>Date</th> <th>No. of Attendants</th> </tr> </thead> <tbody> <tr> <td>Workshop for the Accounting Office in CBA</td> <td>8 Sep. 2017</td> <td>16</td> </tr> <tr> <td>Work Shop Challenges to establish a sound business management system in CBA</td> <td>12 Sep. 2017</td> <td>13</td> </tr> </tbody> </table>	Title	Date	No. of Attendants	Workshop for the Accounting Office in CBA	8 Sep. 2017	16	Work Shop Challenges to establish a sound business management system in CBA	12 Sep. 2017	13	
Title	Date	No. of Attendants												
Workshop for the Accounting Office in CBA	8 Sep. 2017	16												
Work Shop Challenges to establish a sound business management system in CBA	12 Sep. 2017	13												
5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved	<ul style="list-style-type: none"> Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)¹⁷ is improved to trainer's level A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared Evaluation of the pilot projects and mobility management is conducted Bus related facilities are developed Bus information and location system is developed 	<ul style="list-style-type: none"> Training evaluation report Improvement strategy/plan Pilot project and mobility management evaluation report Inventory of bus related facilities Bus information and location system 		<ul style="list-style-type: none"> Following training/ workshop held as of 20 Oct. 2017 <p><List of Training/ Workshop by the Project: For Output 5></p> <table border="1"> <thead> <tr> <th>Title</th> <th>Date</th> <th>No. of Attendants</th> </tr> </thead> <tbody> <tr> <td>GPS System</td> <td>5 Jun. 2017</td> <td>13</td> </tr> </tbody> </table>	Title	Date	No. of Attendants	GPS System	5 Jun. 2017	13				
Title	Date	No. of Attendants												
GPS System	5 Jun. 2017	13												

Annex 3: Project Design Matrix (PDM) Ver_0Project Title: The Project for Improvement of Public Bus Operation in Phnom PenhProject Period: January 2017 to December 2020 (4 years)Project Area: Phnom Penh, CambodiaTarget Group: People in Phnom PenhCounterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PCCA), PPCA**Version 0.0****Dated 31/Dec./ 2017**

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	· Modal share by public transport is increased by ### % in Phnom Penh	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> · CBA keeps bus operation on schedule · Bus vehicle is maintained periodically · Attitude of the drivers and conductors towards the bus users is improved · The number of traffic accidents by bus is decreased · Financial health of CBA is improved · Traffic regulations are introduced on the bus operation 	<ul style="list-style-type: none"> · Record of the operation · Record of the maintenance · Interview · Accident report · Profitability · Decision/Degree 	<ul style="list-style-type: none"> · Policy on public transportation remains as the priority policy · People's behaviors on public transport will be changed.
Outputs			
1. Bus operation capacity of CBA is improved	1.1 Level of skills and knowledge on bus operation of CBA is improved 1.2 Bus operation manual is developed 1.3 Bus operation system is established 1.4 Bus operation is reviewed based on data 1.5 Basic plan of reliable and safety operation is formulated 1.6 Reliable and safety operation is improved 1.7 All the activities in the Action Plan are completed	<ul style="list-style-type: none"> · Training evaluation report · Manual · System · New bus operation plan · Training report · Evaluation report on the operation · Progress report 	<ul style="list-style-type: none"> · CBA is not privatized
2. Maintenance and inspection capacity on bus vehicles of CBA is implemented	2.1 Bus vehicle maintenance manual is developed 2.2 CBA's proficiency in the bus vehicle maintenance technology is improved 2.3 Reliability of the maintenance work is improved, and the number of breakdown is decreased	<ul style="list-style-type: none"> · Manual · Skill test · Inspection report 	
3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA	3.1 Bus driver training manual is developed 3.2 Conductor work manual is developed 3.3 ## trainers have completed the driver training 3.4 At least ##% of drivers have passed training 3.5 ## trainers have completed the conductor training 3.6 At least ## % of conductors have passed training 3.7 Performance evaluation of the drivers and conductors is conducted	<ul style="list-style-type: none"> · Manual · Manual · Result of skill test · Training report · Result of skill test · Training report · Evaluation report 	
4. CBA's business management capacity is improved	4.1 Financial statements are prepared 4.2 Ticket management manual is developed 4.3 Operation cost and passenger database are built 4.4 Potential needs in bus operation are assessed 4.5 Annual business plan is formulated and reflects on budget plan 4.6 Report of the new policies on the bus fare and subsidy is prepared 4.7 Road map and technological requirement for introducing smart card system for fare collection are prepared	<ul style="list-style-type: none"> · Financial statements · Manual · CBA account document/ database · Research report · Annual business plan · Study report · Roadmap, study report 	
5. Capacity of CBA and DPWT/PCCA on policy planning for the public transport priority measures is improved	5.1 Level of skills and knowledge on the traffic control and management is improved 5.2 Report of the traffic management and safety measures is prepared 5.3 Para-transit improvement plan on the bus operation routes is formulated 5.4 Evaluation of the pilot projects and social experiments is conducted 5.5 Technical design documents for the bus related facilities are prepared 5.6 Technical examination report for bus information and operation management system is prepared 5.7 At least ## participants of mobility management activities come to take public transport	<ul style="list-style-type: none"> · Training text · Study report · Improvement plan · Pilot project evaluation report · Technical design document · Technical report for the system · Evaluation report on mobility management activities 	

Activities	Input	Pre-Condition
<p>1. <u>Improvement of Bus Operation Capacity of CBA</u></p> <p>1.1 To implement training for bus operation</p> <p>1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice</p> <p>1.3 To establish bus operation system with GPS</p> <p>1.4 To analyze the bus operation data to review the existing operation plan</p> <p>1.5 To formulate education and training plan for reliable and safety operation (examination of necessary measures)</p> <p>1.6 To implement OJT on the reliable and safety operation</p> <p>1.7 To monitor and manage the implementation of the Action Plan developed under "Preparatory Survey for the Project for Improvement of Transportation Capacity for Public Bus in Phnom Penh"</p>	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Public transport policy - Bus operation planning - Bus vehicle maintenance - Bus driver training - Business management - Traffic control and safety - Bus facility planning - Information and communication technology - Mobility management - Monitoring and evaluation 	<p>· Most of the counterparts assigned will be continuously responsible for the assigned work</p>
<p>2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u></p> <p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance technologies and OJT for practice</p> <p>2.3 To monitor and manage inspection and maintenance works</p>	<p><u>Training in Japan and developing countries</u></p>	
<p>3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u></p> <p>3.1 To develop driver training manual (driving technology including theory and practice)</p> <p>3.2 To develop work manual for drivers and conductors</p> <p>3.3 To implement trainings for trainers of drivers</p> <p>3.4 To implement series of training for both existing and newly-employed drivers by the trainers</p> <p>3.5 To implement trainings for trainers of conductors</p> <p>3.6 To implement series of training for conductors by the trainers</p> <p>3.7 To establish the monitoring system for the drivers and conductors by camera installed inside buses and drive-recorders etc., and implement OJT for practice</p>	<p><u>equipment</u></p> <ul style="list-style-type: none"> - Information system on bus location - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p>	<p>Pre-condition</p> <p>· CBA continues to exist for certain years</p>
<p>4. <u>Improvement of Business Management Capacity of CBA</u></p> <p>4.1 To implement training for financial accounting and management accounting</p> <p>4.2 To develop manual for existing fare and ticket management</p> <p>4.3 To manage operation cost/expenses and passenger data</p> <p>4.4 To implement market research in bus operation area</p> <p>4.5 To formulate an annual business plan including budget and accounting management</p> <p>4.6 To review and examine the bus fare system and subsidy policy</p> <p>4.7 To provide technical support on introduction of smart card system for fare collection based on Japanese experience</p>	<p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	
<p>5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u></p> <p>5.1 To implement training for traffic management</p> <p>5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal</p> <p>5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes</p> <p>5.4 To implement pilot projects and social experiments for the proposed traffic management measures</p> <p>5.5 To implement OJT on the technology and practice for design and planning of the bus-related facilities such as bus depots, terminals and bus-stops, etc.</p> <p>5.6 To introduce bus information and operation management system</p> <p>5.7 To implement training for mobility management to promote modal shift</p> <p>5.8 To implement pilot projects for mobility management</p>		

Annex 1: Project Design Matrix (PDM) Ver_1.0

Project Title: The Project for Improvement of Public Bus Operation in Phnom Penh

Project Period: January 2017 to December 2020 (4 years)

Project Area: Phnom Penh, Cambodia

Target Group: People in Phnom Penh

Counterpart: Phnom Penh City Bus Authority (CBA), Department of Public Works and Transport in Phnom Penh Capital Administration, (DPWT/PPCA), PPCA

Narrative Summary	Objective Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal			
Ridership on the public transport (city bus) in Phnom Penh is promoted	• Modal share by bus transport increases from 0.2% in 2017 to 2% ¹ in Phnom Penh by 2023	Traffic survey, statistical data	
Project Purpose			
Bus operation management capacity in Phnom Penh is improved	<ul style="list-style-type: none"> • Bus operation lines increases from 3 lines in 2017 to 10 lines in 2020. • Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020 • Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased • The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. • Level of perception of the bus improves and customer satisfaction of bus users improves • Bus operation cost covered by the revenue in 2020. • Average operation speed maintained at 15km/h in 2020. 	<ul style="list-style-type: none"> • Record of the operation • Record of the maintenance • Accident report • Survey report • Financial report 	<ul style="list-style-type: none"> • Policy on public transportation remains as the priority policy
Outputs			
<ol style="list-style-type: none"> 1. Bus operation capacity of CBA is improved 2. Maintenance and inspection capacity on bus vehicles of CBA is implemented 3. Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA 4. CBA's business management capacity is improved 5. Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved 	<ul style="list-style-type: none"> • Level of skills and knowledge on bus operation of three (3) key CBA staff(s)² is improved to trainer's level • Bus operation manual is developed • Bus operation system/model is established • Bus operation is reviewed and revised based on data collected • Bus safety guideline is developed • Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s)³ is improved to trainer's level • Bus vehicle maintenance manual is developed • Bus inspection is routinely conducted, following maintenance manual. • Bus driver training manual is developed • Conductor work manual is developed • Level of skills and knowledge on bus driving of 20 key CBA staff(s)⁴ is improved to trainer's level • All drivers have completed the driver training and passed training • Level of knowledge on bus conductor of 20 key CBA staff(s)⁵ is improved to trainer's level • All conductors have completed the conductor training and passed training • Safety management system is developed • Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s)⁶ is improved to trainer's level • Financial statements are prepared • Operation cost model and passenger database are developed • Potential needs in bus operation are assessed • Business plan is formulated and reflects on budget plan • Policies on bus fare and subsidy are drafted and agreed with PPCA • Cashless ticketing system is developed • Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s)⁷ is improved to trainer's level • A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared • Evaluation of the pilot projects and mobility management is conducted • Bus related facilities are developed 	<ul style="list-style-type: none"> • Training evaluation report • Operation Manual • Operation System/Model • Revised bus operation plan • Safety Guideline • Maintenance Manual • Training evaluation report • Inspection report • Driver Training Manual • Conductor Work Manual • Training evaluation report • Safety management system • Complaint report • Training evaluation report • Financial statements • Manual • Study report • Business plan • Agreed policy • Ticketing system • Training evaluation report • Improvement strategy/plan • Pilot project and mobility management evaluation report • Inventory of bus related facilities • Bus information and location system 	<ul style="list-style-type: none"> • CBA/DPWT/PPCA maintains its duties and responsibilities.

	<ul style="list-style-type: none"> · Bus information and location system is developed 		
Activities	Input	Pre-Condition	
<ol style="list-style-type: none"> 1. <u>Improvement of Bus Operation Capacity of CBA</u> <ol style="list-style-type: none"> 1.1 To implement training for bus operation 1.2 To develop bus operation manual and implement On-the-Job Training (OJT) for practice 1.3 To establish bus operation system and develop the operation plan 1.4 To analyze the bus operation data and improve the operation plan 1.5 To develop bus safety operation guideline and implement OJT for practice 2. <u>Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA</u> <ol style="list-style-type: none"> 2.1 To develop bus vehicle inspection and maintenance manual 2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice 2.3 To monitor and evaluate inspection and maintenance works 3. <u>Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor</u> <ol style="list-style-type: none"> 3.1 To develop driver training manual 3.2 To develop work manual for conductors 3.3 To implement trainings for trainers of drivers 3.4 To implement series of training for both existing and newly-employed drivers by the trainers 3.5 To implement trainings for trainers of conductors 3.6 To implement series of training for conductors by the trainers 3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice 4. <u>Improvement of Business Management Capacity of CBA</u> <ol style="list-style-type: none"> 4.1 To implement training for financial accounting and management accounting 4.2 To collect and analyze operation cost/expenses and passenger data 4.3 To implement market research in bus operation area 4.4 To formulate a business plan including budget and accounting management 4.5 To review and examine the bus fare system and subsidy policy 4.6 To provide technical support for introduction of cashless ticketing system for fare collection 5. <u>Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA</u> <ol style="list-style-type: none"> 5.1 To implement training for traffic management 5.2 To examine traffic management and safety measures on the bus routes including parking management and bus priority lane/signal 5.3 To develop para-transit system (Tuk-Tuk, Motodop) improvement strategies based on the bus operation routes 5.4 To implement pilot projects and social experiments for the proposed traffic management measures 5.5 To provide technical support on development of bus-related facilities such as bus depots, terminals and bus-stops, etc. 5.6 To introduce bus information and location system 5.7 To implement workshops for mobility management to promote modal shift 5.8 To implement pilot projects for mobility management 	<p>Input (Japanese side)</p> <p><u>Experts</u></p> <ul style="list-style-type: none"> - Chief Advisor/ Public Transport Policy - Deputy Chief Advisor/ Public Transport Policy (2) - Bus Operation Planning - Bus Vehicle Maintenance - Bus Driver Training - Business Management - Traffic Control and Safety - Bus Facility Planning - IT System/Data Management - Mobility Management - Stakeholder Management - Monitoring and Evaluation - Bus Operator Advisory Group - Preparatory Survey Review (Team Leader) - Preparatory Survey Review (Bus Specification and Equipment) - Preparatory Survey Review (Procurement Plan) <p><u>Training in Japan and third countries</u></p> <p><u>Equipment</u></p> <ul style="list-style-type: none"> - Bus location system - Bus safety management system - Passenger monitoring system - Alcohol detector <p><u>Seminars/Workshops</u></p> <p><u>Implementation of social experiments and pilot projects for traffic management and mobility management</u></p> <p><Cambodia side></p> <p><u>Assign sufficient number of counterparts</u></p> <p><u>Provision of office space</u></p> <p><u>Civil works for the installation of equipment introduced in the project</u></p>	<ul style="list-style-type: none"> · Most of the counterparts assigned will be continuously responsible for the assigned work 	

Note 1: Under the assumption that 180 buses operate with occupancy rate at 50% of seat capacity on 10 PPCA/CBA's proposed bus lines.

Note 2: Deputy Governor of CBA, Chief of Technical Office and one (1) selected senior staff of Technical Office.

Note 3: Heads of Routine Inspection Group, Break Maintenance Group, Crutch Maintenance Group, Tire Maintenance Group, Painting and Body Works Group

Note 4: Two (2) Chiefs of Driver Group per route (20 chiefs for 10 routes)

Note 5: Two (2) Chiefs of Conductor Group per route (20 chiefs for 10 routes)

Note 6: Deputy Governor of CBA, Chief of Accounting Office and one (1) selected senior staff of Accounting Office of CBA

Note 7: One (1) selected Head/Chief of CBA (Technical Office), PPCA (Department of Urban Management) and DPWT (Division of Road Transport)

Annex 5 Inputs Provided

5-1. Dispatch of Experts (as of 16th Oct. 2017)

No.	Name	Assignment	Duration of dispatch
1	Kiminari Takahashi	Chief Advisor/ Public Transport Policy	15 Jan. – 12 Feb. 2017 (29 Days) 26 Apr. – 17 May. 2017 (22 Days) 28 Jun. – 16 July 2017 (19 Days) 21 Aug. – 03 Sept. 2017 (14 Days)
2	Kov Monyrath	Deputy Chief Advisor/ Public Transport Policy(2)	31 Jan. – 12 Mar. 2017 (41 Days) 06 May – 07 June 2017 (33 Days) 27 June – 05 July 2017 (9 Days)
3	Frits Olyslagers	Bus Operation Planning	22 Jan. – 11 Feb. 2017 (21 Days) 30 Apr. – 10 May 2017 (11 Days) 16 May – 23 May 2017 (8 Days) 15 Oct. – 03 Nov. 2017 (20 Days) 19 Nov. – 15 Dec. 2017 (27 Days)
4	Koji Uzawa	Bus Vehicle Maintenance	25 Jan. – 10 Mar. 2017 (45 Days) 19 Jun. – 04 July 2017 (16 Days) 10 Oct. – 08 Nov. 2017 (30 Days)
5	Minoru Murata	Bus Driver Training	29 June – 02 July 2017 (14 Days)
6	Natsuki Shimegi	Business Management	20 Aug. – 13 Sept. 2017 (25 Days)
7	Shuuichi Yashiro	Traffic Control and Safety	16 Aug. – 10 Sept. 2017 (26 Days)
8	Hiroyuki Yamashita	Bus Facility Planning	31 Jan. – 13 Feb. 2017 (14 Days) 22 May – 09 June 2017 (19 Days) 11 Oct. – 20 Oct. 2017 (10 Days)
9	Takayoshi Ito	IT System/Data Management	15 May – 7 June 2017 (24 Days)
10	Toshiaki Takeda	Mobility Management	08 Feb. – 21 Feb. 2017 (14 Days) 11 May – 25 May 2017 (15 Days)
11	Mihoko Ogasawara	Stakeholder Management	
12	Kayoko Miyao	Monitoring and Evaluation	09 Oct. – 28 Oct. 2017 (20 days)
13	Dr. Masaru Yajima	Bus Operator Advisory Group (1)	30 June – 01 July 2017 (2 days)
14	Dr. Kunihiro Sakamoto	Bus Operator Advisory Group (2)	30 June – 01 July 2017 (2 days)
15	Tomohiko Nakamura	Preparatory Survey Review (Team Leader)	02 Apr. – 09 Apr. 2017 (8days)
16	Kobayashi Kiyohito	Preparatory Survey Review (Bus Specification and Equipment)	02 Apr. – 09 Apr. 2017 (8days)
17	Yoshimi Takayuki	Bus Facility Planning (2)	29 May – 02 June 2017 (5days)

5-2. List of Counterpart (as of 16th Oct, 2017)

FY	Name of C/P Current members	Profession/Institution/ Organization	Member	Name of C/P Current members	Duration of Engage
	Project Director	Deputy Governor, PPCA	JCC		
	Deputy Project Director	Deputy Director, DPWT/PPCA	JCC		
	Project Manager	Governor, CBA	JCC		
	PPCA	Director, Direction of Urban Management	JCC		
	DPWT/PPCA	Advisor and Other Management Staffs (in Total 4 staffs)	JCC		
	City Bus Authority	Director, Department of International Cooperation	JCC		
	MEF	Department of Public Transport (to be established)	JCC		
	MPWT	Department of Public Transport (to be established)	JCC		
	Personnel Concerned to be decided by Cambodia side	Khan Authorities, Traffic Police, other relevant Departments of PPCA	JCC		

List of Counterpart were Replaced (if applicable)

None

5-3. Equipment Provided (as of 16th Oct, 2017)

1) List of equipment

No.	Arrival	Name of equipment	Model	Maker	Price (USD)	No. Unit	Section	Place	Procurement	Purpose	Status/Condition
1	2017/1/20	Multi-purpose photo copier	Canon IR 2545	Canon	4,524	1		CBA	By the Project	Project use	Working
2	2017/1/17	Projector	Epson LCD Project EB-W04	Epson	1225.50	1		CBA	By the Project	Project use	Working
3	2017/1/17	Laptop PC	HP Note book 384 G3	HP	650	1		CBA	By the Project	Project use	Working
4	2017/1/19	UPS	UPS A600-BX	Emerson	90	2		CBA	By the Project	Project use	Working
5	2017/1/13	Laptop PC	HP Lap top Bro Book 440	HP	650	1		CBA	By the Project	Project use	Working
6	2017/2/22	Printer	HP Officejet 7110	HP	190	1		CBA	By the Project	Project use	Working
7	2017	Logitech R400 Wireless Presenter	---	Logitech	45	1		CBA	By the Project	Project use	Working
8											
9											
10											
11											

5-4. Seminar/Training/Workshop/Meetings (as of 16th Oct, 2017)

Meetings

Year	Meeting name	Date	Duration	No. of participants	Target	Remarks
2017	Keck off meeting	8 th February, 2017	1 day	18	Introduction of the Project Presentation of Draft Work Plan Confirmation of Agreements in Record of Discussion	
2017	1 st Joint Coordinating Committee Meeting	9 th May, 2017	1 day	31	Confirmation of minutes of Kick-off meeting and matters arising and action taken Presentation of the Work Plan Presentation of progress of the project	

5-5. Local cost by Japanese/Tanzanian side (as of 16th October, 2017)

1) Bearing cost by Japanese side

Year	Item	Amount (US\$)
2017	Multi-purpose photo copier	See Section 5.3 in this file
	Projector	See Section 5.3 in this file
	Laptop PC (2 unit)	See Section 5.3 in this file
	UPS	See Section 5.3 in this file
	Printer (Inkjet)	See Section 5.3 in this file
	Logitech R400 Wireless Presenter	See Section 5.3 in this file

2) Bearing cost by Cambodian side

Ye	I	Amount (USD)
2017	Office space, office furniture, water and electricity bill	

5-6. Training in Japan (as of 30 Oct. 2017)

Name	Institution	Training course	Duration	Date
None				

5-7. Training/ Workshop in Cambodia (as of 16 Oct., 2017)

No.	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)
1	20 Jan. 2017	Half Day	Work Plan Outline	10 persons	Mr. K. Takahashi
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10 persons	Mr. Koji Uzawa
3	04 March 2017	Haft Day	Bus Maintenance Plan and Budget	10 persons	Mr. Koji Uzawa
4	26 June 2017	Haft Day	Bus Maintenance Plan and Budget	11 persons	Mr. Uzawa
5	05 June 2017	Haft Day	GPS System	13 persons	Mr. Ito
6	11 July 2017	Haft Day	Introduction Bus License & Others	12 persons	Mr. M. Murata
7	11 July 2017	Haft Day	Bus Stop Design Gide	12 persons	Mr. K. Takahashi
8	11 July 2017	Haft Day	Phnom Penh Bus Route Development Plan	12 persons	Mr. K. Takahashi
9	06 Sept. 2017	Haft Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16 persons	Mr. Yashiro
10	08 Sept. 2017	Haft Day	1 st Workshop for the Accounting Office in CBA	16 persons	Mr. Shimegi
11	12 Sept. 2017	Haft Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13 persons	Mr. Shigemi

5-8. Training in Overseas (as of 30 Oct. 2017)

Date	Duration	Training	No of Participants
None			

5-9. List of Outputs prepared by the Project

No.	Title	Language	Date of preparation
1	第1次ベースライン調査概要報告書	Japanese	Mar. 2017
2	Draft Review report on "Preparatory Survey report on the project for improvement of transportation capacity of public bus in Phnom Penh"	English	Apr. 2017

Annex 6 Working Conditions of Equipment Provided

No	Regions	S/No	Place	Equipment							Reasons	
				Multi-purpose photo copier	Projector	Laptop PC (1) HP Note book 384 G3	UPS	Laptop PC (2) HP Laptop Bro Book 440	Printer (Inkjet)	Wireless Presenter		
1	Phnom Penh	1	CBA	Working	Working	Working	Working	Working	Working	Working	Working	

Monitoring Sheet 2

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.2 (Term: Jan. 2017 – Dec. 2017)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 2nd Jan 2018

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: **3** organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Local cost: See **Annex 5** Inputs provided

<Japanese Side>

1. Dispatch of Experts: 16 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning
 - 9) IT System/Data Management
 - 10) Mobility Management
 - 11) Stakeholder Management
 - 12) Monitoring and Evaluation

- 13) Bus Operator Advisory Group
- 14) Preparatory Survey Review (Team Leader):
- 15) Preparatory Survey Review (Bus Specification and Equipment)
- 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
Nil (as of the submission date)
3. Machinery and equipment:
Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)
4. 1st JCC (*9th May 2017*) (Ditto)

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017*)
8. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

PM Form 3-1 Monitoring Sheet Summary

The Project for Improvement of Public Bus Operation in Phnom Penh

List of Workshops/Technical Trainings

No.	Date	Duration	Title of Training	No. of participant	Lecturer (Expert Name)
1	20 Jan. 2017	Half Day	Work Plan Outline	10 persons	Mr. K. Takahashi
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10 persons	Mr. Koji Uzawa
3	04 March 2017	Haft Day	Bus Maintenance Plan and Budget	10 persons	Mr. Koji Uzawa
4	26 June 2017	Haft Day	Bus Maintenance Plan and Budget	11 persons	Mr. Uzawa
5	05 June 2017	Haft Day	GPS System	13 persons	Mr. Ito
6	11 July 2017	Haft Day	Introduction Bus License & Others	12 persons	Mr. M. Murata
7	11 July 2017	Haft Day	Bus Stop Design Gide	12 persons	Mr. K. Takahashi
8	11 July 2017	Haft Day	Phnom Penh Bus Route Development Plan	12 persons	Mr. K. Takahashi
9	06 Sept. 2017	Haft Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16 persons	Mr. Yashiro
10	08 Sept. 2017	Haft Day	1 st Workshop for the Accounting Office in CBA	16 persons	Mr. Shimegi
11	12 Sept. 2017	Haft Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13 persons	Mr. Shigemi
12	18 Oct. 2017	Haft Day	Detailed design of Bus depot	9 Persons	Mr. Yamashita
13	31 Oct. 2017	Haft Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15 Persons	Mr. Frits
14	07 Nov. 2017	Half Day	Bus Maintenance Plan and Budget	13 Persons	Mr. Uzawa
15	22 Nov. 2017	Half Day	Implement Bus Operation Management System	14 Persons	Mr. Ito
16	07 Dec. 2017	Half Day	Second Workshop of Cash Flow Statement	23 Persons	Mr. Mr. Shimige
17	13 Dec. 2017	Half Day	Mobility Management	21 Persons	Mr. Takeda

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The Project for Improvement of Public Bus Operation in Phnom Penh

18	15 Dec. 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16 Persons	Mr. Frits
20	13 Dec. 2017	Half Day	Bus Stop Design Guide	18 Persons	Mr. Yamashita
21	18 Dec. 2017	Half Day	Bus Driving Training	14 Persons	Mr. Murata
22	18 Dec. 2017	Half Day	3 rd Workshop for the management and the accounting	12 Persons	Mr. Shimegi
23	21 Dec. 2017	Half Day	Bus Fare and Economy	20 Persons	Mr. Shimegi

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017*)
8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017*)
9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
10. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers

- 3) On-board survey on drivers/conductors and driving skills
- 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus (*July and Nov 2017*)
3. Study of safety management system and drivers/conductors training in Japan (*July 2017*)
4. Participate in intensive training course organized by Eagle Bus Corp. (*Nov 2017*)
5. Review of recruitment/training for bus drivers/conductors for Phase 1 (*Nov 2017*)
6. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 4 “Improvement of Business Management Capacity of CBA”** are undergoing.

1. Baseline survey (*Sep and Dec 2017*)
 - 1) Data collection of CBA’s financial statement
 - 2) Data collection of PPCA’s financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA’s accounting office
 - 5) Input data collection for BOM model
2. Bus business management (*Sep to Dec 2017*):
 - 1) Data analysis of CBA and PPCA’s financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
3. ICT (*May and Nov 2017*):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system
4. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (*July and Aug 2017*)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (*July 2017*)
3. Review of 2014 Urban Transport Master Plan (*July 2017*)
4. Preparation of a concept plan of public transport priority measures (*July 2017*)

5. Preparation of a concept mobility management plan (*Dec 2017*)
6. Preparation of bus depot layout plan (*May – Aug 2017*)
7. Approval of bus depot design by Governor (*Dec 2017*)
8. Preparation of bus color design (*Dec 2017*)
9. Preparation of Bus Facility Planning and Design Guideline (*Dec 2017 – onward*)
10. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

1.3. Achievement of Output

The achievement level of each output is summarized below.

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer's level	30%	- A number of workshops/seminars conducted for CBA management and staffs
- Bus operation manual is developed	40%	- Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017
- Bus operation system/model is established	70%	- BOM model prepared and tested to develop Phase 1 network and operation plan
- Bus operation is reviewed and revised based on data collected	30%	- Phase 1 operation reviewed and optimum operation plan developed

1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Objective verifiable indicator of Output 2	Achieved	Activities completed
- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level	20%	- Recruitment plan prepared and approved by PPCA - CBA in progress to recruit maintenance mechanics - A number of workshops conducted for CBA management and staffs
- Bus vehicle maintenance manual is developed	20%	- Bus operation and maintenance manual for Korean and Chinese bus

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The Project for Improvement of Public Bus Operation in Phnom Penh

		reviewed - Operation and maintenance manual to be prepared by bus fleet suppliers - Bus maintenance plan prepared
- Bus inspection is routinely conducted, following maintenance manual	10%	- Bus operation and maintenance for Korean and Chinese bus reviewed

1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labour

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	20%	- Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - A number of workshops conducted for CBA management and staffs
- Conductor work manual is developed	20%	- Ditto
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	20%	- Ditto
- All drivers have completed the driver training and passed training	0%	Nil
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	20%	- Ditto
- All conductors have completed the conductor training and passed training	0%	Nil
- Safety management system is developed	10%	- Traffic accident data collected and analyzed

1.3.4. Output 4: Improvement of Business Management Capacity of CBA

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	20%	- A number of workshops conducted for CBA management and staffs
- Financial statements are prepared	80%	- Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement
- Operation cost model and passenger database are developed	50%	- BOM model prepared and tested to develop Phase 1 network and operation

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The Project for Improvement of Public Bus Operation in Phnom Penh

		plan
- Potential needs in bus operation are assessed	30%	- Bus passenger and non bus passenger interview survey conducted - Needs in bus operation assessed
- Business plan is formulated and reflects on budget plan	20%	- Business plan of other public enterprises collected and analyzed
- Policies on bus fare and subsidy are drafted and agreed with PPCA	20%	- BOM model developed
- Cashless ticketing system is developed	30%	- CBA to introduce Wing's NFC card - CBA to introduce ACLEDA's QR code - JICA to introduce smart phone based ticketing system

1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level	20%	- A number of workshops conducted for CBA and DPWT
- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	10%	- Concept plan for public transport priority measures and mobility management scheme prepared
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	60%	- Bus depot layout plan prepared and approved by PPCA - Construction of bus depot undergoing - Bus facilities for Phase 1 designed and installed
- Bus information and location system is developed	20%	- Bidding documents for bus operation and management system prepared

1.4. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	80%	- Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 Lines by Nov 2017

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The Project for Improvement of Public Bus Operation in Phnom Penh

- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	55%	- Bus service rate improved from 67.5% in 2016 to 80.0% as of Dec 2017
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	10%	- Bus fleet maintenance reviewed
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	10%	- Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 1.46/100,000km (CBA drivers as first party) (3.10/100,000km in total) as of Dec 2017
- Level of perception of the bus improves and customer satisfaction of bus users improves.	10%	- Bus passenger and non bus passenger interview survey conducted and baseline collected to monitor the performance
- Bus operation cost covered by the revenue in 2020.	22%	- Bus revenue covers 22% of bus operation cost between Jan and Aug 2017
- Average operation speed maintained at 15km/h in 2020	40%	- Average operation speed maintained at 14.5km/h as of Dec 2017

1.5. Changes of Risks and Actions for Mitigation

Not applicable

1.6. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.7. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.8. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Not applicable

1.9. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

So far, there is no significant delay in the work schedule and any outstanding problems which hinders operation and management of the Project.

2.1. Summary

2.2. Cause

2.3. Action to be taken

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 3

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Vol.3 (Term: Jan 2018 – May 2018)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 7th June 2018

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: **3** organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops, ticketing system
5. Local cost: See **Annex 5: Inputs provided**.

<Japanese Side>

1. Dispatch of Experts: 16 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning
 - 9) IT System/Data Management
 - 10) Mobility Management
 - 11) Stakeholder Management

- 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was carried out from 25th Feb to 2nd March 2018 in Malaysia and Singapore. The Study Trip Report is attached in **Annex 8: Reports**).
3. Machinery and equipment:
Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (Jan 2017)
2. Preparation and submission of Work Plan (May 2017)
3. Kick-off meeting (8th Feb 2017) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)
4. 1st JCC (9th May 2017) (Ditto)
5. 2nd JCC (scheduled on 8th June 2018)

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- | | |
|----------|--|
| Output 1 | Bus operation capacity of CBA is improved |
| Output 2 | Maintenance and inspection capacity on bus vehicles of CBA is implemented |
| Output 3 | Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA |
| Output 4 | CBA's business management capacity is improved |
| Output 5 | Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved |

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The Project for Improvement of Public Bus Operation in Phnom Penh

List of Workshops/Technical Trainings

No	Date	Duration	Title of Training	No. of participants	Lecturer (Expert Name)	Related output
1	20 Jan. 2017	Half Day	Work Plan Outline	10	Mr. K. Takahashi	all
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	Mr. Koji Uzawa	2
3	04 March 2017	Half Day	Bus Maintenance Plan and Budget	10	Mr. Koji Uzawa	2
4	26 June 2017	Half Day	Bus Maintenance Plan and Budget	11	Mr. Uzawa	2
5	05 June 2017	Half Day	GPS System	13	Mr. Ito	5
6	11 July 2017	Half Day	Introduction Bus License & Others	12	Mr. M. Murata	3
7	11 July 2017	Half Day	Bus Stop Design Guide	12	Mr. K. Takahashi	1
8	11 July 2017	Half Day	Phnom Penh Bus Route Development Plan	12	Mr. K. Takahashi	1
9	06 Sept. 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	Mr. Yashiro	5
10	08 Sept. 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	Mr. Shimegi	4
11	12 Sept. 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	Mr. Shigemi	4
12	18 Oct. 2017	Half Day	Matters agreed between CBA, JICA expert and CJEC	9	Mr. Yamashita	5
13	31 Oct. 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	Mr. Frits	1
14	07 Nov. 2017	Half Day	Bus Maintenance Plan and Budget	13	Mr. Uzawa	2
15	22 Nov. 2017	Half Day	Implement Bus Operation Management System	14	Mr. Ito	5

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16	07 Dec. 2017	Half Day	Second Workshop of Cash Flow Statement	23	Mr. Mr. Shimige	4
17	13 Dec. 2017	Half Day	Mobility Management	21	Mr. Takeda	5
18	15 Dec. 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	Mr. Frits	1
20	13 Dec. 2017	Half Day	Bus Stop Design Guide	18	Mr. Yamashita	5
21	18 Dec. 2017	Half Day	Bus Driving Training	14	Mr. Murata	3
22	18 Dec. 2017	Half Day	3 rd Workshop for the management and the accounting	12	Mr. Shimegi	4
23	21 Dec. 2017	Half Day	Bus Fare and Economy	20	Mr. Shimegi	4
24	19 Jan. 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	Dr. Yajima	1
25	23 Jan. 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	Mr. Yashiro And Dr. Kov	5
26	22 Feb. 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ)	16	Mr. Frits	1
27	22 Feb. 2018	Half Day	The Progress of ITC System	16	Mr. Ito	4
28	22 Feb. 2018	Half Day	Bus Driving Training	16	Mr. Murata	3
29	27 Feb. 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	Mr. Frits	1
30	03 Mar. 2018	Full Day	Training Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	Mr. Frits	1
31	09 Mar. 2019	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	Mr. Takahashi	1

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (Jan - Feb 2018)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (Feb - Mar 2018)
10. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017*)

– Mar 2018)

8. Assistance for recruitment of bus maintenance mechanics (Nov 2017 – Mar 2018)
9. Preparation of daily/weekly/monthly work sheets (Nov 2017)
10. Recruitment of Chief Mechanics (April 2018)
11. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (July 2017)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers
 - 3) On-board survey on drivers/conductors and driving skills
 - 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus (July and Nov 2017)
3. Study of safety management system and drivers/conductors training in Japan (July 2017)
4. Participate in intensive training course organized by Eagle Bus Corp. (Nov 2017)
5. Review of recruitment/training for bus drivers/conductors for Phase 1 (Nov 2017)
6. Monitoring on accidents of bus (Feb 2018)
7. Preparation of Safety Driving Manual and training on safety driving (Feb – Mar 2018)
8. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting**)

The activities for **Output 4 “Improvement of Business Management Capacity of CBA”** are undergoing.

1. Baseline survey (Sep and Dec 2017)
 - 1) Data collection of CBA’s financial statement
 - 2) Data collection of PPCA’s financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA’s accounting office
 - 5) Input data collection for BOM model
2. Bus business management (Sep 2017 to Mar 2018):
 - 1) Data analysis of CBA and PPCA’s financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries

- 4) Preliminary study on revenue generation schemes
- 5) Examination and discussion on business plan of company bus
3. ICT (*May 2017 to March 2018*):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (*Nov 2017 – Mar 2018*)
4. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting***)

The activities for ***Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”*** are undergoing.

1. Baseline survey (*July and Aug 2017*)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (*July 2017*)
3. Review of 2014 Urban Transport Master Plan (*July 2017*)
4. Preparation of a concept plan of public transport priority measures (*July 2017*)
5. Preparation of a concept mobility management plan (*Dec 2017*)
6. Preparation of bus depot layout plan (*May – Aug 2017*)
7. Approval of bus depot design by Governor (*Dec 2017*)
8. Preparation of bus color design (*Dec 2017*)
9. Technical advice on bus depot design (*Jan - Feb 2018*)
10. Examination and discussion on Public transport priority measures (*Jan - Feb 2018*)
11. Implementation plan on mobility management workshop (*Mar 2018*)
12. Implementation plan on public transport priority measures (*Mar 2018*)
13. Preparation of Bus Facility Planning and Design Guideline (*Dec 2017 – onward*)
14. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Agenda, Materials and Minutes of Meeting***)

1.3. Achievement of Output

The achievement level of each output is summarized below.

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s)	40%	- A number of workshops/seminars conducted for CBA management and

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is improved to trainer's level		<p>staffs</p> <ul style="list-style-type: none"> - A study trip carried out in Malaysia and Singapore and network plan and operation scheme studied - Capacity evaluation survey to be conducted in May 2018
- Bus operation manual is developed	50%	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017 - Roster plan developed and tested in Line 9.
- Bus operation system/model is established	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan
- Bus operation is reviewed and revised based on data collected	40%	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9.

1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Objective verifiable indicator of Output 2	Achieved	Activities completed
- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level	30%	<ul style="list-style-type: none"> - Recruitment plan prepared and approved by PPCA - CBA recruited chief maintenance mechanics by April 2018. - A number of workshops conducted for CBA management and staffs - A study trip carried out and depot and vehicle maintenance including bus academy learnt - Capacity evaluation survey to be conducted in May 2018
- Bus vehicle maintenance manual is developed	20%	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to be prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates,

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		prepared
- Bus inspection is routinely conducted, following maintenance manual	10%	- Bus operation and maintenance for Korean and Chinese bus reviewed

1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	60%	- Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management - A study trip carried out in Malaysia and Singapore and network plan and drivers management studied - A number of workshops conducted for CBA management and staffs
- Conductor work manual is developed	60%	- Ditto
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	20%	- 16 AM/PM chief drivers involved in a series of workshops
- All drivers have completed the driver training and passed training	20%	- Drivers driving record collected and analyzed
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	20%	- 16 AM/PM chief dispatchers involved in workshops
- All conductors have completed the conductor training and passed training	10%	Ditto
- Safety management system is developed	10%	- Traffic accident data collected and analyzed - Several safety measures taken, including ID, uniform, etc. - System supplier for safety driving system surveyed to study a business model

1.3.4. Output 4: Improvement of Business Management Capacity of CBA

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting	30%	- A number of workshops conducted for CBA management and staffs

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of three (3) key CBA staff(s) is improved to trainer's level		
- Financial statements are prepared	80%	- Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement
- Operation cost model and passenger database are developed	70%	- BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus operation are assessed	30%	- Bus passenger and non bus passenger interview survey conducted in Aug 2017 - Needs in bus operation assessed - Monitoring survey for bus and non bus passenger be conducted in May 2018 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider
- Business plan is formulated and reflects on budget plan	20%	- Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	- BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.
- Cashless ticketing system is developed	50%	- CBA introduced Wing's NFC card - CBA to introduce ACLEDA's QR code - JICA to introduce smart phone based ticketing system

**1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport
Priority Measures of CBA and DPWT/PPCA**

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level	30%	- A number of workshops conducted for CBA and DPWT - A study trip carried out in Malaysia and Singapore and bus priority measures studied - Capacity evaluation survey be conducted in May 2018

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- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	20%	- Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed with CBA management
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	60%	- Bus depot layout plan prepared and approved by PPCA - Construction of bus depot undergoing and monitored - Bus facilities (Bus stops/signs) for Phase 1 designed and installed
- Bus information and location system is developed	20%	- Bidding documents for bus operation and management system prepared

1.4. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	80%	- Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 Lines by Nov 2017
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	90%	- Bus service rate improved from 67.5% in 2016 to 89.6% as of Mar 2018* Note: Actual bus operated against bus frequency based on CBA' operation plan.
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	10%	- Bus fleet maintenance reviewed and maintenance plan prepared
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	30%	- Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 1.46/100,000km (CBA drivers as first party) (3.40/100,000km in total) as of Jan-Mar 2018
- Level of perception of the bus improves and customer satisfaction of	30%	- Bus passenger and non bus passenger interview survey conducted

bus users improves.		and baseline collected to monitor the performance in Aug 2017 and May 2018. - Questionnaire survey conducted in May/June 2018 during Dissemination Workshop
- Bus operation cost covered by the revenue in 2020.	20%	- Bus revenue covers 20.1% of bus operation cost between Jan and Dec 2017
- Average operation speed maintained at 15km/h in 2020	60%	- Average operation speed maintained at 14.1km/h as between Jan-Mar 2018

1.5. Changes of Risks and Actions for Mitigation

Not applicable

1.6. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.7. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.8. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Not applicable

1.9. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

2.1. Summary

There is a risk that disbursement for installation of bus operation and management system and implementation of pilot project/mobility management would be behind the schedule.

2.2. Cause

Due to budget constraints in JICA

2.3. Action to be taken

A series of discussions made between Expert Team and JICA and which confirmed JICA set aside funding for development of Bus Operation and Management System (including location system) and part of pilot projects (PTPS: Public Transport Priority Signal).

The following items still seek for funding sources and CBA and Expert Team to work for securing the funds.

- Bus Management System (Bus safety management system, Passenger monitoring system)
- Pilot Project (Bus priority lane, On-street parking management, Bus bay, Para-transit management, Intersection improvement)

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Expert Team and CBA will seek for funding for the remaining tasks/items. The following summarizes potential funding sources.

- Bus Management System (Bus safety management system, Passenger monitoring system): JICA/PPCA/Private Sector
- Pilot Project (Bus priority lane, On-street parking management, Bus bay, Para-transit management, Intersection improvement): PPCA

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 4

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.4 (Term: May 2018 – Dec 2018)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 11th February 2019

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: **3** organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See **Annex 5: Inputs provided**.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management
 - 10) Mobility Management (1/2/3)

- 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was carried out from 25th Feb to 2nd March 2018 in Malaysia and Singapore. (See the details in the Study Trip Report as attachment of Project Monitoring Sheet Ver.2). The 2nd study trip is being carried out from 17th Feb and 26th Feb 2019 in Japan.
3. Machinery and equipment:
Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*)
4. 1st JCC (*9th May 2017*)
5. 2nd JCC (*8th June 2018*) (See **Annex 7: Meeting/Workshop Materials**)
6. Other significant progress
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)
 - ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of drivers/office staffs (*occasionally*)

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- | | |
|----------|--|
| Output 1 | Bus operation capacity of CBA is improved |
| Output 2 | Maintenance and inspection capacity on bus vehicles of CBA is implemented |
| Output 3 | Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA |

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Output 4 CBA's business management capacity is improved

Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

List of Workshops/Technical Trainings (up to Nov. 2018, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output No.
1	20 Jan. 2017	Half Day	Work Plan Outline	10	1
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	4 Mar. 2017	Haft Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun. 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	5 Jul. 2017	Half Day	GPS System	13	5
6	11. Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11. Jul 2017	Half Day	Bus Stop Design Gide	12	1
8	11. Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	6 Sept. 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	8 Sept. 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sept. 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct. 2017	Half Day	Matters agreed between CBA, JICA expert and CJEC	9	5
13	31 Oct. 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	7 Nov. 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov. 2017	Half Day	Implement Bus Operation Management System	14	5
16	7 Dec. 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec. 2017	Half Day	Mobility Management	21	5
18	15 Dec. 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec. 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec. 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec. 2017	Half Day	3 rd Workshop for the management and the accounting	12	4
22	21 Dec. 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan. 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan. 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb. 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ	16	1
26	22 Feb. 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb. 2018	Half Day	Bus Driving Training (2)	16	3
28	27 Feb. 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1

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The Project for Improvement of Public Bus Operation in Phnom Penh

29	3 Mar. 2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	1
30	9 Mar. 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	4 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	5 Jun 2018	Haft Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	6 Jun 2918	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5
40	7 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	7 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	7 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	1
43	20 Jun 2018	Haft Day	Bus Operation Training	15	3
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	5 Sep. to 07 Oct. 2018	33 Days	Bus driving training	No.1: 60 No.2: 60 No.3:40 No.4:40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	1
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
52	4 Dec 2018	6 days	New Driver Training	31	3
53	11 Dec 2018	5 days	New Driver Training	9	3
54	19 Dec 2018	Half Day	Safety Operation	7	3
55	19 Dec 2018	Half Day	Mobility Management Guideline	7	5

< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (Jan 2017- May 2017)

- 1) Condition survey of bus routes and bus stops/terminus/facilities.
- 2) Condition survey of bus operation and system

- 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (*Sep 2018*)
12. Stepwise implementation of Phase 2 (*Line 1-13 start operation on 1st Oct 2018*)
13. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Materials***)

The activities for ***Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”*** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics,

- training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
 8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
 9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
 10. Recruitment of Chief Mechanic (*April 2018*)
 11. Recruitment of 18 Mechanics (*May 2018 – onward*)
 12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan's Grant Aid)
 13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
 14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
 15. Implementation of periodical inspection and maintenance (5,000km inspection and oil change) (*Sep 2018 – onward*)
 16. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Materials***)

The activities for ***Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”*** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers
 - 3) On-board survey on drivers/conductors and driving skills
 - 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (*Sep. 2017*)
3. Study of safety management system and drivers/conductors training in Japan (*July 2017*)
4. Participate in intensive training course organized by Eagle Bus Corp. (*Nov 2017*)
5. Recruitment/training to drivers for 98 Chinese buses (*Aug – Nov 2017*)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (*Nov 2017*)
7. Monitoring on accidents of bus (*Feb 2018*)
8. Preparation of Safety Driving Manual and training on safety driving (*Feb 2018*)
9. Preparation of Driver's training material (*Aug 2018*) (under cooperation with the supplier under Japan's Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (*May to Oct 2018*)
11. Monitoring on accidents of bus (*Dec 2018*)
12. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Materials***)

The activities for **Output 4 “Improvement of Business Management Capacity of CBA”** are undergoing.

1. Baseline survey (*Sep and Dec 2017*)
 - 1) Data collection of CBA’s financial statement
 - 2) Data collection of PPCA’s financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA’s accounting office
 - 5) Input data collection for BOM model
2. Bus business management (*Sep 2017 to onward*):
 - 1) Data analysis of CBA and PPCA’s financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination and discussion on business plan of company bus
3. ICT-based management (*May 2017 to onward*):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (*Nov 2017 – Mar 2018*)
 - 4) Procurement of ICT equipment (Phase 1: GPS and Server) (*Sep 2018*)
 - 5) Procurement of ICT equipment (Phase 2: Bus operation management system) (*Dec 2018 – April 2019*)
 - 6) Procurement of AEON mobile payment system (*Sep 2018*)
4. Strengthening of City Bus Authority (*May 2018 to onward*):
 - 1) Official request to upgrade the Authority to Public Enterprise by MEF (*May 2018*)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (*Oct 2018*)
 - 3) Draft legislation for upgrading Public Administration Enterprise (*Dec 2018*)
5. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (*July and Aug 2017*)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (*July 2017*)

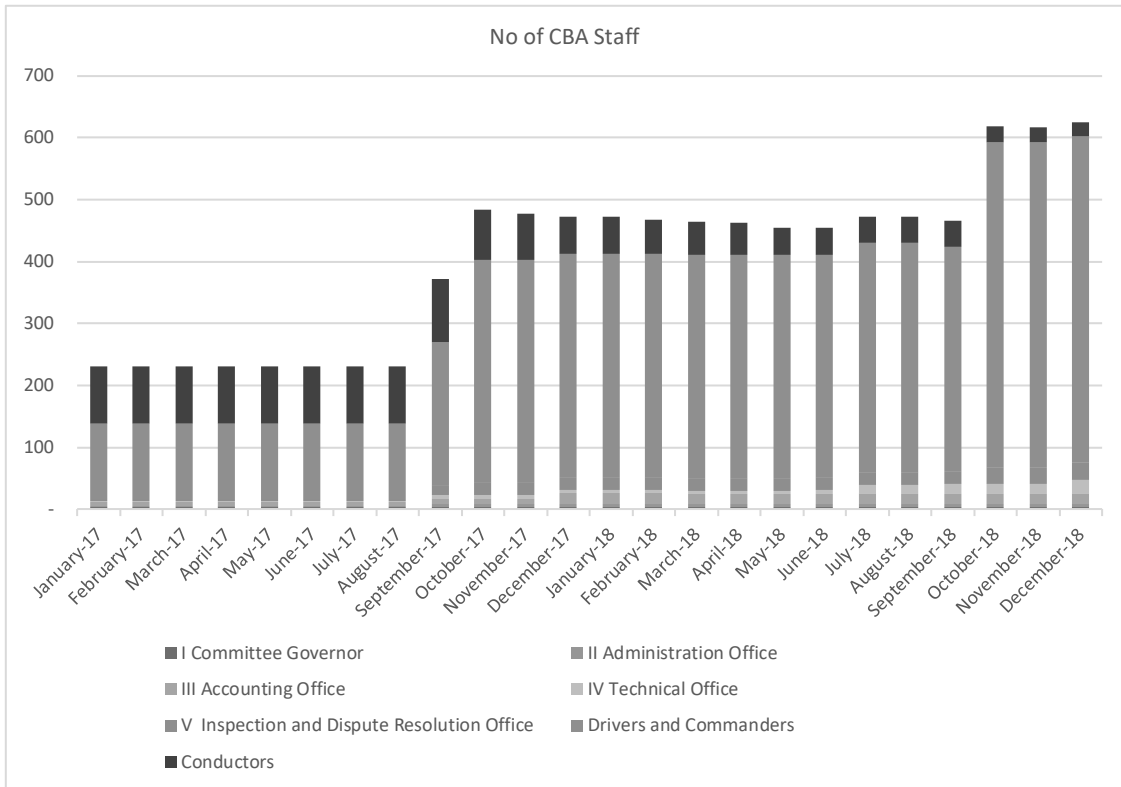
3. Review of 2014 Urban Transport Master Plan (*July 2017*)
4. Preparation of a concept plan of public transport priority measures (*July 2017*)
5. Preparation of a concept mobility management plan (*Dec 2017*)
6. Preparation of bus depot layout plan (*May – Aug 2017*)
7. Approval of bus depot design by Governor (*Dec 2017*)
8. Preparation of bus color design (*Dec 2017*)
9. Technical advice on bus depot design (*Jan - Feb 2018*)
10. Examination and discussion on Public transport priority measures (*Jan - Feb 2018*)
11. Implementation plan on mobility management workshop (*Mar 2018*)
12. Implementation plan on public transport priority measures (*Mar 2018*)
13. Implementation of series of dissemination campaign (*May – June 2018*)
14. Monitoring of bus depot development (*Aug 2018 – Jan 2019*)
15. Monitoring of bus facility development (*Aug 2018 – Jan 2019*)
16. Preparation of Design Guides (*Dec 2017 – onward*)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development) (*Nov 2018 – onward*)
18. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Materials***)

1.3. Monitoring Indicators

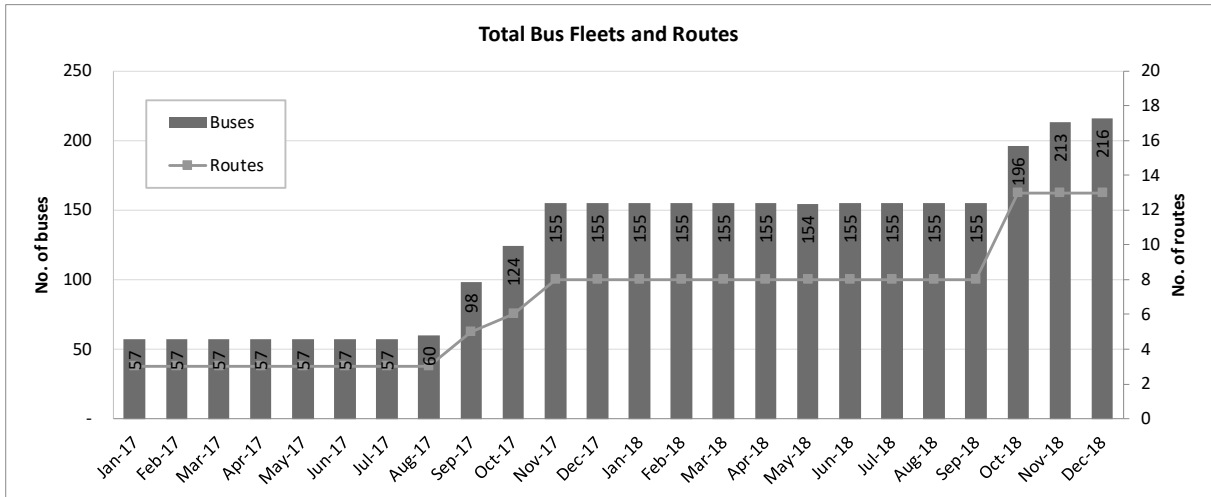
The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured below.

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

1. No. of staffing in 2017/18



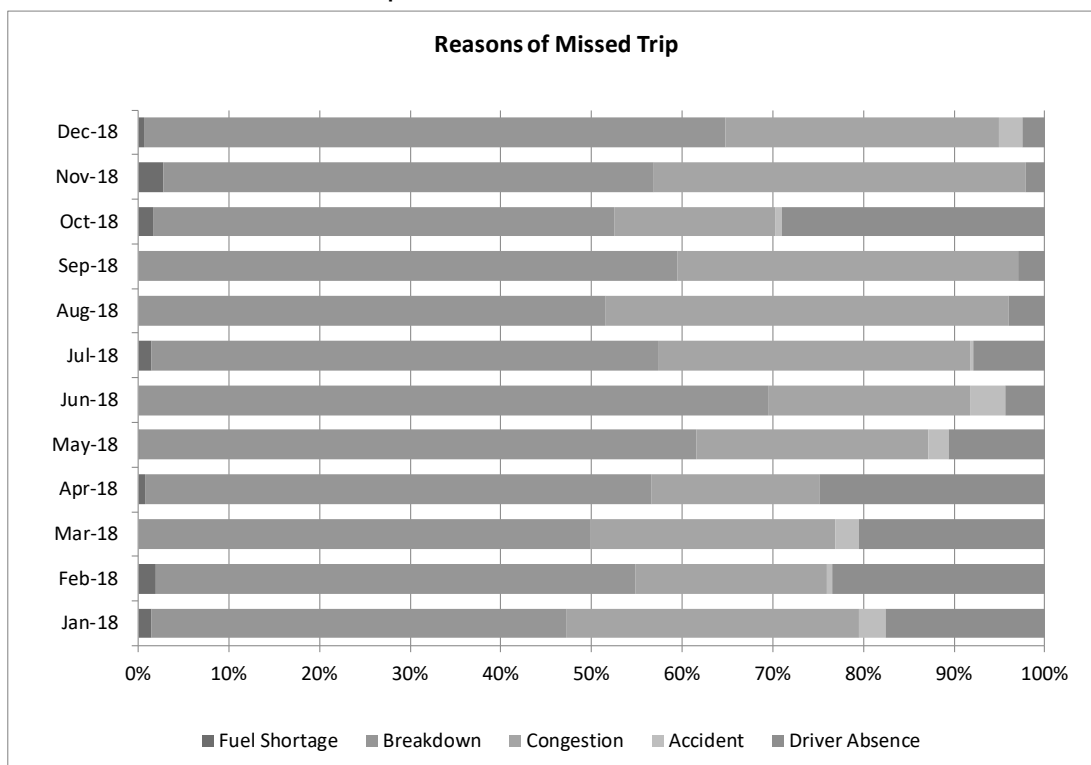
2. No of bus lines and fleets in 2017/18



3. Summary of bus operation service level in 2018

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

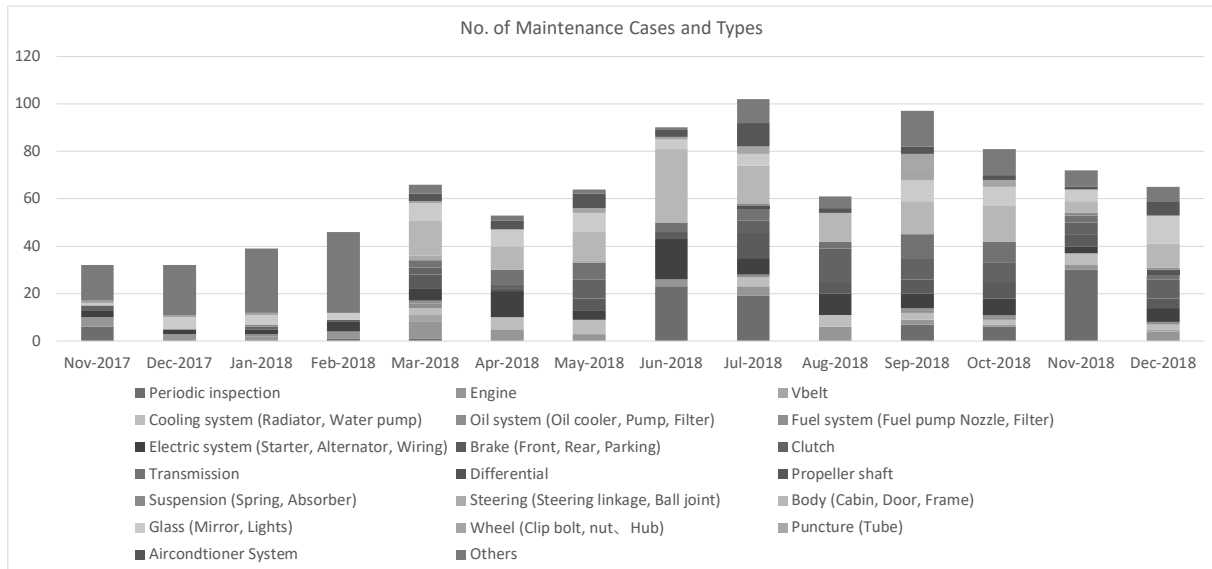
4. Reasons of missed trip in 2018



1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

1. No. of maintenance cases and types in 2017/18

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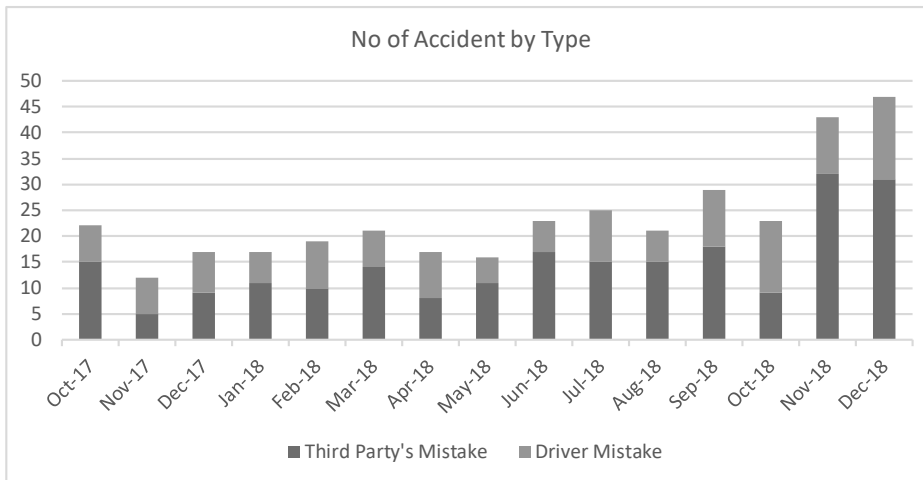


1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

1. Summary of accident under CBA in 2018

Month	Traffic Accident		
	Occurance	Accident rate	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)
Jan-18	17	3.11	35%
Feb-18	19	3.37	47%
Mar-18	21	3.70	33%
Apr-18	17	3.03	53%
May-18	16	2.84	31%
Jun-18	23	4.24	26%
Jul-18	25	4.54	40%
Aug-18	21	3.60	29%
Sep-18	29	5.46	38%
Oct-18	23	3.57	61%
Nov-18	43	6.24	26%
Dec-18	47	6.70	34%
Total in 2018	301	4.27	37.8%

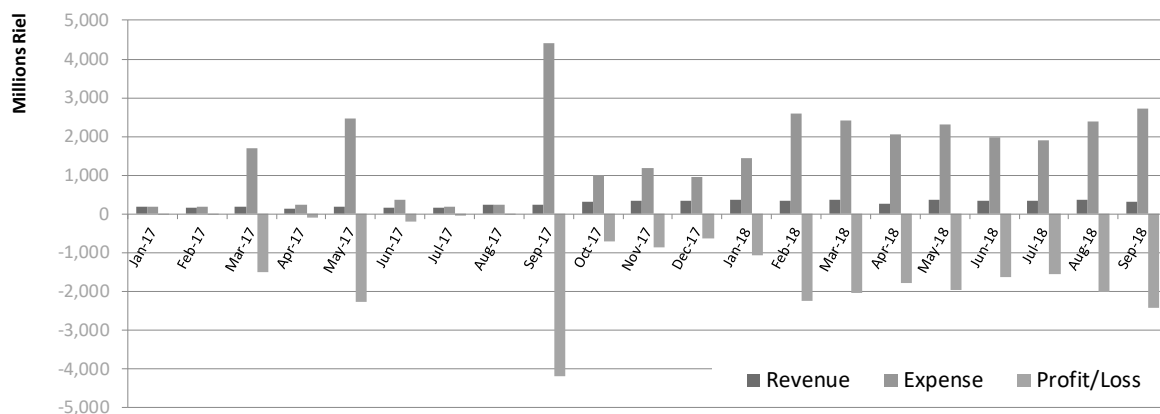
2. No. of accident by concerned party in 2017/18



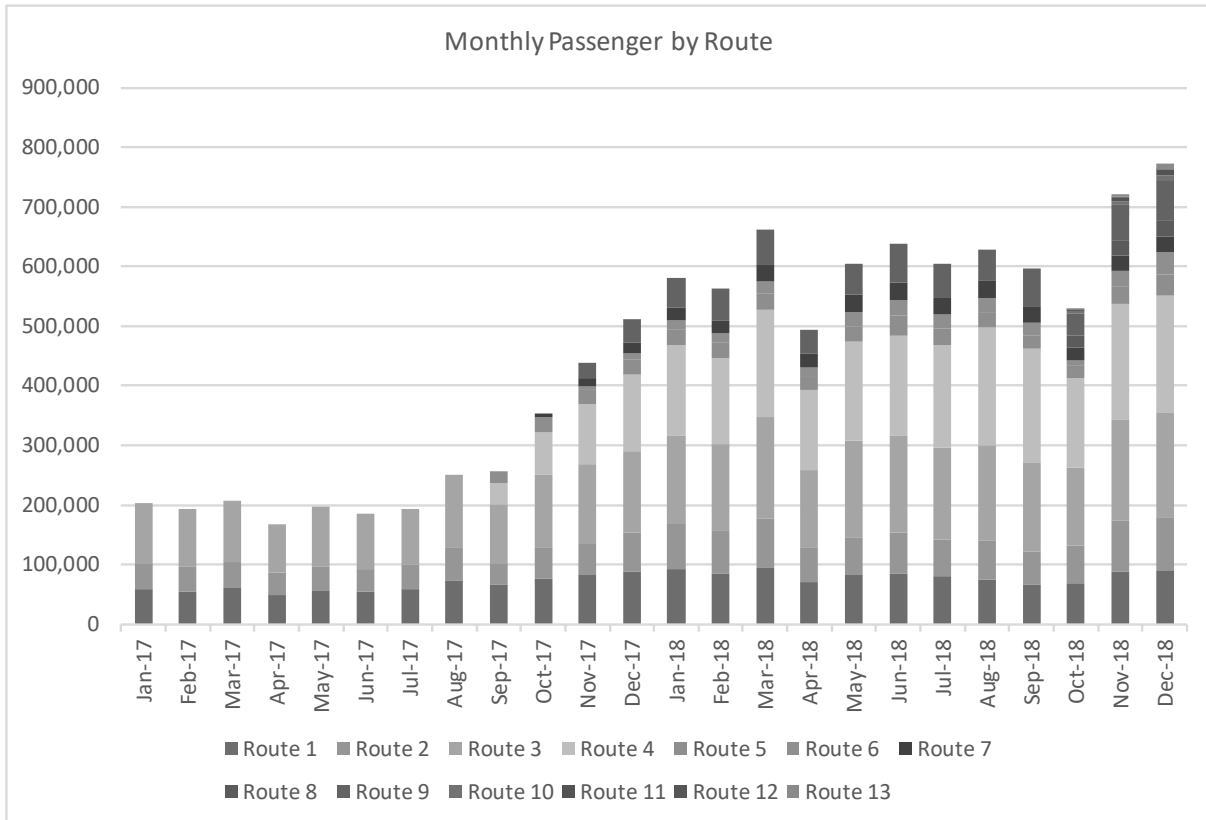
1.3.4. Output 4: Improvement of Business Management Capacity of CBA

1. Summary of Revenue/Expense under CBA in 2018 (latest figure in Sep 2018)

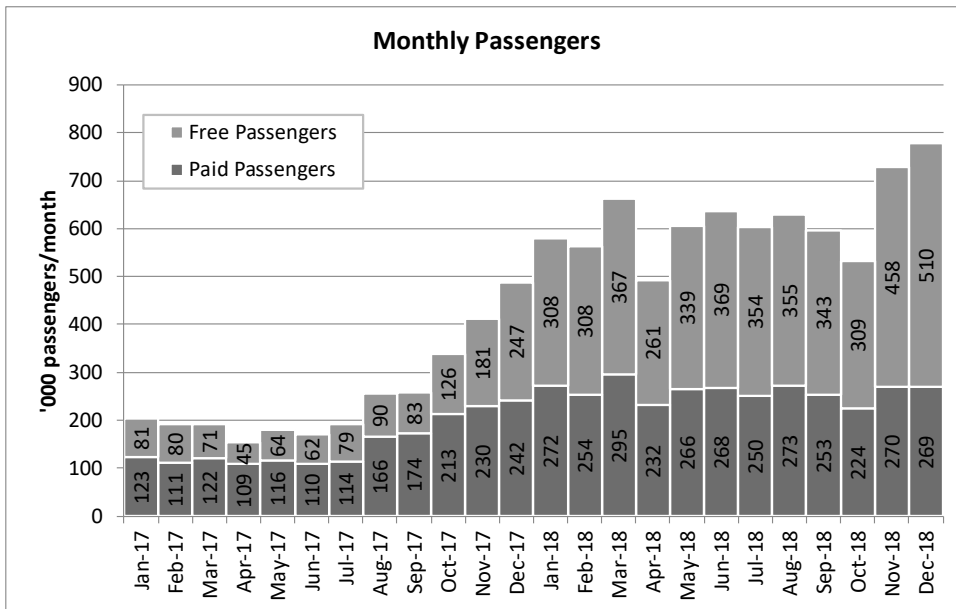
Month	Revenue&Cost		
	Revenue	Expense	Profit/Loss
	(mil. Riels)	(mil. Riels)	(mil. Riels)
Jan-18	370.9	1445.3	-1,074
Feb-18	348.8	2584.7	-2,236
Mar-18	377.2	2421.2	-2,044
Apr-18	275.0	2066.1	-1,791
May-18	356.3	2311.9	-1,956
Jun-18	333.2	1974.5	-1,641
Jul-18	351.4	1892.5	-1,541
Aug-18	367.6	2381.3	-2,014
Sep-18	306.0	2723.9	-2,418
Oct-18			
Nov-18			
Dec-18			
Total in 2018	3,086	19,801	-16,715



2. No. of passenger by route

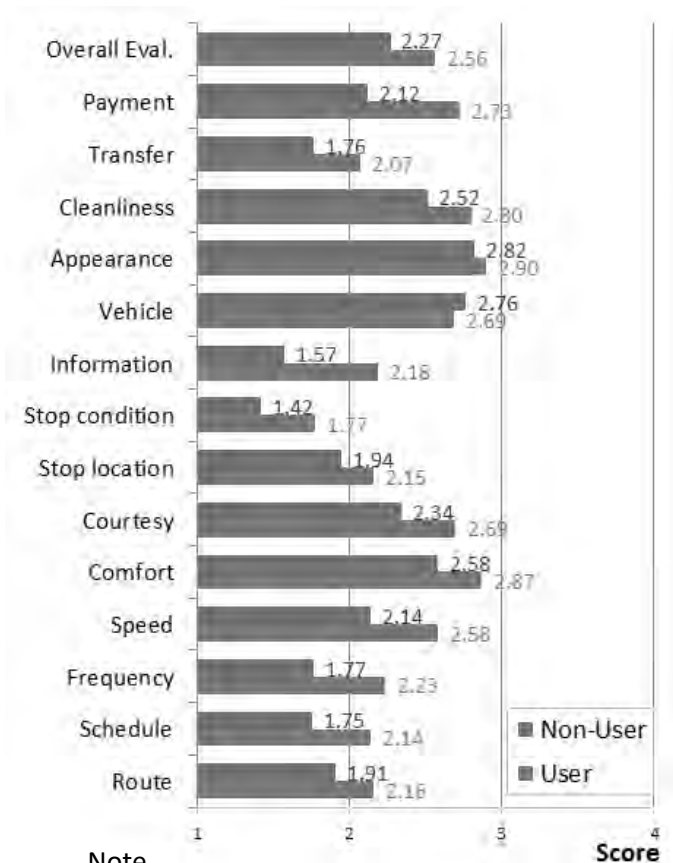


3. No. of free/paid passenger



1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

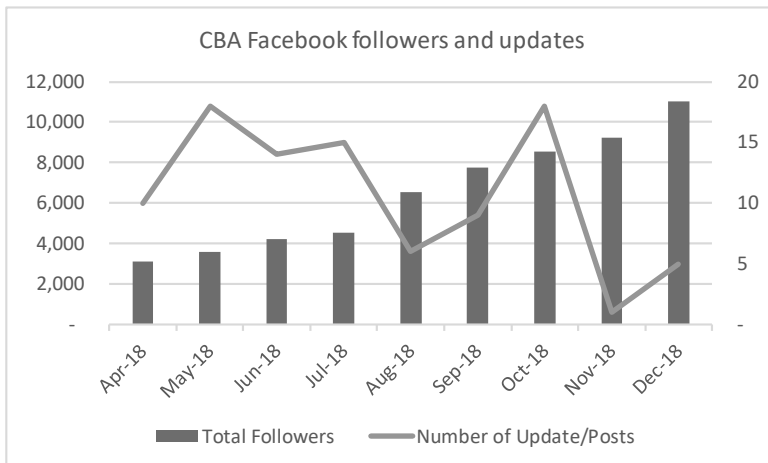
1. Local perception for city bus service (Summary result of user/non-user survey)



Note

1: Poor 2: Fair 3: Good 4: Excellent

2. CBA's Facebook follower



1.4. Achievement of Output

The achievement level of each output is summarized below.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA

Objective verifiable indicator of Output 1	Achieved	Activities completed
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<p>- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer's level</p>	<p align="center">60%</p>	<ul style="list-style-type: none"> - A number of workshops/seminars conducted for CBA management and staffs - A study trip carried out in Malaysia and Singapore and network plan and operation scheme studied - CBA developed bus route/fleet deployment plan and implemented Phase 2 network and operation plan. - Capacity evaluation survey to be conducted in Feb 2019
<p>- Bus operation manual is developed</p>	<p align="center">70%</p>	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017 - Roster plan developed and tested in Line 9. - Phase 1 network and operation practice reviewed - Bus network and operation plan (Phase 2) drafted and approved by PPCA Governor - Phase 2 (Line 1-13) implemented by Oct 2018
<p>- Bus operation system/model is established</p>	<p align="center">70%</p>	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - ICT-based Bus Management System under development
<p>- Bus operation is reviewed and revised based on data collected</p>	<p align="center">50%</p>	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9. - Phase 1 network and operation practice reviewed and Bus network and operation plan (Phase 2) drafted

1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Objective verifiable indicator of Output 2	Achieved	Activities completed
<p>- Level of skills and knowledge on bus</p>	<p align="center">50%</p>	<p>- Recruitment plan prepared and</p>

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<p>maintenance of five (5) key CBA staff(s) is improved to trainer's level</p>		<p>approved by PPCA</p> <ul style="list-style-type: none"> - CBA recruited chief maintenance mechanics by April 2018 - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses - A number of workshops conducted for CBA management and staffs - A study trip carried out and depot and vehicle maintenance including bus academy learnt - Capacity evaluation survey to be conducted in Feb 2019
<p>- Bus vehicle maintenance manual is developed</p>	<p>50%</p>	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates, prepared - A number of workshops conducted for CBA maintenance mechanics
<p>- Bus inspection is routinely conducted, following maintenance manual</p>	<p>50%</p>	<ul style="list-style-type: none"> - Bus operation and maintenance for Korean and Chinese bus reviewed - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses

1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
<p>- Bus driver training manual is developed</p>	<p>60%</p>	<ul style="list-style-type: none"> - Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management

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The Project for Improvement of Public Bus Operation in Phnom Penh

		<ul style="list-style-type: none"> - Driver's operation manual developed by bus fleet suppliers - A study trip carried out in Malaysia and Singapore and network plan and drivers management studied - A number of workshops conducted for CBA management and staffs
- Conductor work manual is developed	NA	NA
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	50%	<ul style="list-style-type: none"> - 16 AM/PM chief drivers involved in a series of workshops - A number of workshops conducted by chief drivers
- All drivers have completed the driver training and passed training	100%	<ul style="list-style-type: none"> - Drivers driving record collected and analyzed - Drivers paper and practical tests were conducted during recruitment for Japanese buses - Only drivers who passed paper and practical tests employed by CBA
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	NA	NA
- All conductors have completed the conductor training and passed training	NA	NA
- Safety management system is developed	20%	<ul style="list-style-type: none"> - Traffic accident data collected and analyzed - System supplier for safety driving system surveyed to study a business model

1.4.4. Output 4: Improvement of Business Management Capacity of CBA

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	50%	<ul style="list-style-type: none"> - A number of workshops conducted for CBA management and staffs - CBA regularly prepared budget plan as well as revenue/cost reports - Capacity evaluation survey to be conducted in Feb 2019
- Financial statements are prepared	80%	<ul style="list-style-type: none"> - Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement - CBA regularly prepared budget plan as well as revenue/cost reports

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

- Operation cost model and passenger database are developed	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus operation are assessed	60%	<ul style="list-style-type: none"> - Bus passenger and non bus passenger interview survey conducted in Aug 2017 - Needs in bus operation assessed - Monitoring survey for bus and non bus passenger be conducted in May 2018 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider - CBA carried out dissemination workshops involving all Districts in Phnom Penh.
- Business plan is formulated and reflects on budget plan	40%	<ul style="list-style-type: none"> - Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared - CBA's new legislation drafted to upgrade to Public Administration Enterprise - PPCA assigned private advertisement company, initiated advertisement, wrapping Chinese/Korean buses and developed nearly 170 sheltered bus stops
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	<ul style="list-style-type: none"> - BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.
- Cashless ticketing system is developed	80%	<ul style="list-style-type: none"> - CBA introduced Wing's NFC card - CBA introduced ACLEDA's QR code - JICA introduced smart phone based ticketing system

1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of	30%	- A number of workshops conducted for CBA and DPWT

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three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level		<ul style="list-style-type: none"> - A study trip carried out in Malaysia and Singapore and bus priority measures studied - Capacity evaluation survey be conducted in Feb 2019
- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	30%	<ul style="list-style-type: none"> - Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed by JCC members - CBA submitted a concept plan as well as budget plan to PPCA
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	60%	<ul style="list-style-type: none"> - Bus depot layout plan prepared and approved by PPCA - Construction of bus depot completed - Bus facilities (Bus stops/signs) for Phase 1 designed and installed - Bus facilities (Bus stops/signs) for Phase 2 designed and installed - PPCA assigned private advertisement company and developed nearly 170 sheltered bus stops
- Bus information and location system is developed	40%	<ul style="list-style-type: none"> - Bidding documents for bus operation and management system completed - GPS installed in all City Buses and system under development

1.5. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	100%	<ul style="list-style-type: none"> - Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 lines by Nov 2017 - Phase 2 bus network and operation plan developed and approved by PPCA - Bus network increased from 8 lines to 13 lines

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- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	85%	- Bus service rate improved from 67.5% in 2016 to 89.6% as of Mar 2018* - Bus service rate dropped 77.8% as of Dec 2018 due to increased need for maintenance and traffic congestion. Note: Bus service rate is No. of actual bus operation against bus frequency based on CBA' operation plan.
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	35%	- Japanese buses (80 units) regularly inspected and initial maintenance carried out at the mileage of 5000 km - Chinese buses (98 units) under consideration to be inspected and maintained by CBA
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	50%	- Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 2.01/100,000km (CBA drivers as first party) (5.50/100,000km in total) as of Oct - Dec 2018
- Level of perception of the bus improves and customer satisfaction of bus users improves.	30%	- Bus passenger and non bus passenger interview survey conducted and baseline collected to monitor the performance - Interview survey to be conducted in May 2019
- Bus operation cost covered by the revenue in 2020.	20%	- Bus revenue covers 20 % of bus operation cost between Jan and Sep 2018
- Average operation speed maintained at 15 km/h in 2020	60%	- Average operation speed maintained at 14.1km/h between Jan-Oct 2018

1.6. Changes of Risks and Actions for Mitigation

Not applicable

1.7. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.8. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Not applicable

1.10. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

2.1. Summary

As agreed in the 2nd JCC held in May 2018, both PPCA/CBA and JICA confirmed the scope of public transport priority measures as a pilot project and the expenses for implementation of the pilot project be borne by both JICA (PTPS: Public Transport Priority Signal) and PPCA (bus priority lane, parking management and para-transit management). There is a risk that PPCA cannot provide a sufficient amount of fund to implement agreed public transport priority measures on time.

2.2. Cause

Lack of funding to implement agreed public transport priority measures

2.3. Action to be taken

The following actions are under discussion between Expert Team and CBA.

- Re-scoping/redesign to minimize cost (project area, scope of pilot project)
- Rescheduling (JICA implement in 2019 and CBA in 2020)
- Other funding source (e.g., ADB TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development)

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

The following organizations are responsible for each action.

- Re-scoping/redesign to minimize cost (Expert Team, PPCA/CBA)
- Rescheduling (Expert Team, PPCA/CBA)
- Other funding source (ADB and others)

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 5

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.5 (Term: Jan. 2019 – May 2019)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 12th June 2019

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: 3 organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See **Annex 5: Inputs provided**.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management
 - 10) Mobility Management (1/2/3)

- 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was carried out from 25th Feb to 2nd March 2018 in Malaysia and Singapore. The 2nd study trip was carried out from 16th to 26th Feb 2019 in Japan
(See **Annex 7: Reports: A Study Tour Completion Report**)
3. Machinery and equipment:
Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. See **Annex 5: Inputs Provided**
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*)
4. 1st JCC (*9th May 2017*)
5. 2nd JCC (*8th June 2018*) (See **Annex 8: Meeting/Workshop Materials**)
6. Other significant progress
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)
 - ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of mechanics (by April 2018)
 - vi. Employment of drivers/office staffs (*occasionally*)

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- | | |
|----------|--|
| Output 1 | Bus operation capacity of CBA is improved |
| Output 2 | Maintenance and inspection capacity on bus vehicles of CBA is implemented |
| Output 3 | Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA |

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The Project for Improvement of Public Bus Operation in Phnom Penh

Output 4 CBA's business management capacity is improved

Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

List of Workshops/Technical Trainings (up to May. 2019, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output No.
1	20 Jan. 2017	Half Day	Work Plan Outline	10	1
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	4 Mar. 2017	Haft Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun. 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	5 Jul. 2017	Half Day	GPS System	13	5
6	11. Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11. Jul 2017	Half Day	Bus Stop Design Gide	12	1
8	11. Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	6 Sept. 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	8 Sept. 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sept. 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct. 2017	Half Day	Matters agreed between CBA, JICA expert and CJEC	9	5
13	31 Oct. 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	7 Nov. 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov. 2017	Half Day	Implement Bus Operation Management System	14	5
16	7 Dec. 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec. 2017	Half Day	Mobility Management	21	5
18	15 Dec. 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec. 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec. 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec. 2017	Half Day	3 rd Workshop for the management and the accounting	12	4
22	21 Dec. 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan. 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan. 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb. 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ	16	1
26	22 Feb. 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb. 2018	Half Day	Bus Driving Training (2)	16	3
28	27 Feb. 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1

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29	3 Mar. 2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	1
30	9 Mar. 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	4 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	5 Jun 2018	Half Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	6 Jun 2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5
40	7 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	7 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	7 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	1
43	20 Jun 2018	Half Day	Bus Operation Training	15	3
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	5 Sep. to 07 Oct. 2018	33 Days	Bus driving training	No.1: 60 No.2: 60 No.3:40 No.4:40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	1
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
52	4 Dec 2018	6 days	New Driver Training	31	3
53	11 Dec 2018	5 days	New Driver Training	9	3
54	19 Dec 2018	Half Day	Safety Operation	7	3
55	19 Dec 2018	Half Day	Mobility Management Guideline	7	5
56	21 Jan. 2019	Half Day	Fare Policy	13	4
57	31 Jan. 2019	Half Day	Discussion on CBA's Condition and Registration Book	10	4
58	21 Mar. 2019	Half day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	1
59	27 Mar 2019	Half day	Bus maintenance plan and budget	12	2
60	28 Mar 2019	Half day	Progress report of Bus Management System	15	4
61	Mar 2019		Paratransit Management in Phnom Penh		5

62	3 Jun to 21 Jun 2019 (on-going)	Half day	Dissemination Campaign at Khans		5
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< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (Sep 2018)
12. Stepwise implementation of Phase 2 (Line 1-13 start operation on 1st Oct 2018, 235 buses are in operation)
13. New bus depot operation (*starting in Feb 2019*) and completion of stepwise implementation of Phase 2 (*Feb 2019*)
14. Monitoring of Phase 2 operation plan (*On-going*)
15. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
10. Recruitment of Chief Mechanic (*April 2018*)
11. Recruitment of 18 Mechanics (*by May 2018*)
12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan’s Grant Aid)
13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
15. Implementation of periodical inspection and maintenance (5,000km initial inspection and oil change) (*Sep 2018 – onward*)
16. New bus depot operation (*from Feb 2019*) and set-up of inspection and maintenance office/storage
17. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers

- 3) On-board survey on drivers/conductors and driving skills
- 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (Sep. 2017)
3. Study of safety management system and drivers/conductors training in Japan (July 2017)
4. Participate in intensive training course organized by Eagle Bus Corp. (Nov 2017)
5. Recruitment/training to drivers for 98 Chinese buses (Aug – Nov 2017)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (Nov 2017)
7. Monitoring on accidents of bus (Sep 2017 onward)
8. Preparation of Safety Driving Manual and training on safety driving (Feb 2018)
9. Preparation of Driver's training material (Aug 2018) (under cooperation with the supplier under Japan's Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (May to Oct 2018)
11. Deployment of driver and fleet for Phase 2 operation plan (Sep 2018)
12. Intensive training for selected reckless drivers (Dec 2018)
13. Procurement of Alcohol Detector (On-going)
14. Monitoring of fleet and driver deployment plan and operation (On-going)
15. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 4 "Improvement of Business Management Capacity of CBA"** are undergoing.

1. Baseline survey (Sep and Dec 2017)
 - 1) Data collection of CBA's financial statement
 - 2) Data collection of PPCA's financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA's accounting office
 - 5) Input data collection for BOM model
2. Bus business management (Sep 2017 to onward):
 - 1) Data analysis of CBA and PPCA's financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination and discussion on business plan of company bus
3. ICT-based management (May 2017 to onward):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (Nov 2017 – Mar 2018)

- 4) Procurement of ICT equipment (Phase 1: GPS and Server) (Sep 2018)
- 5) Procurement of ICT equipment/software (Phase 2: Bus Operation Management System) (Dec 2018 – on-going)
- 6) Procurement of AEON mobile payment system (Sep 2018)
- 7) Assistance to develop Bus Location System (On-going)
4. Strengthening of City Bus Authority (May 2018 to onward):
 - 1) Official request to upgrade the Authority to Public Enterprise by MEF (May 2018)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (Oct 2018)
 - 3) Draft legislation for upgrading Public Administration Enterprise (Jan 2019)
5. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (July and Aug 2017)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (July 2017)
3. Review of 2014 Urban Transport Master Plan (July 2017)
4. Preparation of a concept plan of public transport priority measures (July 2017)
5. Preparation of a concept mobility management plan (Dec 2017)
6. Preparation of bus depot layout plan (May – Aug 2017)
7. Approval of bus depot design by Governor (Dec 2017)
8. Preparation of bus color design (Dec 2017)
9. Technical advice on bus depot design (Jan - Feb 2018)
10. Examination and discussion on Public transport priority measures (Jan - Feb 2018)
11. Implementation plan on mobility management workshop (Mar 2018)
12. Implementation plan on public transport priority measures (Mar 2018)
13. Implementation of series of dissemination campaign (May – June 2018)
14. Monitoring of bus depot development (Aug 2018 – Jan 2019)
15. Monitoring of bus facility development (Aug 2018 – Jan 2019)
16. Preparation of Design Guides (Dec 2017 – onward)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable

Integrated Urban Public Transport Development) (Nov 2018 – onward)

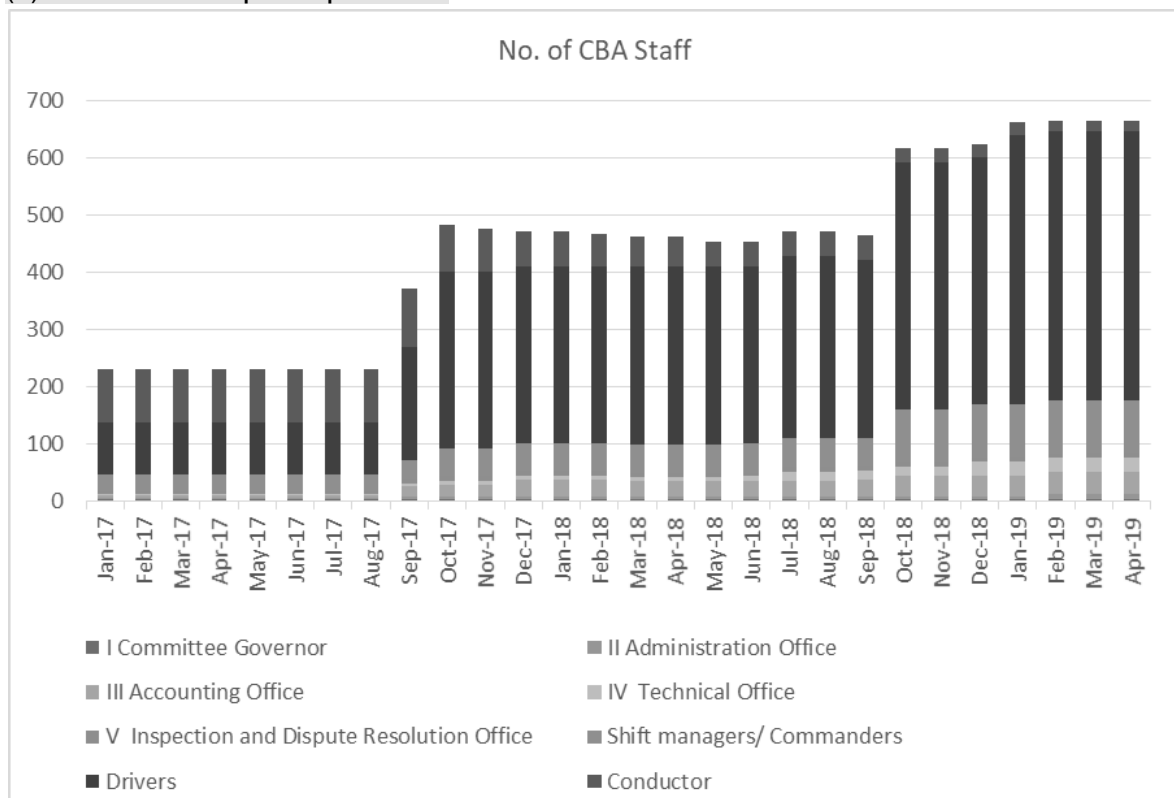
- 18. Implementation of bus user/ non-bus user survey (May 2019)
- 19. Implementation of series of dissemination campaign for public bus use (June 2019)
- 20. Action plan on mobility management (On-going)
 - i. Bus map review and revision (Feb 2019 – onward)
- 21. Action plan on public transport priority measures (On-going)
 - i. Coordination meeting with a traffic control supplier on PTPS (April 2019)
- 22. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See Annex 8: Meeting/Workshop Materials)

1.3. Monitoring Indicators

The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured below.

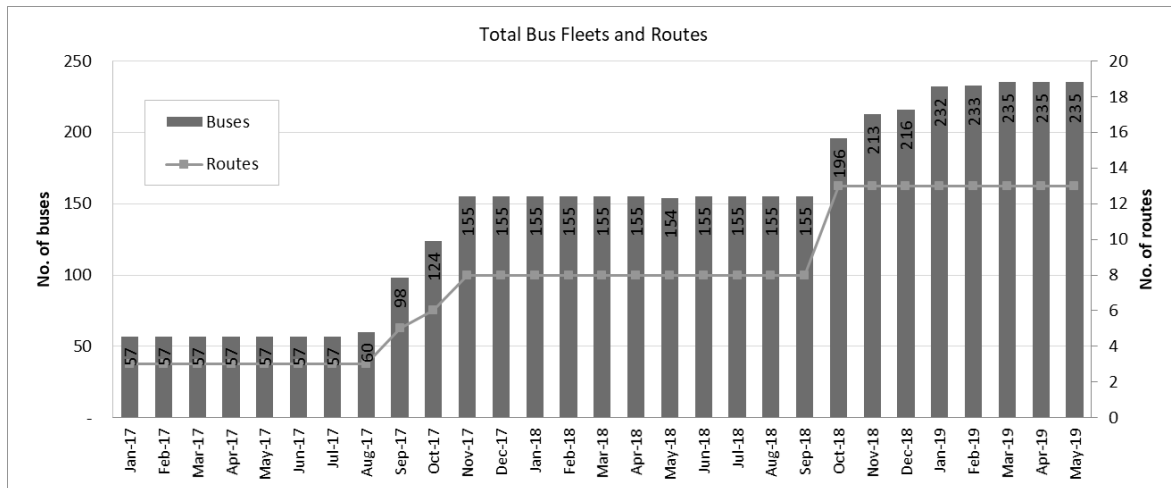
1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

(1) No. of staff up to April 2019



(2) No of bus lines and fleets up to May 2019

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(3) Summary of bus operation service level in 2018/2019

Year 2018

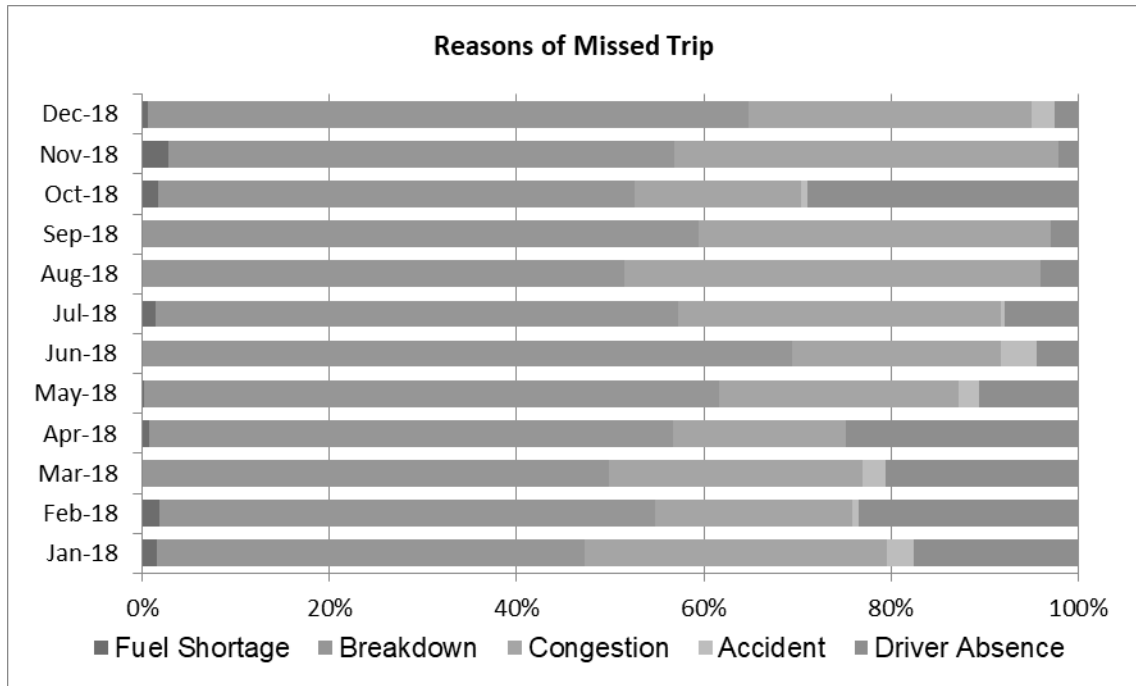
Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

Year 2019

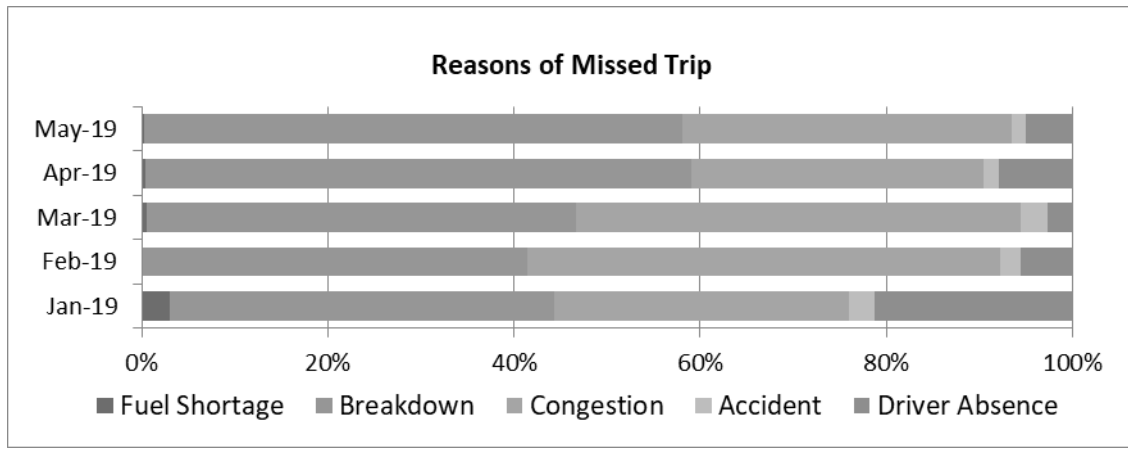
Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-19	13	232	840	653	0.22	25,272	758,163	13.7
Feb-19	13	233	870	675	0.22	25,681	770,418	13.7
Mar-19	13	235	889	673	0.24	25,907	777,198	13.8
Apr-19	13	235	853	605	0.29	23,167	695,001	13.7
May-19	13	235	902	626	0.31	23,849	715,464	12.9

(4) Reasons of missed trip in 2018/2019

Year 2018



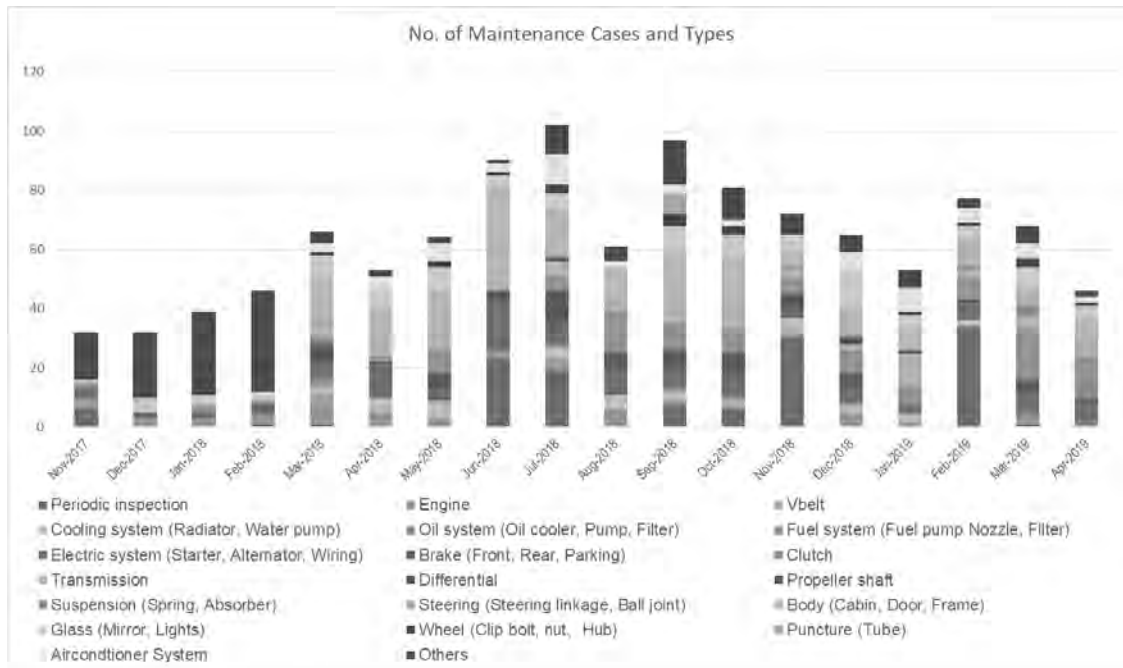
Year 2019



1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

(1) No. of maintenance cases and types up to April 2019

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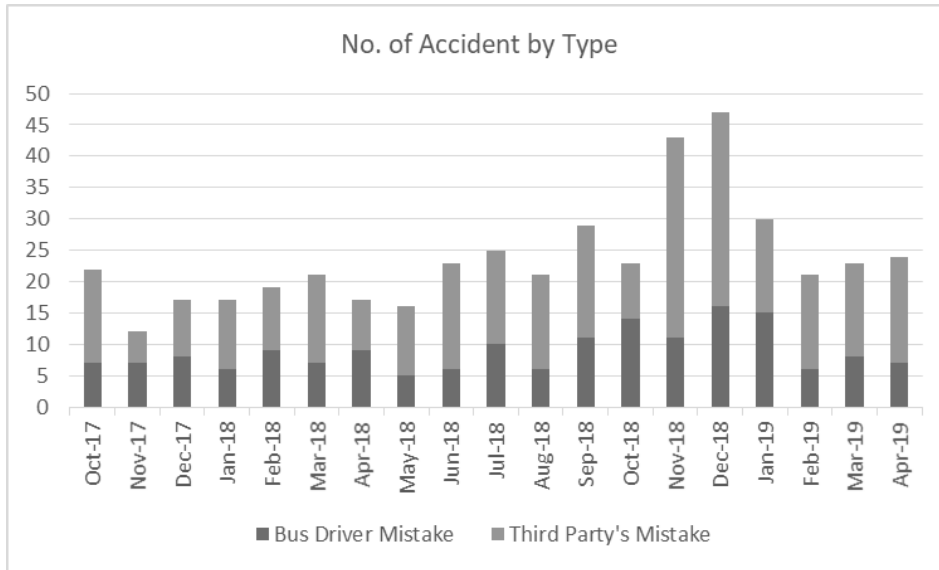


1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

(1) Summary of accident under CBA in 2018/2019

Month	Traffic Accident			Month	Traffic Accident		
	Occurance	Accident rate	CBA driver's mistake		Occurance	Accident rate	CBA driver's mistake
	(cases)	ases/100,000k	(% of cases)		(cases)	ases/100,000k	(% of cases)
Jan-18	17	3.11	-	Jan-19	30	3.96	50%
Feb-18	19	3.37	100%	Feb-19	21	2.73	29%
Mar-18	21	3.70	100%	Mar-19	23	2.96	35%
Apr-18	17	3.03	100%	Apr-19	24	3.45	29%
May-18	16	2.84	100%	May-19			
Jun-18	23	4.24	100%	Jun-19			
Jul-18	25	4.54	75%	Jul-19			
Aug-18	21	3.60	100%	Aug-19			
Sep-18	29	5.46	40%	Sep-19			
Oct-18	23	3.57	100%	Oct-19			
Nov-18	43	6.24	33%	Nov-19			
Dec-18	47	6.70	75%	Dec-19			
Total in 2018	301	4.27	83.9%	Total in 2019	98	2.64	35.6%

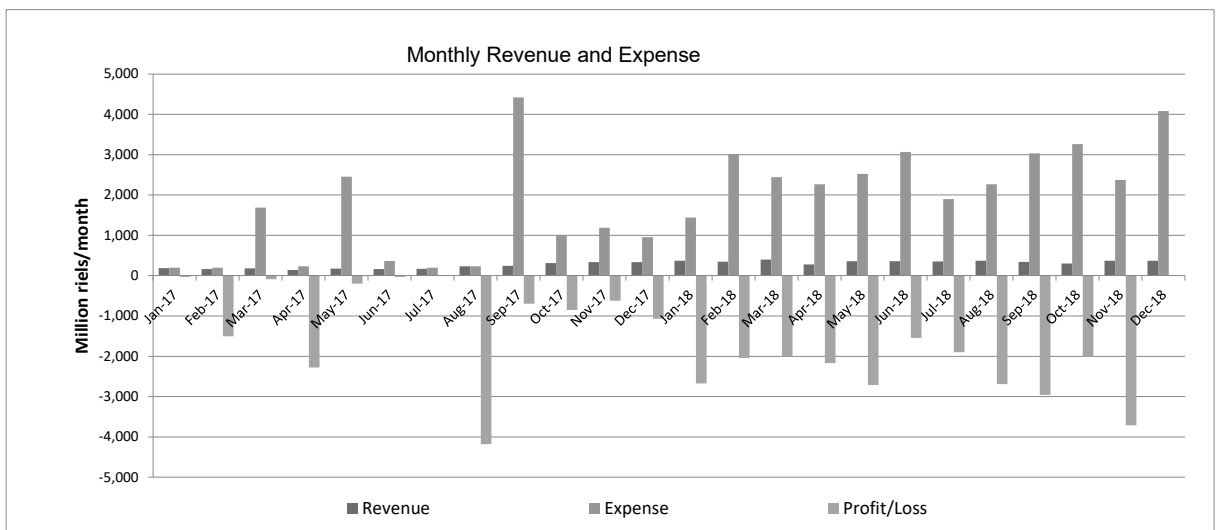
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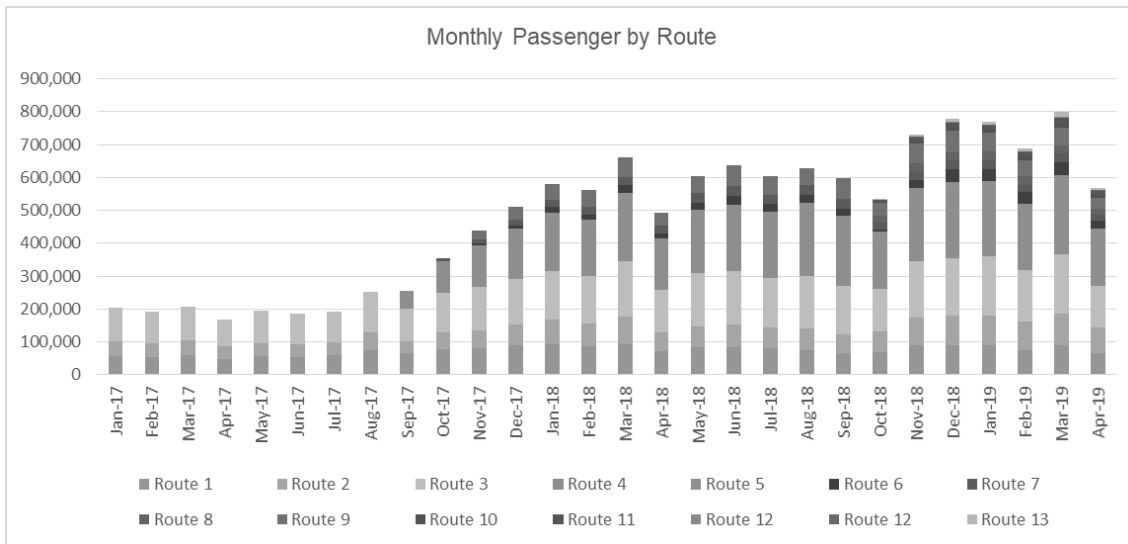
1.3.4. Output 4: Improvement of Business Management Capacity of CBA

(1) Summary of Revenue/Expense under CBA in 2017/2018

Revenue & Cost 2017				Revenue & Cost 2018			
Month	Revenue (mil.Riels)	Expense (mil.Riels)	Profic/Loss (mil.Riels)	Month	Revenue (mil.Riels)	Expense (mil.Riels)	Profic/Loss (mil.Riels)
Jan-17	184	196	-12	Jan-18	371	1,441	-1,070
Feb-17	166	196	-30	Feb-18	348	3,018	-2,670
Mar-17	182	1,685	-1,502	Mar-18	397	2,442	-2,045
Apr-17	143	230	-87	Apr-18	275	2,264	-1,989
May-17	175	2,454	-2,279	May-18	356	2,527	-2,171
Jun-17	165	364	-199	Jun-18	357	3,069	-2,712
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689
Oct-17	313	1,009	-696	Oct-18	300	3,262	-2,962
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712
Total 2017	2,638	13,129	-10,491	Total 2018	4,202	31,677	-27,474



(2) No. of passenger by route up to April 2019



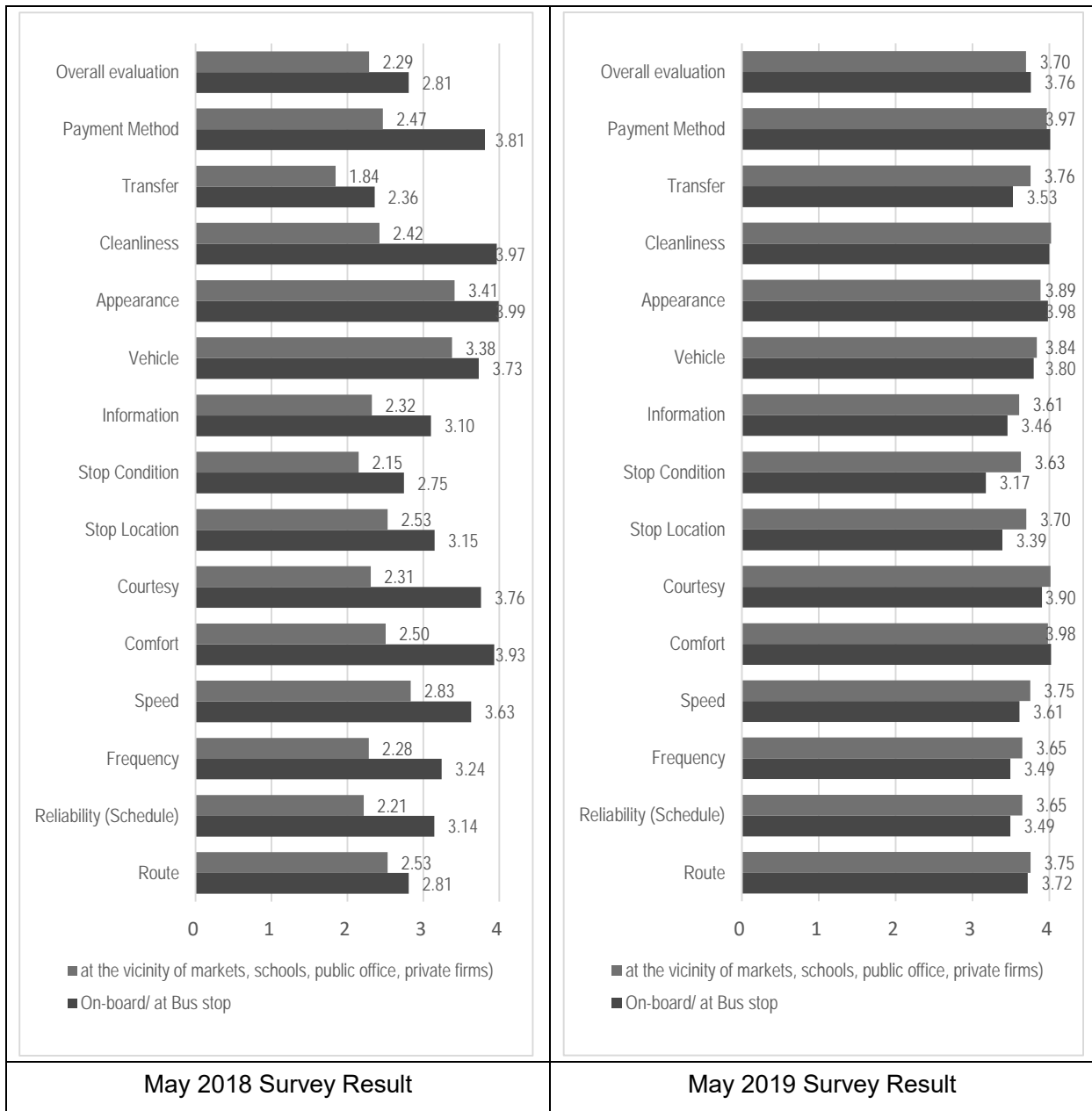
(3) No. of free/paid passenger up to April 2019



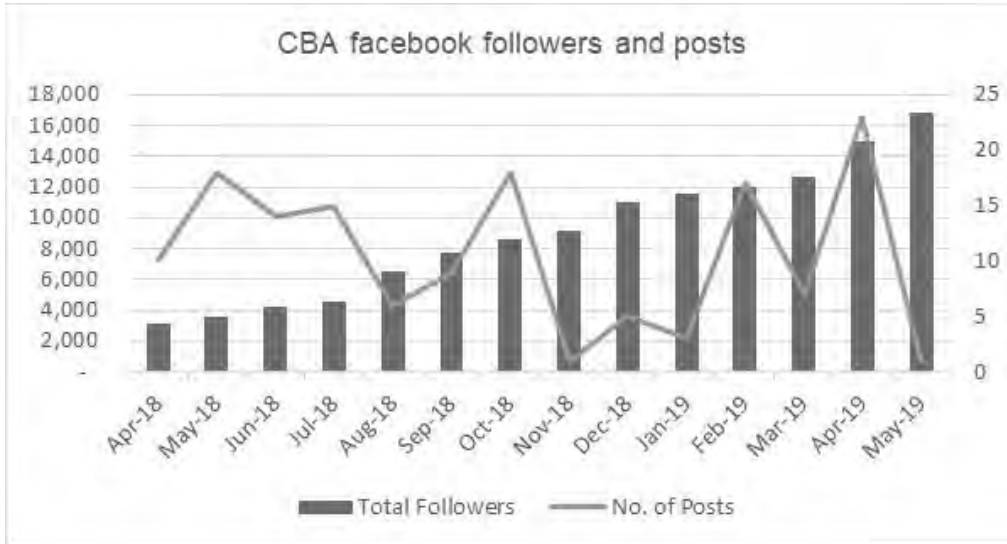
1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport
 Priority Measures of CBA and DPWT/PPCA

(1) Local perception for city bus service (Summary result)

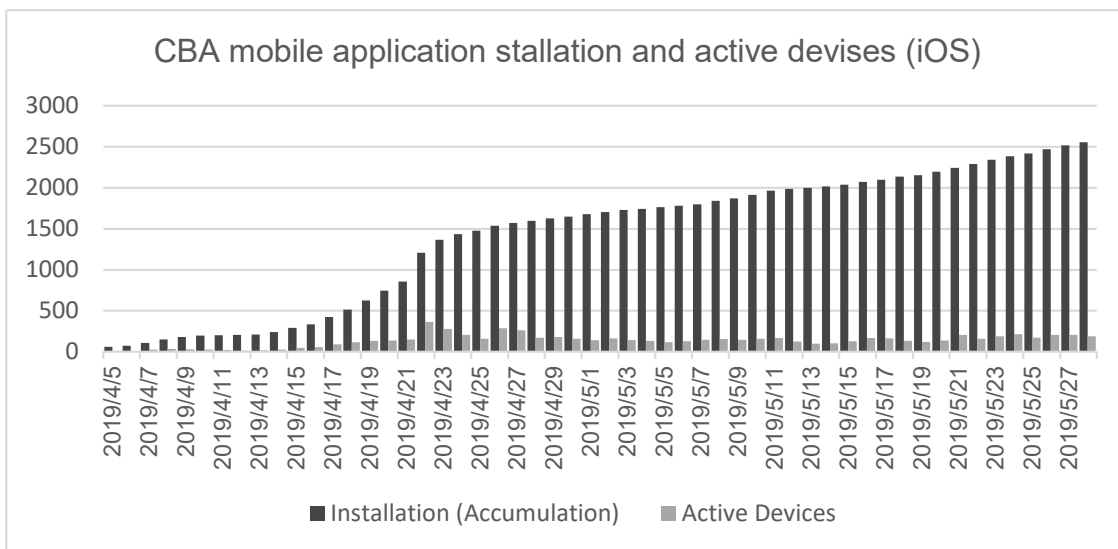
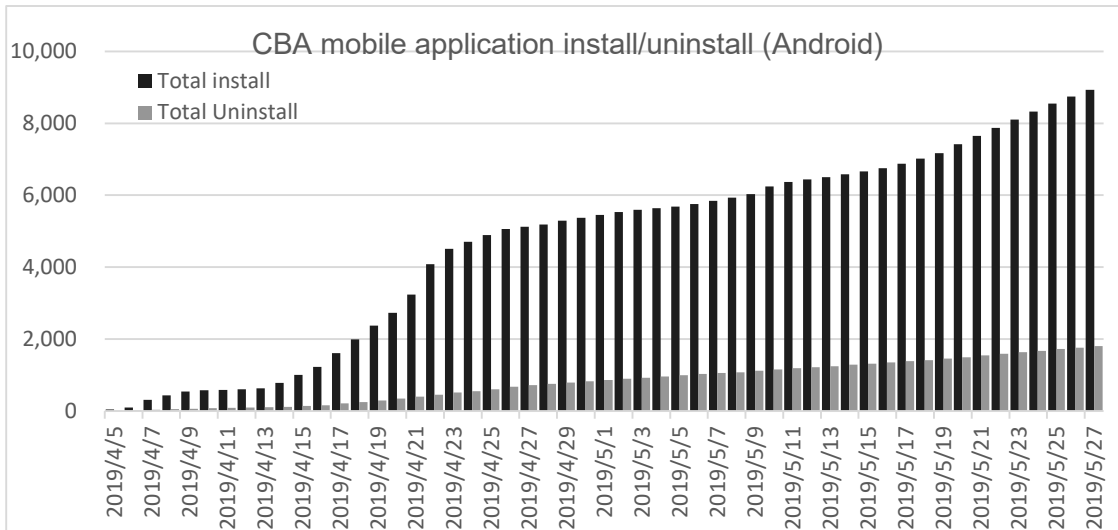
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(2) CBA's Facebook follower



(3) CBA's Mobile Application Download



1.4. Achievement of Output

The achievement level of each output is summarized below.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer's level	60%*	<ul style="list-style-type: none"> - A number of workshops/seminars conducted for CBA management and staffs - A study trip carried out in Malaysia and Singapore (Feb 2018) and in Japan (Feb 2019) and network plan and operation scheme studied - CBA developed bus route/fleet deployment plan and implemented Phase 2 network and operation plan. - Capacity evaluation survey to be conducted in June 2019
- Bus operation manual is developed	70%	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017 - Roster plan developed and tested in Line 9. - Phase 1 network and operation practice reviewed - Bus network and operation plan (Phase 2) drafted and approved by PPCA Governor - Phase 2 (Line 1-13) implemented by Oct 2018
- Bus operation system/model is established	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - ICT-based Bus Management System developed in May 2019
- Bus operation is reviewed and revised based on data collected	80%	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9.

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		- Phase 1 network and operation practice reviewed and Bus network and operation plan (Phase 2) developed and implemented
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1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 2	Achieved	Activities completed
- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level	50%*	<ul style="list-style-type: none"> - Recruitment plan prepared and approved by PPCA - CBA recruited chief maintenance mechanics by April 2018 - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses - A number of workshops conducted for CBA management and staffs - A study trip carried out in Malaysia and Singapore and in Japan drivers/fleets management studied - Capacity evaluation survey to be conducted in June 2019
- Bus vehicle maintenance manual is developed	80%	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates, prepared - A number of workshops conducted for CBA maintenance mechanics
- Bus inspection is routinely conducted, following maintenance manual	80%	<ul style="list-style-type: none"> - Bus operation and maintenance for Korean and Chinese bus reviewed - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA regularly carried out periodic inspection and maintenance for Chinese and Japanese buses - CBA also carried out maintenance for

		initial defects for Japanese buses
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1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	70%	- Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management - Driver's operation manual developed by bus fleet suppliers - A study trip carried out in Malaysia and Singapore and in Japan drivers/fleets management studied - A number of workshops conducted for CBA management and staffs
- Conductor work manual is developed	NA	NA
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	50%*	- 16 AM/PM chief drivers involved in a series of workshops - A number of workshops conducted by chief drivers - Capacity evaluation survey to be conducted in June 2019
- All drivers have completed the driver training and passed training	100%	- Drivers driving record collected and analyzed - Drivers paper and practical tests were conducted during recruitment for Japanese buses - Only drivers who passed paper and practical tests employed by CBA
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	NA	NA
- All conductors have completed the conductor training and passed training	NA	NA
- Safety management system is developed	20%	- Traffic accident data collected and analyzed - System supplier for safety driving system surveyed to study a business model

1.4.4. Output 4: Improvement of Business Management Capacity of CBA (* to be

revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	50%*	<ul style="list-style-type: none"> - A number of workshops conducted for CBA management and staffs - CBA regularly prepared budget plan as well as revenue/cost reports - Capacity evaluation survey to be conducted in June 2019
- Financial statements are prepared	80%	<ul style="list-style-type: none"> - Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement - CBA regularly prepared budget plan as well as revenue/cost reports
- Operation cost model and passenger database are developed	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus operation are assessed	60%	<ul style="list-style-type: none"> - Bus passenger and non bus passenger interview survey conducted in Aug 2017 - Needs in bus operation assessed - Monitoring survey for bus and non bus passenger conducted in May 2018 and May 2019 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider - CBA carried out dissemination workshops involving all Districts in Phnom Penh in June 2018 and June 2019
- Business plan is formulated and reflects on budget plan	40%	<ul style="list-style-type: none"> - Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared - CBA's new legislation drafted to upgrade to Public Administration Enterprise - PPCA assigned private advertisement company, initiated advertisement, wrapping Chinese/Korean buses and developed nearly 170 sheltered bus

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		stops
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	- BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.
- Cashless ticketing system is developed	80%	- CBA introduced Wing's NFC card - CBA introduced ACLEDA's QR code - JICA introduced smart phone based ticketing system

1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level	30%*	- A number of workshops conducted for CBA and DPWT - A study trip carried out in Malaysia and Singapore and in Japan bus priority measures studied - Capacity evaluation survey to be conducted in June 2019
- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	40%	- Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed by JCC members - CBA submitted a concept plan as well as budget plan to PPCA - Action plan for priority measures and mobility management scheme prepared - A planning guidebook for mobility management drafted
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	80%	- Bus depot layout plan prepared and approved by PPCA - Construction of bus depot completed - Bus facilities (Bus stops/signs) for Phase 1 designed and installed - Bus facilities (Bus stops/signs) for

		Phase 2 designed and installed - PPCA assigned private advertisement company and developed nearly 170 sheltered bus stops - A design guidebook for bus related facilities drafted
- Bus information and location system is developed	80%	- Bidding documents for bus operation and management system completed - GPS installed in all City Buses and bus monitoring and management system developed - Training on bus monitoring and management system to be implemented

1.5. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	100%	- Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 lines by Nov 2017 - Phase 2 bus network and operation plan developed and approved by PPCA - Bus network increased from 8 lines to 13 lines
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	70%	- Bus service rate* improved from 67.5% in 2016 to 89.6% as of Mar 2018 - Bus service rate dropped 77.8% as of Dec 2018 and 69.4% as of May 2019 due to increased need for maintenance and traffic congestion. Note: Bus service rate is No. of actual bus operation against bus frequency based on CBA' operation plan.
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	80%	- Japanese buses (80 units) regularly inspected and initial and periodic maintenance carried out at the mileage - Chinese buses (98 units) also regularly inspected and maintained by CBA
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	80%	- Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 2.01/100,000km (CBA drivers as first party) (5.50/100,000km

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		in total) as of Oct - Dec 2018 - Traffic accident bus caused improved to 1.20/100,000km (CBA drivers as first party), 2.64/100,000km in total accident as of Jan – Apr 2019
- Level of perception of the bus improves and customer satisfaction of bus users improves.	80%	- Bus passenger and non bus passenger interview survey conducted and baseline collected to monitor the performance in May 2018 and May 2019 - Overall satisfaction of bus services level significantly improved from 2.81 (Overall service evaluated as Good) to 3.72 (as Excellent) - Public comments delivered through Facebook and utilize for raise customer satisfaction level
- Bus operation cost covered by the revenue in 2020.	15%	- Bus revenue covers 20 % of bus operation cost between Jan and Sep 2017 - Bus revenue covers 13 % of total expenses in 2018
- Average operation speed maintained at 15 km/h in 2020	80%	- Average operation speed maintained at 14.1km/h between Jan-Oct 2018 - Average operation speed slightly dropped at 13.6km/h between Jan -May 2019.

1.6. Changes of Risks and Actions for Mitigation

Not applicable

1.7. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.8. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Not applicable

1.10. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

2.1. Summary

As agreed in the 2nd JCC held in May 2018, both PPCA/CBA and JICA confirmed the scope of public transport priority measures as a pilot project and the expenses for implementation of the pilot project be borne by both JICA (PTPS: Public Transport Priority Signal) and PPCA (bus priority lane, parking management and para-transit management). There is a risk that PPCA cannot provide a sufficient amount of fund to implement agreed public transport priority measures on time.

2.2. Cause

Lack of funding to implement agreed public transport priority measures

2.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Re-scoping/redesign to minimize cost (project area, scope of pilot project)
- Rescheduling (JICA implement in 2019 and CBA in 2020)
- Other funding source (e.g., ADB TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development)

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

The following organizations are responsible for each action.

- Re-scoping/redesign to minimize cost (Expert Team, PPCA/CBA)
- Rescheduling (Expert Team, PPCA/CBA)
- Other funding source (ADB and others)

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved

during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 6

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.6 (Term: Jun. 2019 – Nov. 2019)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 10th December 2019

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: 3 organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See **Annex 5: Inputs provided**.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management
 - 10) Mobility Management (1/2/3)

- 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was carried out from 25th Feb to 2nd March 2018 in Malaysia and Singapore. The 2nd study trip was carried out from 16th to 26th Feb 2019 in Japan. The 3rd study trip was carried out from 6th to 11th October 2019 in Vietnam and Singapore. (See **Annex 7: Reports: A Study Tour Completion Report (Hanoi and Singapore)**)
3. Machinery and equipment:
Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. See **Annex 5: Inputs Provided**
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*)
4. 1st JCC (*9th May 2017*)
5. 2nd JCC (*8th June 2018*)
6. 3rd JCC (*4th July 2019*) (See **Annex 8: Meeting/Workshop Materials**)
7. Other significant progress
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)
 - ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of mechanics (*occasionally*)
 - vi. Employment of drivers/office staffs (*occasionally*)
 - vii. Procurement of bus operation management system (BOMS) (service started from June 2019)
 - viii. Procurement of bus location system (service started from July 2019)
 - ix. Development of training video for bus inspection and maintenance (completion by Oct. 2019)
 - x. Development of training video for safety driving for bus driver (completion by Nov.2019)

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- Output 1 Bus operation capacity of CBA is improved
- Output 2 Maintenance and inspection capacity on bus vehicles of CBA is implemented
- Output 3 Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA
- Output 4 CBA's business management capacity is improved
- Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

List of Workshops/Technical Trainings (up to Nov. 2019, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output
1	20 Jan. 2017	Half Day	Work Plan Outline	10	1
2	24 Feb. 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	4 Mar. 2017	Haft Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun. 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	5 Jul. 2017	Half Day	GPS System	13	5
6	11. Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11. Jul 2017	Half Day	Bus Stop Design Gide	12	1
8	11. Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	6 Sept. 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	8 Sept. 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sept. 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct. 2017	Half Day	Matters agreed between CBA, Jica expert and CJEC	9	5
13	31 Oct. 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	7 Nov. 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov. 2017	Half Day	Implement Bus Operation Management System	14	5
16	7 Dec. 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec. 2017	Half Day	Mobility Management	21	5
18	15 Dec. 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec. 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec. 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec. 2017	Half Day	3 rd Workshop for the management and the	12	4

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The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	No. of participants	Output
			accounting		
22	21 Dec. 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan. 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan. 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb. 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ)	16	1
26	22 Feb. 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb. 2018	Half Day	Bus Driving Training (2)	16	3
28	27 Feb. 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1
29	3 Mar. 2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	1
30	9 Mar. 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	4 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	5 Jun 2018	Haft Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	6 Jun 2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5

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No.	Date	Duration	Title of Training	No. of participants	Output
40	7 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	7 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	7 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	5
43	20 Jun 2018	Haft Day	Bus Operation Training	15	3
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	5 Sep. to 07 Oct. 2018	33 Days	Bus driving training	No.1: 60 No.2: 60 No.3: 40 No.4: 40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	5
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
51	14 Dec. 2018	Half Day	Progress Report	11	3
52	19 Dec. 2018	Half Day	Safety Operation	10	3
53	19 Dec. 2018	Half Day	Mobility Management Guideline	10	3
54	25 Nov.-22 Dec. 2018	22 Days	Chief Driver Training, New Driver Training and Mechanic Training	76	5
55	21 Jan. 2019	Half Day	Fare Policy	13	4
56	31 Jan. 2019	Half Day	Discussion on CBA's Condition and Registration Book	10	4
57	21 Mar. 2019	Haft Day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	5
58	03 Jun. 2019	Half Day	Dissemination Campaign at Khan Doun Penh	72	5
59	05 Jun. 2019	Half Day	Dissemination Campaign at Khan Toul Kork	73	5
60	06 Jun. 2019	Half Day	Dissemination Campaign at Khan Mean Chey	110	5
61	06 Jun. 2019	Half Day	Dissemination Campaign at Khan Cham Kar Morn	97	5
62	07 Jun. 2019	Half Day	Dissemination Campaign at Khan Chbar Ampov	92	5
63	10 Jun. 2019	Half Day	Dissemination Campaign at Khan Dangkor	86	5
64	11 Jun. 2019	Half Day	Dissemination Campaign Khan Por Sen Chey	114	5
65	13 Jun. 2019	Half Day	Dissemination Campaign Khan 7 Makara	49	5
66	13 Jun. 2019	Half Day	Dissemination Campaign Khan Sen Sok	52	5
67	14 Jun. 2019	Half Day	Dissemination Campaign Khan Ressey Keo	90	5
68	20 Jun. 2019	Half Day	Dissemination Campaign Khan Chhrouey Chang Va	46	5
69	21 Jun. 2019	Half Day	Dissemination Campaign Khan Preak Phnov	104	5
70	02 Jul. 2019	Half Day	Bus Scheduling improvement for CBA (Training)	25	1

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No.	Date	Duration	Title of Training	No. of participants	Output
71	05 Jul. 2019	Half Day	Bus Maintenance, Explanation (Roll Call & Bus Schedule)	7	2
72	22 Jul. 2019	Half Day	MM Action Plan Final, Concept Plan of Priority Measures Route Sele	9	5
73	22 Jul. 2019	Half Day	4 th Management Workshop Financial Simulation and Cost Reduce	11	4
74	10 Jul. 2019	Half Day	Roll Call Training	50	3
75	15-19 Jul. 2019	5 Days	New Driver Training	18	3
76	30 Jul. 2019	Half Day	Driver Training Report, Promotion Video for Phnom Penh City Bus and The Progress of Bus Operation & Management System.	13	3
77	13 Aug. 2019	Half Day	Bus Operation Plan and Deployment Plan	9	1
78	22 Aug. 2019	Half Day	Scope of Pilot Bus Priority Measures	8	5
79	03 Oct. 2019	Half Day	Rapid Bus Project 2019-2010	19	5
80	22 Oct. 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108	5
81	24 Oct. 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64	5
82	25 Oct. 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89	5
83	25 Oct. 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115	5
84	05 Nov. 2019	Half day	Assembly Meeting (Utilization of Training video for drivers and mechanics)	Appx. 200 (All available staff of CBA)	2
85	07 Nov. 2019	Half Day	Bus Maintenance	17	2

< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)

4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (Sep 2018)
12. Stepwise implementation of Phase 2 (Line 1-13 start operation on 1st Oct 2018, 235 buses are in operation)
13. New bus depot operation (*starting in Feb 2019*) and completion of stepwise implementation of Phase 2 (*Feb 2019*)
14. Monitoring of Phase 2 operation plan (*On-going*)
15. Implementation of capacity assessment survey (June 2019)
16. Bus Operation Management System (BOMS) start official operation (July 2019)
17. Procurement of generator to prevent the system outages due to power outages (Nov. 2019)
18. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)



Screen shot of Bus Operation and Management System (BOMS)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
10. Recruitment of Chief Mechanic (*April 2018*)
11. Recruitment of 18 Mechanics (*by May 2018*)
12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan’s Grant Aid)
13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
15. Implementation of periodical inspection and maintenance (5,000km initial inspection and oil change) (*Sep 2018 – onward*)
16. New bus depot operation (*from Feb 2019*) and set-up of inspection and maintenance office/storage
17. Implementation of capacity assessment survey (*June 2019*)
18. Development of movie for bus inspection and maintenance (*Oct. 2019*)
19. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)

- 1) Interview survey to driver/mechanics license
- 2) Interview survey to drivers/conductors/dispatchers
- 3) On-board survey on drivers/conductors and driving skills
- 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (Sep. 2017)
3. Study of safety management system and drivers/conductors training in Japan (July 2017)
4. Participate in intensive training course organized by Eagle Bus Corp. (Nov 2017)
5. Recruitment/training to drivers for 98 Chinese buses (Aug – Nov 2017)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (Nov 2017)
7. Monitoring on accidents of bus (Sep 2017 onward)
8. Preparation of Safety Driving Manual and training on safety driving (Feb 2018)
9. Preparation of Driver's training material (Aug 2018) (under cooperation with the supplier under Japan's Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (May to Oct 2018)
11. Deployment of driver and fleet for Phase 2 operation plan (Sep 2018)
12. Intensive training for selected reckless drivers (Dec 2018)
13. Implementation of capacity assessment survey (June 2019)
14. Development of movie for safety driving (completion by Nov. 2019)
15. Procurement of Alcohol Detector (On-going)
16. Monitoring of fleet and driver deployment plan and operation (On-going)
17. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 4 "Improvement of Business Management Capacity of CBA"** are undergoing.

1. Baseline survey (Sep and Dec 2017)
 - 1) Data collection of CBA's financial statement
 - 2) Data collection of PPCA's financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA's accounting office
 - 5) Input data collection for BOM model
2. Bus business management (Sep 2017 to onward):
 - 1) Data analysis of CBA and PPCA's financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination and discussion on business plan of company bus
3. ICT-based management (May 2017 to onward):

- 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (Nov 2017 – Mar 2018)
 - 4) Procurement of ICT equipment (Phase 1: GPS and Server) (Sep 2018)
 - 5) Procurement of AEON mobile payment system (Sep 2018)
 - 6) Procurement of ICT equipment/software (Phase 2: Bus Operation Management System: BOMS) (Start operation from June 2019)
 - 7) Procurement of generators for continuous operation of BOMS and mobile applications, assuming server down due to power outage (Oct. 2019)
4. Strengthening of City Bus Authority (May 2018 to onward):
- 1) Official request to upgrade the Authority to Public Enterprise by MEF (May 2018)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (Oct 2018)
 - 3) Draft legislation for upgrading Public Administration Enterprise (Jan 2019)
 - 4) Implementation of capacity assessment survey (June 2019)
5. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 8: Meeting/Workshop Materials**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (July and Aug 2017)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (July 2017)
3. Review of 2014 Urban Transport Master Plan (July 2017)
4. Preparation of a concept plan of public transport priority measures (July 2017)
5. Preparation of a concept mobility management plan (Dec 2017)
6. Preparation of bus depot layout plan (May – Aug 2017)
7. Approval of bus depot design by Governor (Dec 2017)
8. Preparation of bus color design (Dec 2017)
9. Technical advice on bus depot design (Jan - Feb 2018)
10. Examination and discussion on Public transport priority measures (Jan - Feb 2018)
11. Implementation plan on mobility management workshop (Mar 2018)
12. Implementation plan on public transport priority measures (Mar 2018)
13. Implementation of series of dissemination campaign (May – June 2018)
14. Monitoring of bus depot development (Aug 2018 – Jan 2019)

15. Monitoring of bus facility development (*Aug 2018 – Jan 2019*)
16. Preparation of Design Guides (*Dec 2017 – onward*)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development) (*Nov 2018 – onward*)
18. Implementation of bus user/ non-bus user survey (*May 2019*)
19. Implementation of series of dissemination campaign for public bus use (*June 2019*)
20. Assistance to develop mobile application for Bus Location System (Start operation from July 2019)
21. Action plan on mobility management (*On-going*)
 - i. Bus map review and revision (*Feb 2019 – onward*)
 - ii. *Monitoring bus facilities condition (Feb 2019 – onward)*
 - iii. *Preparation of mobility management action plan (Feb 2019 – onward)*
22. Action plan on public transport priority measures (*On-going*)
 - i. Coordination meeting with a traffic control supplier on PTPS (*April 2019*)
 - ii. Set-up WG (Working Group) on Pilot Project (*July 2019 – onward*)
 - iii. Selection of 6-shortlist projects (*July 2019*)
 - iv. Assistance to implement action plan (*July 2019 – onwards*)
23. Implementation of capacity assessment survey (*June 2019*)
24. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)



Screenshot of Mobile Application for bus location System

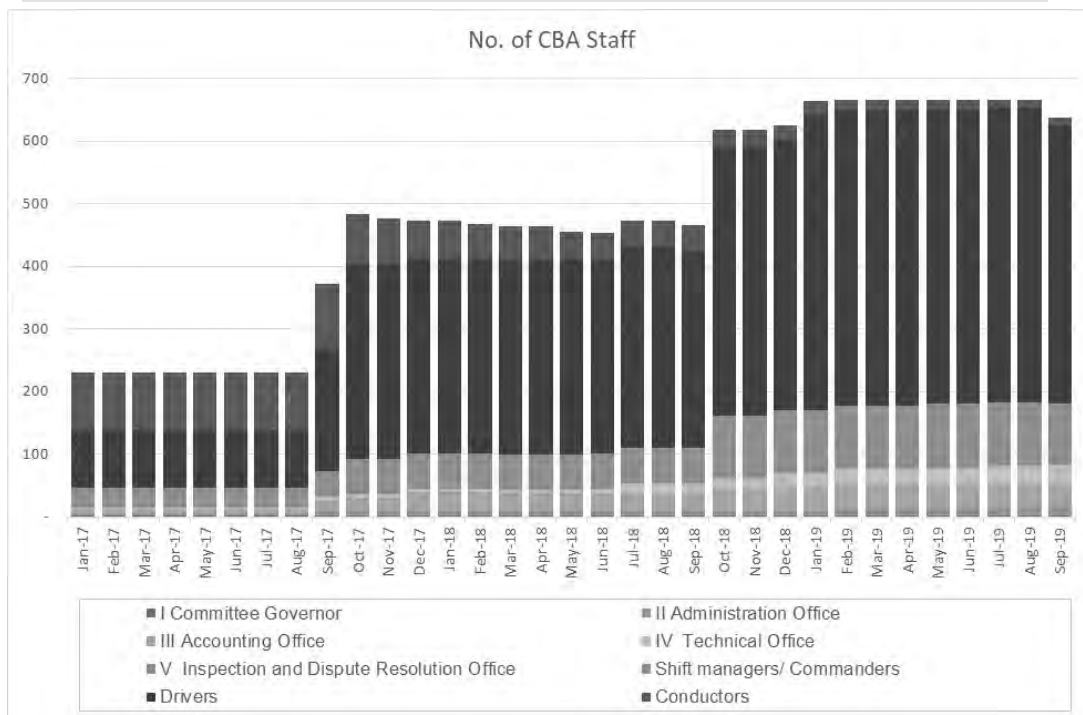
1.3. Monitoring Indicators

The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured below.

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

(1) No. of staff by section up to Sep. 2019

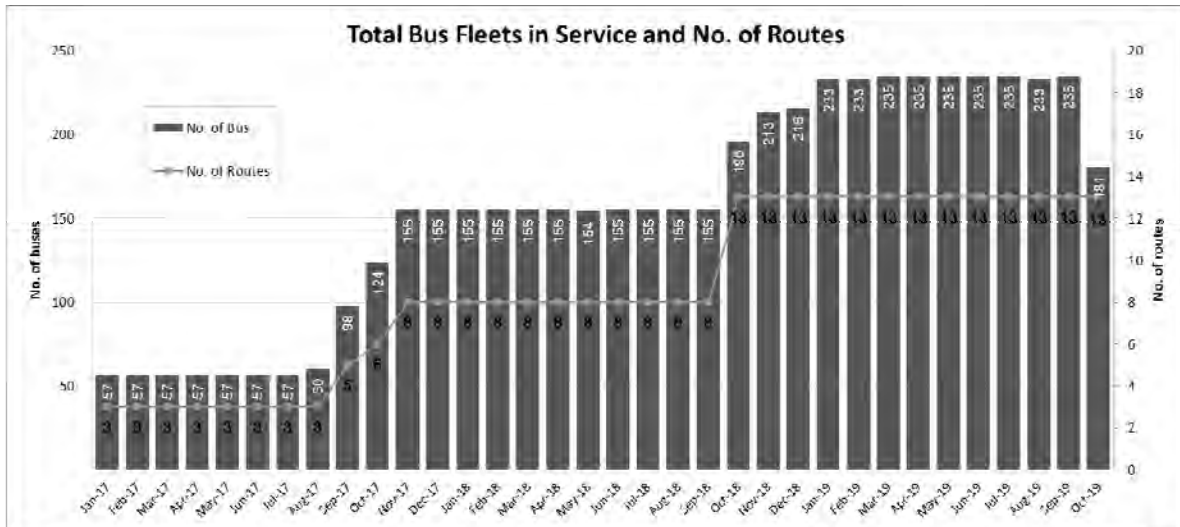
CBA decided to suspend the operation 54 Korean buses out of 57 Korean buses by September 2019. As a result, the number of bus drivers has become excessive, and CBA has reduced the number of drivers from 470 to 444.



(2) No of bus lines and fleets up to October 2019

The reason for the decrease of the total number of bus in October 2019 is CBA decided to cancel the operation of 54 Korean buses out of 57 Korean buses due to its many aging failures. In total 181 buses are in service as of November 2019, it includes 80 Japanese buses, 98 Chinese buses, and 3 Korean buses.

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(3) Summary of bus operation service level in 2018/2019

Year 2018

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

Year 2019

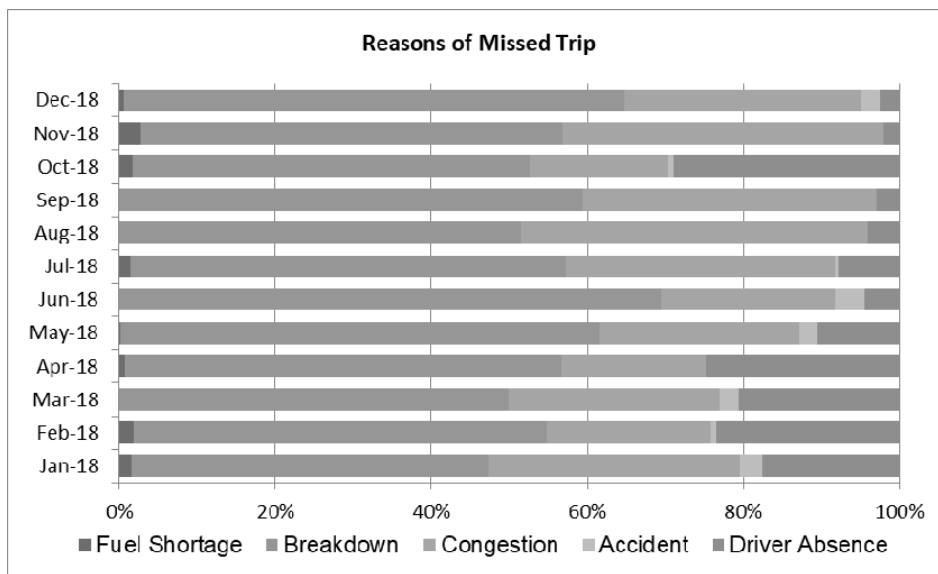
In September 2019, CBA decided to discontinue the operation of most Korean buses, reducing the number of operating Korean buses from 57 to 3 buses. This has resulted in the deterioration of monitoring indicators related to bus operation service level in October 2019.

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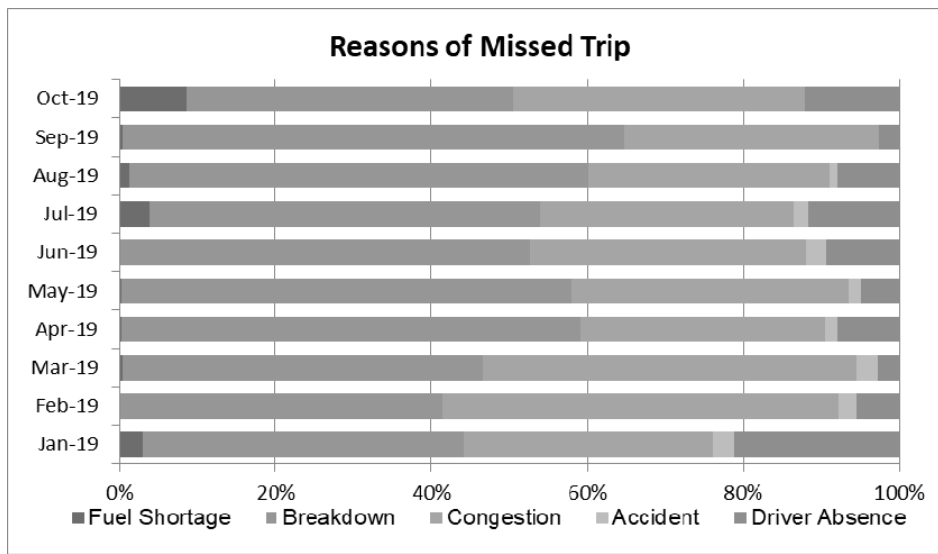
Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-19	13	233	839	652.5	22.2%	25,272	758,163	13.7
Feb-19	13	233	870	675.0	22.4%	25,681	770,418	13.7
Mar-19	13	235	889	672.5	24.3%	25,907	777,198	13.8
Apr-19	13	235	853	604.5	29.1%	23,167	695,001	13.7
May-19	13	235	902	626.0	30.6%	23,849	715,464	13.0
Jun-19	13	235	878	605.5	31.0%	22,878	686,337	13.3
Jul-19	13	235	860	573.5	33.3%	21,961	658,839	12.0
Aug-19	13	233	865	524.0	39.4%	19,750	592,488	10.8
Sep-19	13	235	867	519.0	40.1%	20,033	600,993	11.2
Oct-19	13	181	619	403.0	34.9%	15,893	476,784	12.4
Nov-19		-	-	-		-	-	-
Dec-19		-	-	-		-	-	-
Total in 2019	13	181	844	586	30.6%	22,439	6,731,685	12.8

(4) Reasons of missed trip in 2018/2019

Year 2018

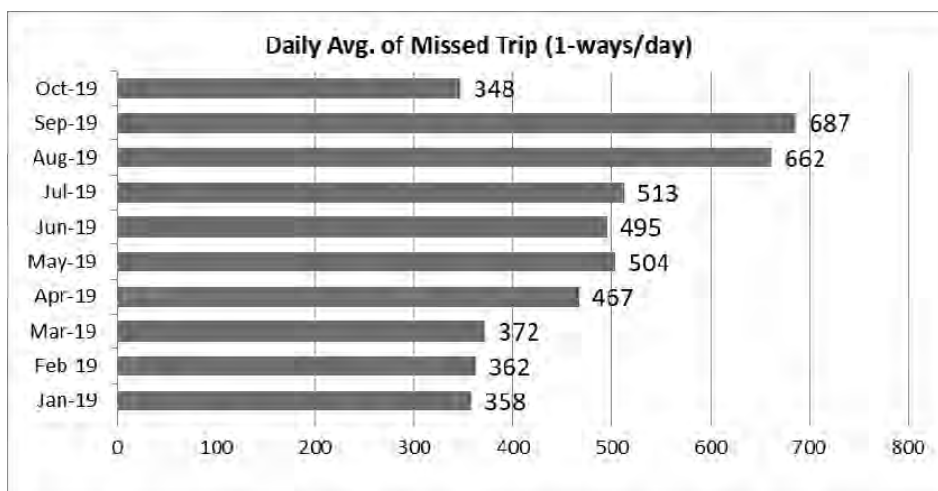


Year 2019



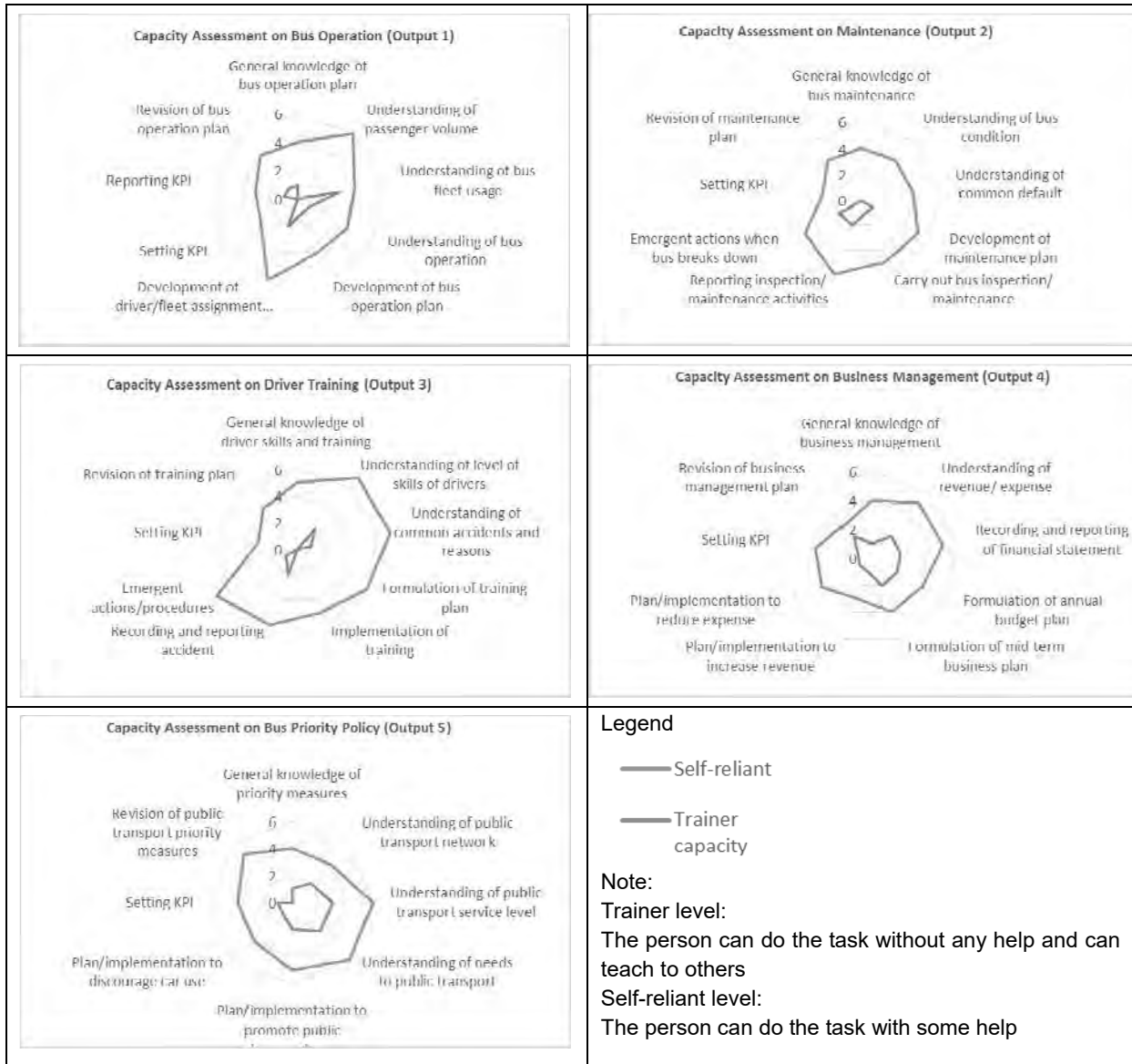
In October 2019, it is observed that many missed trip cases due to fuel shortage comparing September 2019. Based on the interview with bus despatchers, there are cases that LPG company which deliver fuels for CBA Depot and all terminals sometimes missed fuel delivery. It is necessary to take action to avoid these cases to improve service level.

On the other hand, in October 2019, “driver absence” increased rapidly as another major factor in missed trips. This is because, in the last week of September that is the holiday season in Laos, many drivers were unable to get day-off during the period when CBA rented buses and drivers as intercity buses. Therefore, as a special measure in October, the driver's holiday was increased, and the service level was lowered due to a shortage of drivers.



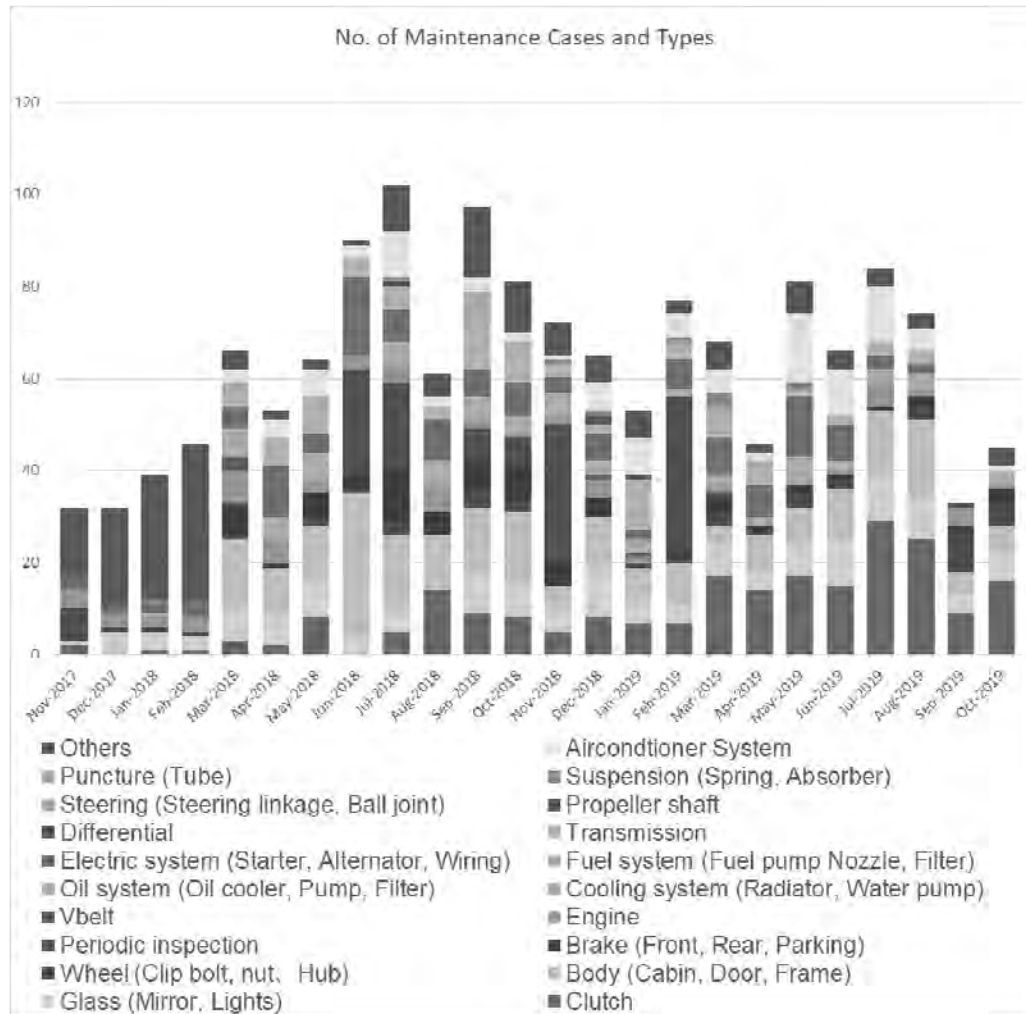
(5) Summary Results of Capacity Assessment for CBA Management in June 2019

Following charts show number of management members in trainer level (in blue) and self-reliant level (in orange) among 7 management staffs.



1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA


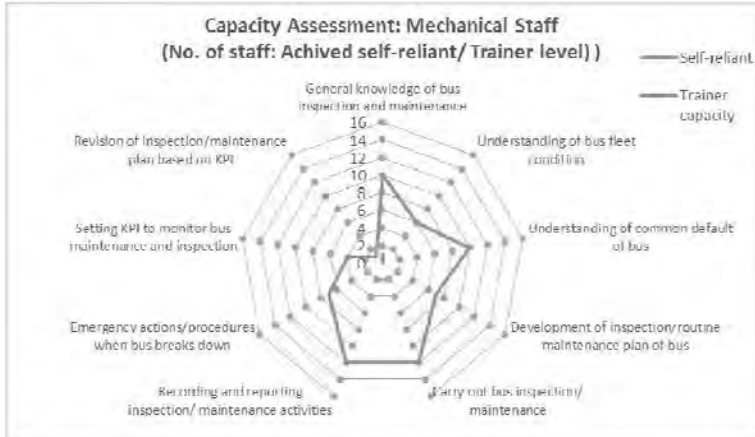
(1) No. of maintenance cases and types up to October 2019



(2) Capacity Assessment of CBA Mechanical Staff

A summary of capacity assessment for mechanical staff was carried out in June 2019. The overall average level of 16 CBA mechanical staff is still below 3 which is “I can do it with some supports”. To support this issue, the Project prepared a training video for bus inspection and maintenance in October 2019. It is expected to improve the capacity level of mechanical staff.

The assessment results for the individual indicators show that indicators related to KPI are particularly low. It is necessary to promote the understanding levels of KPI and related activities to cope with it.

<p>Capacity Assessment: Mechanical Staff (Average Level: 16 Staff)</p> 	<p><Capacity level> Level 1: I can't do it with any help Level 2: I can do it with some supports Level 3: I almost can do it with some help Level 4: I can do it without any help and can teach to others</p>
<p>Capacity Assessment: Mechanical Staff (No. of staff: Achieved self-reliant/Trainer level)</p> 	<p><Capacity level> Level 1: I can't do it with any help Level 2: I can do it with some supports Level 3: (Self-reliant level) I almost can do it with some help Level 4: (Trainer level) I can do it without any help and can teach to others</p>

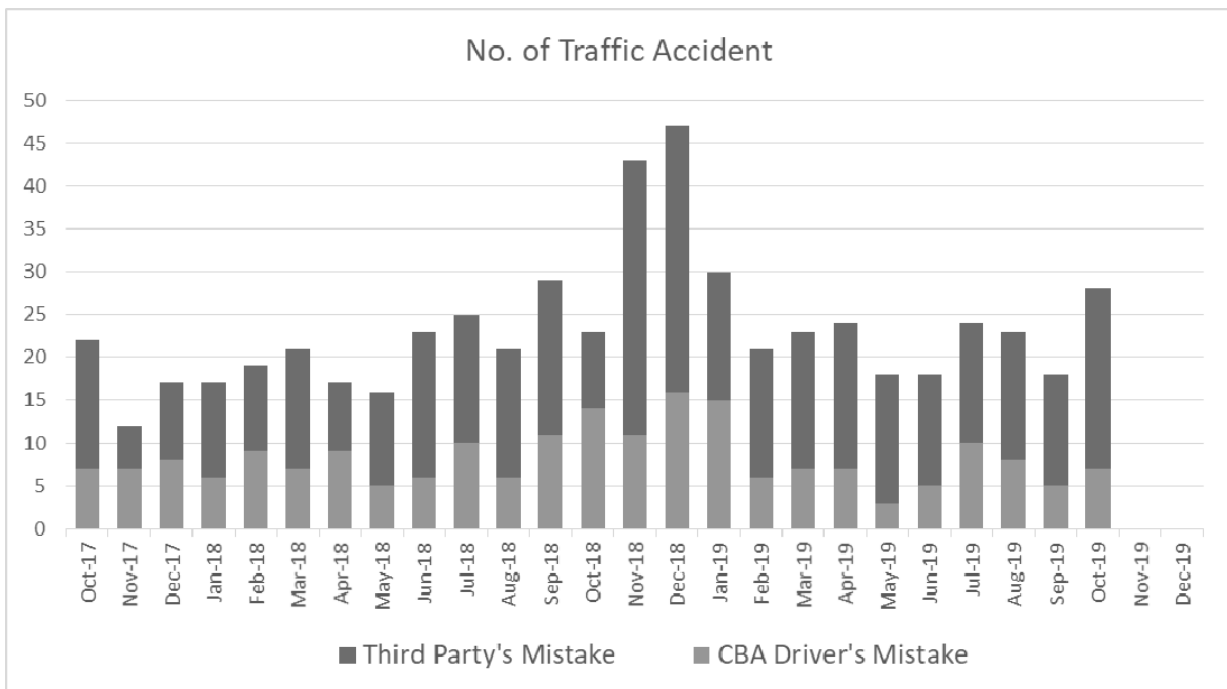
1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

(1) Summary of accident statistics in 2018/2019 (up to Oct. 2019)

The number of accidents that CBA drivers as first-party tend to decline in 2019. However, the total number of accidents has increased in October 2019 significantly comparing September 2019. This is because CBA rented 120 buses as intercity buses during holidays between September 26 and 30, 2019, thus the number of operating buses under CBA decreased during this period, so the number of accidents was smaller in September 2019.

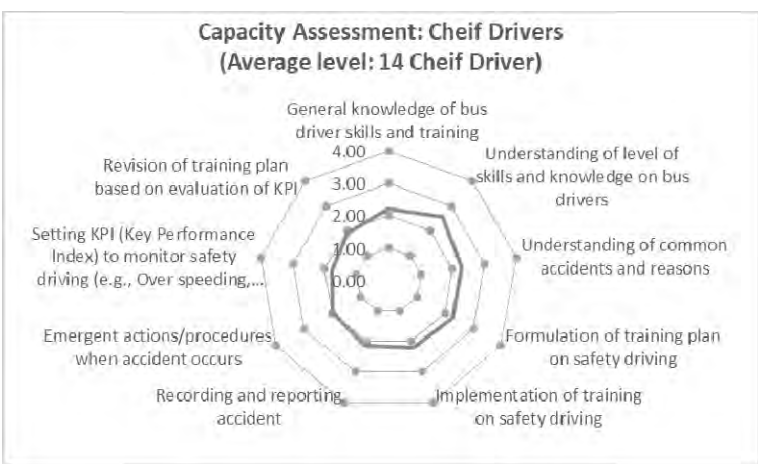
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Month	Traffic Accident			Month	Traffic Accident		
	Occurance	Accident rate	CBA driver's mistake		Occurance	Accident rate	CBA driver's mistake
	(cases)	(cases/100,000k)	(% of cases)		(cases)	(cases/100,000km)	(% of cases)
Jan-18	17	3.11	-	Jan-19	30	3.96	50%
Feb-18	19	3.37	100%	Feb-19	21	2.73	29%
Mar-18	21	3.70	100%	Mar-19	23	2.96	30%
Apr-18	17	3.03	100%	Apr-19	24	3.45	29%
May-18	16	2.84	100%	May-19	18	2.52	17%
Jun-18	23	4.24	100%	Jun-19	18	2.62	28%
Jul-18	25	4.54	75%	Jul-19	24	3.64	42%
Aug-18	21	3.60	100%	Aug-19	23	3.88	35%
Sep-18	29	5.46	40%	Sep-19	18	3.00	28%
Oct-18	23	3.57	100%	Oct-19	28	5.87	25%
Nov-18	43	6.24	33%	Nov-19	-		
Dec-18	47	6.70	75%	Dec-19	-		
Total in 2018	301	4.27	83.9%	Total in 2019	227	3.37	31.2%



(2) Capacity Assessment for CBA Drivers

Summary of capacity assessment for Chief Drivers in June 2019.



<Capacity level>
 Level 1:
 I can't do it with any help
 Level 2:
 I can do it with some supports
 Level 3:
 I almost can do it with some help
 Level 4:
 I can do it without any help and can teach to others



<Capacity level>
 Level 1:
 I can't do it with any help
 Level 2:
 I can do it with some supports
 Level 3: (Self-reliant level)
 I almost can do it with some help
 Level 4: (Trainer level)
 I can do it without any help and can teach to others

1.3.4. Output 4: Improvement of Business Management Capacity of CBA

(1) Summary of Revenue/Expense under CBA in 2017/2018/2019

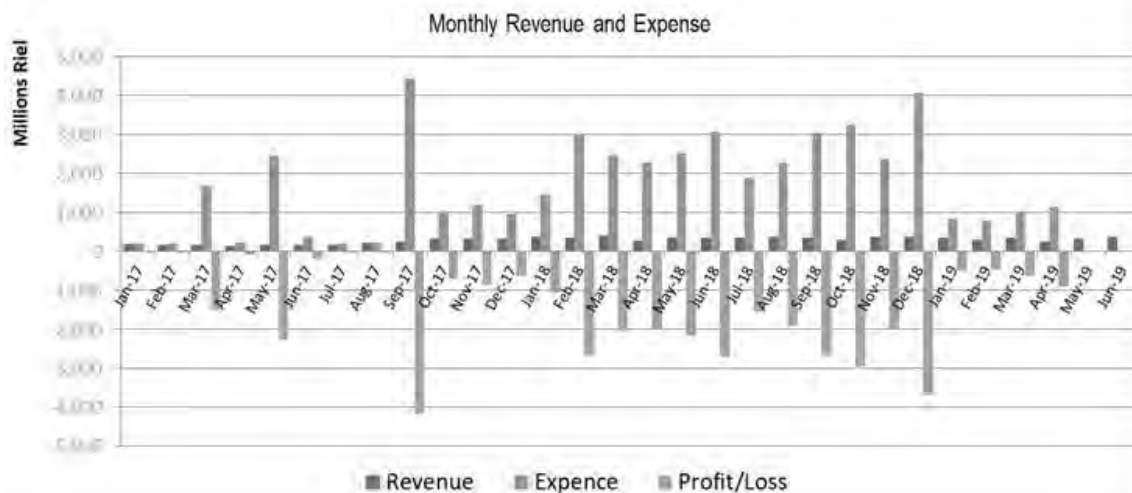
The CBA revenue and expense data for 2019 are still under scrutiny, and at first glance, it appears that the balance has improved significantly compared to 2018. In the future, it will be necessary to confirm and analyze data after revenue and expense data completed soon.

Revenue & Cost 2017				Revenue & Cost 2018				Revenue & Cost 2019			
Month	Revenue	Expeince	Profit/Loss	Month	Revenue	Expeince	Profit/Loss	Month	Revenue	Expeince	Profit/Loss
	(mil.Riels)	(mil.Riels)	(mil.Riels)		(mil.Riels)	(mil.Riels)	(mil.Riels)		(mil.Riels)	(mil.Riels)	(mil.Riels)
Jan-17	184	196	-12	Jan-18	371	1,441	-1,070	Jan-19	347	838	-491
Feb-17	166	196	-30	Feb-18	348	3,018	-2,670	Feb-19	309	782	-473
Mar-17	182	1,685	-1,502	Mar-18	397	2,442	-2,045	Mar-19	358	986	-628
Apr-17	143	230	-87	Apr-18	275	2,264	-1,989	Apr-19	243	1,144	-901
May-17	175	2,454	-2,279	May-18	356	2,527	-2,171	May-19	334	0	334
Jun-17	165	364	-199	Jun-18	357	3,069	-2,712	Jun-19	386	0	386
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546	Jul-19	0	0	0
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898	Aug-19	0	0	0
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689	Sep-19	0	0	0
Oct-17	313	1,009	-696	Oct-18	300	3,262	-2,962	Oct-19	0	0	0
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008	Nov-19	0	0	0
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712	Dec-19	0	0	0
Total 2017	2,638	13,129	-10,491	Total 2018	4,202	31,677	-27,474	Total 2019	1,975	3,749	-1,773

Note:

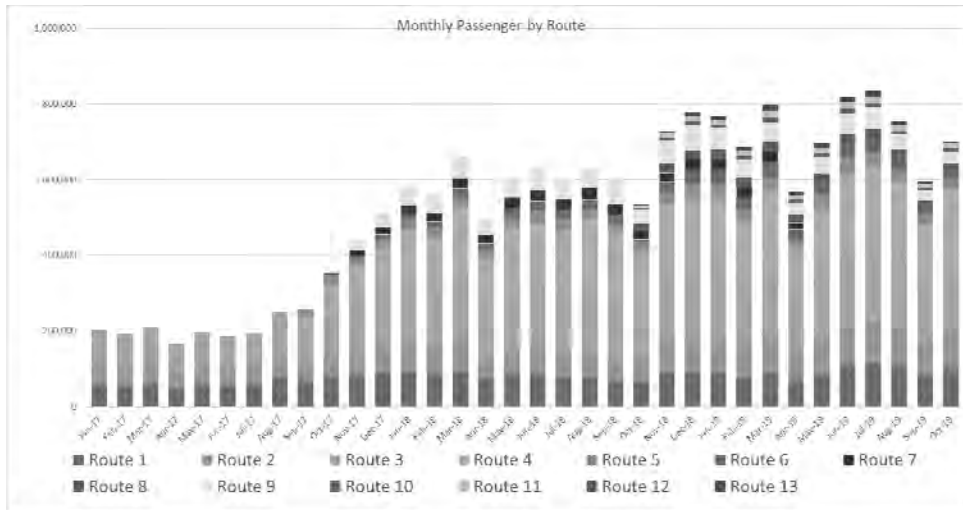
- Revenue data available up to June 2019, Expenditure data available up to April 2019 as of 15th November 2019
- Revenue and Expenditure data for 2019 is tentative
- Expenditure in May and June 2019 is under data collection

(2) Monthly Revenue and Expense

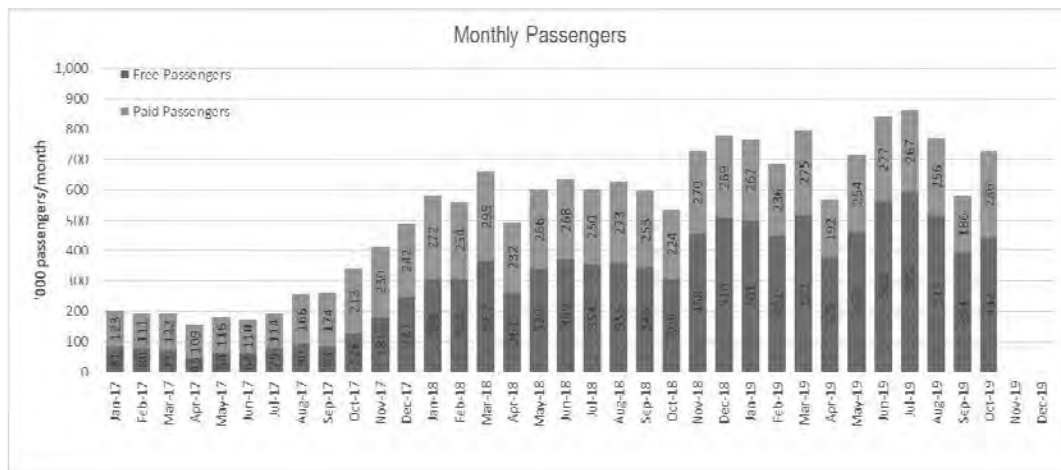


(3) No. of passengers by route up to October 2019

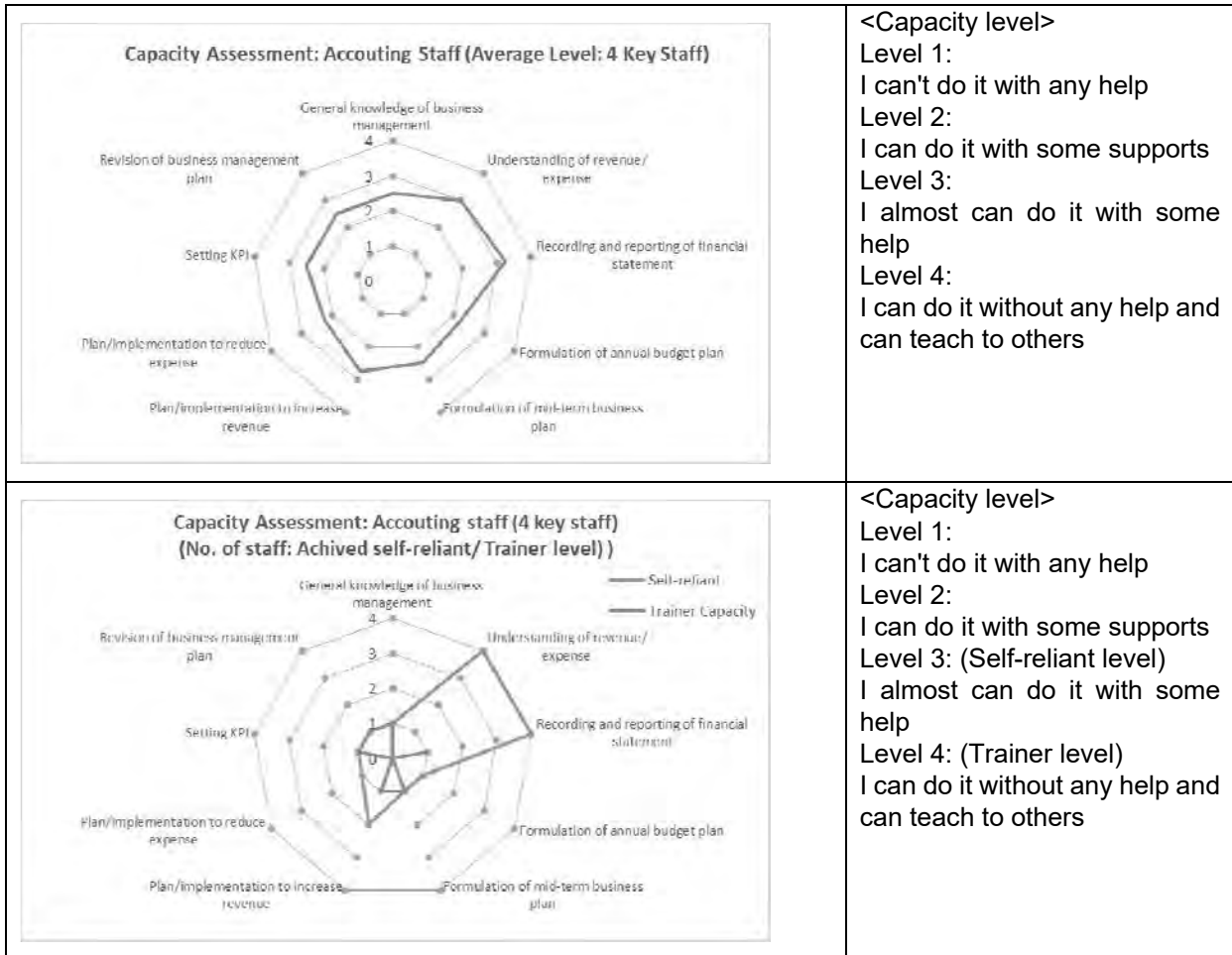
CBA lent out buses as intercity buses during the holiday seasons in April and October 2019. Therefore, the number of bus users decreased significantly compared to other months. In September, the most recent holiday season, the number of passengers in the last week of September is thought to have declined significantly since 120 out of 235 buses were rented as intercity buses from 26th to 30th September.



(4) No. of free/paid passenger up to October 2019

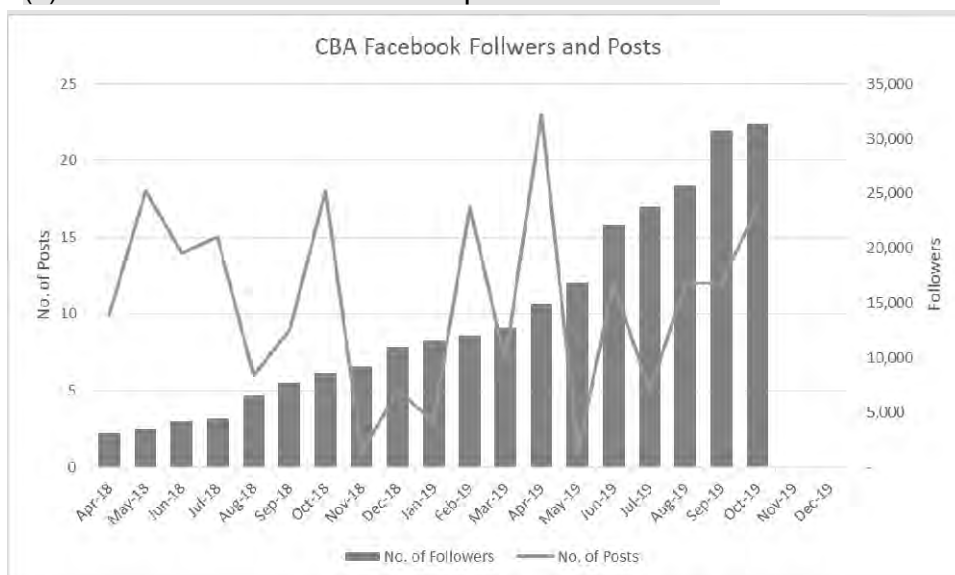


(5) Summary of capacity assessment for 4 key business management staff in June 2019

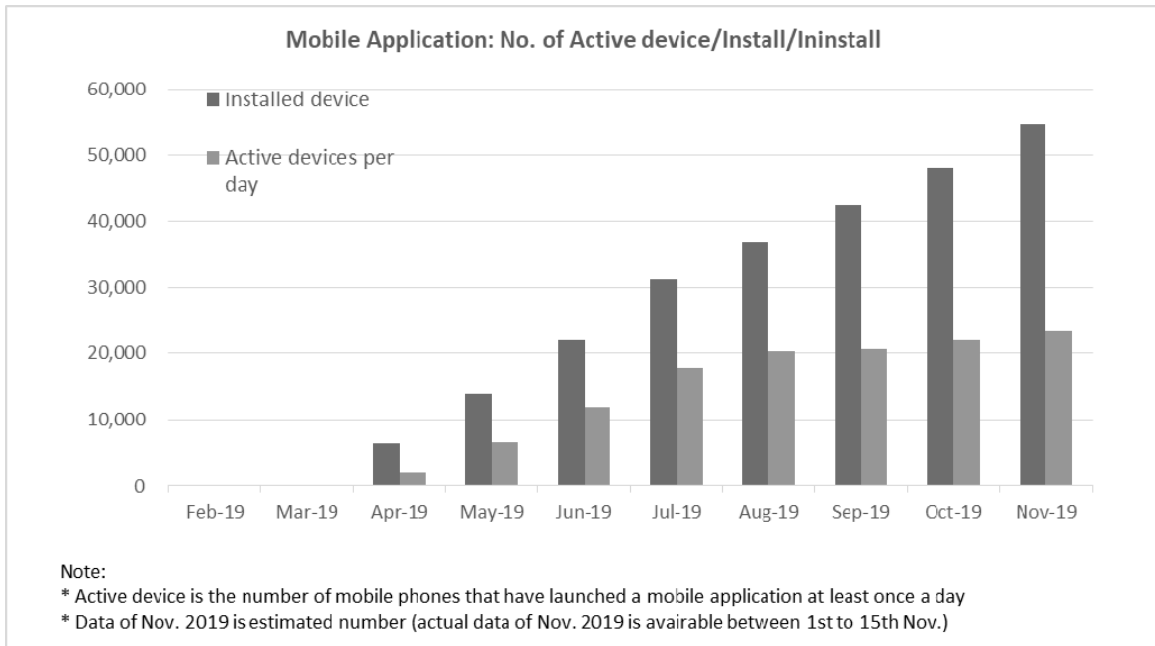


1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

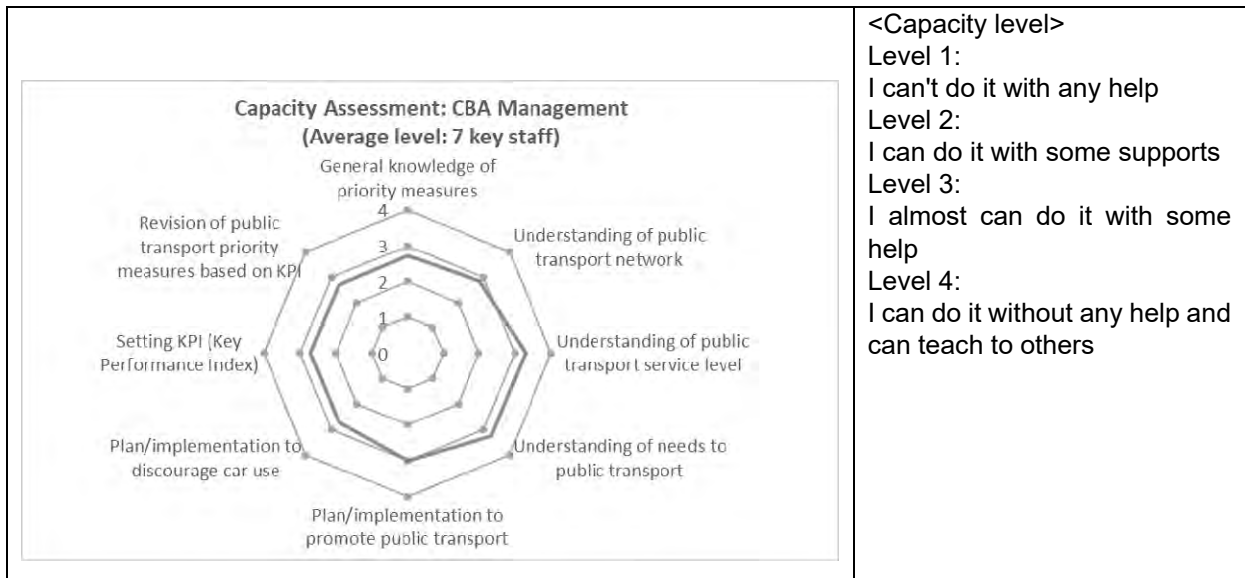
(1) CBA's Facebook follower up to October 2019

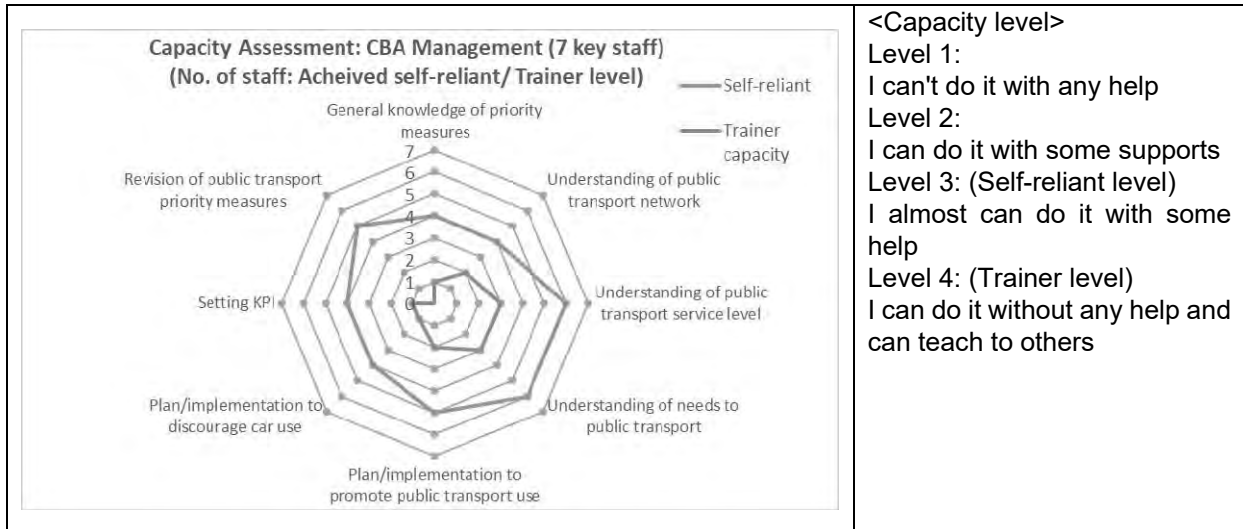


(2) Utilization of CBA’s Mobile Application (iOS and Android)



(3) Summary of capacity assessment for Policy Planning for the Public Transport Priority Measures in June 2019





<Capacity level>
 Level 1:
 I can't do it with any help
 Level 2:
 I can do it with some supports
 Level 3: (Self-reliant level)
 I almost can do it with some help
 Level 4: (Trainer level)
 I can do it without any help and can teach to others

1.4. Achievement of Output

The achievement level of each output is summarized below.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer's level	60%*	<ul style="list-style-type: none"> - A number of workshops/seminars conducted for CBA management and staffs - 1st study trip carried out in Malaysia and Singapore (Feb 2018) - 2nd study trip in Japan (Feb 2019) and network plan and operation scheme studied - 3rd study trip carried out in Vietnam and Singapore (Oct. 2019) - CBA developed bus route/fleet deployment plan and implemented Phase 2 network and operation plan. - Capacity evaluation survey to be conducted in June 2019
- Bus operation manual is developed	70%	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017

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		<ul style="list-style-type: none"> - Roster plan developed and tested in Line 9. - Phase 1 network and operation practice reviewed - Bus network and operation plan (Phase 2) drafted and approved by PPCA Governor - Phase 2 (Line 1-13) implemented by Oct 2018
- Bus operation system/model is established	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - ICT-based Bus Management System developed in May 2019 and start official operation in July 2019
- Bus operation is reviewed and revised based on data collected	80%	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9. - Phase 1 network and operation practice reviewed and Bus network and operation plan (Phase 2) developed and implemented

1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 2	Achieved	Activities completed
- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level	50%*	<ul style="list-style-type: none"> - Recruitment plan prepared and approved by PPCA - CBA recruited chief maintenance mechanics by April 2018 - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses - A number of workshops conducted for CBA management and staffs - A study trip carried out in Malaysia, Singapore, Vietnam and Japan (drivers/fleets management studied) - Capacity evaluation survey to be conducted in June 2019
- Bus vehicle maintenance manual is developed	80%	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to

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		<ul style="list-style-type: none"> prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates, prepared - A number of workshops conducted for CBA maintenance mechanics - Training video for Bus inspection and maintenance was prepared in Oct. 2019
- Bus inspection is routinely conducted, following maintenance manual	80%	<ul style="list-style-type: none"> - Bus operation and maintenance for Korean and Chinese bus reviewed - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA regularly carried out periodic inspection and maintenance for Chinese and Japanese buses - CBA also carried out maintenance for initial defects for Japanese buses - Korean buses are excluded from CBA operation due to its many aging failures

1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	70%	<ul style="list-style-type: none"> - Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management - Driver's operation manual developed by bus fleet suppliers - A study trip carried out in Malaysia, Singapore, Vietnam and in Japan (drivers/fleets management studied) - A number of workshops conducted for CBA management and staffs - Training video for safety bus driving is prepared in Nov.2019
- Conductor work manual is developed	NA	NA
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	50%*	<ul style="list-style-type: none"> - 16 AM/PM chief drivers involved in a series of workshops - A number of workshops conducted by chief drivers

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		- Capacity evaluation survey to be conducted in June 2019
- All drivers have completed the driver training and passed training	100%	- Drivers driving record collected and analyzed - Drivers paper and practical tests were conducted during recruitment for Japanese buses - Only drivers who passed paper and practical tests employed by CBA
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	NA	NA
- All conductors have completed the conductor training and passed training	NA	NA
- Safety management system is developed	20%	- Traffic accident data collected and analyzed - System supplier for safety driving system surveyed to study a business model

1.4.4. Output 4: Improvement of Business Management Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	50%*	- A number of workshops conducted for CBA management and staffs - CBA regularly prepared budget plan as well as revenue/cost reports - Capacity evaluation survey to be conducted in June 2019 - A study trip carried out in Malaysia, Singapore, Vietnam and in Japan (improved efficiency in bus operation and business)
- Financial statements are prepared	80%	- Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement - CBA regularly prepared budget plan as well as revenue/cost reports
- Operation cost model and passenger database are developed	70%	- BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus	60%	- Bus passenger and non-bus passenger

operation are assessed		<ul style="list-style-type: none"> interview survey conducted in Aug 2017 - Needs in bus operation assessed - Monitoring survey for bus and non-bus passenger conducted in May 2018 and May 2019 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider - CBA carried out dissemination workshops involving all Districts in Phnom Penh in June 2018 and June 2019
- Business plan is formulated and reflects on budget plan	40%	<ul style="list-style-type: none"> - Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared - CBA's new legislation drafted to upgrade to Public Administration Enterprise - PPCA assigned private advertisement company, initiated advertisement, wrapping Chinese/Korean buses and developed nearly 170 sheltered bus stops
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	<ul style="list-style-type: none"> - BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.
- Cashless ticketing system is developed	80%	<ul style="list-style-type: none"> - CBA introduced Wing's NFC card - CBA introduced ACLEDA's QR code - JICA introduced smart phone based ticketing system

1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level	30%*	<ul style="list-style-type: none"> - A number of workshops conducted for CBA and DPWT - A study trip carried out in Malaysia and Singapore and in Japan bus priority measures studied - Capacity evaluation survey to be conducted in June 2019 - A study trip carried out in Malaysia, Singapore, Vietnam and in Japan (improved efficiency in bus operation and

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		business)
- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	40%	<ul style="list-style-type: none"> - Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed by JCC members - CBA submitted a concept plan as well as budget plan to PPCA - Action plan for priority measures and mobility management scheme prepared - A planning guidebook for mobility management drafted - Preparation of pilot project on signal control for rapid bus
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	80%	<ul style="list-style-type: none"> - Bus depot layout plan prepared and approved by PPCA - Construction of bus depot completed - Bus facilities (Bus stops/signs) for Phase 1 designed and installed - Bus facilities (Bus stops/signs) for Phase 2 designed and installed - PPCA assigned private advertisement company and developed nearly 170 sheltered bus stops - A design guidebook for bus related facilities drafted
- Bus information and location system is developed	80%	<ul style="list-style-type: none"> - Bidding documents for bus operation and management system completed - GPS installed in all City Buses and bus monitoring and management system developed - Training on bus monitoring and management system to be implemented

1.5. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	100%	<ul style="list-style-type: none"> - Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 lines by Nov 2017 - Phase 2 bus network and operation plan developed and approved by PPCA - Bus network increased from 8 lines to 13 lines
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	70%	<ul style="list-style-type: none"> - Bus service rate* improved from 67.5% in 2016 to 89.6% as of Mar 2018 - Bus service rate dropped 77.8% as of Dec 2018 and 69.4% as of May 2019 due to increased need for maintenance and traffic congestion. - Bus service rate dropped from 77.8% as of Dec 2018 to 65.1% as of Oct. 2019 due to traffic congestion and decrease of number of buses (Korean buses were excluded from operation). <p>Note: Bus service rate is No. of actual bus operation against bus frequency based on CBA' operation plan.</p>
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	80%	<ul style="list-style-type: none"> - Japanese buses (80 units) regularly inspected and initial and periodic maintenance carried out at the mileage - Chinese buses (98 units) also regularly inspected and maintained by CBA
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	80%	<ul style="list-style-type: none"> - Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 2.01/100,000km (CBA drivers as first party) (5.50/100,000km in total) as of Oct - Dec 2018 - Traffic accident bus caused improved to 1.20/100,000km (CBA drivers as first party), 2.64/100,000km in total accident as of Jan – Apr 2019 - Traffic accident bus caused improved to 1.10/100,000km (CBA drivers as first party), 3.37/100,000km in total accident as of Jan – Oct 2019
- Level of perception of the bus improves and customer	80%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted and baseline

<p>satisfaction of bus users improves.</p>		<p>collected to monitor the performance in May 2018 and May 2019</p> <ul style="list-style-type: none"> - Overall satisfaction of bus services level significantly improved from 2.81 (Overall service evaluated as Good) to 3.72 (as Excellent) - Public comments delivered through Facebook and utilize for raise customer satisfaction level - Dissemination campaign on City bus was held in all Khans in 2018 and 2019
<p>- Bus operation cost covered by the revenue in 2020.</p>	<p>15%</p>	<ul style="list-style-type: none"> - Bus revenue covers 20 % of bus operation cost between Jan and Sep 2017 - Bus revenue covers 13 % of total expenses in 2018
<p>- Average operation speed maintained at 15 km/h in 2020</p>	<p>80%</p>	<ul style="list-style-type: none"> - Average operation speed maintained at 14.1km/h between Jan-Oct 2018 - Average operation speed slightly dropped at 13.6km/h between Jan -May 2019. - Average operation speed slightly deteriorated at 12.8 km/h between Jan -Oct 2019.

1.6. Changes of Risks and Actions for Mitigation

Not applicable

1.7. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.8. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

The first female bus driver in Cambodia was born in November 2019, and the second female driver is acquiring the D2 license necessary for the bus driver and is training for actual driving duties as of November 2019.

1.10. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

2.1. Summary

As agreed in the 2nd JCC held in May 2018, both PPCA/CBA and JICA confirmed the scope of public transport priority measures as a pilot project and the expenses for implementation of the pilot project be borne by both JICA (PTPS: Public Transport Priority Signal) and PPCA (bus priority lane, parking management and para-transit management). There is a risk that PPCA cannot provide a sufficient amount of fund to implement agreed public transport priority measures on time.

2.2. Cause

Lack of funding to implement agreed public transport priority measures

2.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Re-scoping/redesign to minimize cost (project area, scope of pilot project)
- Rescheduling (JICA implement in 2019 and CBA in 2020)
- Other funding source (e.g., ADB TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development)

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

The following organizations are responsible for each action.

- Re-scoping/redesign to minimize cost (Expert Team, PPCA/CBA)
- Rescheduling (Expert Team, PPCA/CBA)
- Other funding source (ADB and others)

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved

during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 7

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.7 (Term: Dec 2019 – Jan 2020)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 21 February 2020

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as **Annex 5: Inputs provided**. The list of working conditions of equipment provided is also attached as **Annex 6: Working Conditions of Equipment Provided**.

<Cambodian Side>

1. Counterpart personnel: Three (3) organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See **Annex 5: Inputs provided**.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety
 - 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management

- 10) Mobility Management (1/2/3)
 - 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was completed in Feb/March 2018 in Malaysia and Singapore. The 2nd study trip was completed in Feb 2019 in Japan. The 3rd study trip was carried out from 6th to 11th October 2019 in Vietnam and Singapore.
3. Machinery and equipment:
Bus Operation and Management System (BOMS), Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*)
4. 1st JCC (*9th May 2017*)
5. 2nd JCC (*8th June 2018*)
6. 3rd JCC (*4th July 2019*)
7. Other significant progress (relating to external factors of the Project)
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)
 - ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of mechanics (*occasionally*)
 - vi. Employment of drivers/office staffs (*occasionally*)

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

Output 1 Bus operation capacity of CBA is improved

Output 2 Maintenance and inspection capacity on bus vehicles of CBA is implemented

Output 3 Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA

Output 4 CBA's business management capacity is improved

Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

List of Workshops/Technical Trainings (up to Jan 2020, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output
1	20 Jan 2017	Half Day	Work Plan Outline	10	1
2	24 Feb 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	4 Mar 2017	Haft Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	5 Jul 2017	Half Day	GPS System	13	5
6	11. Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11. Jul 2017	Half Day	Bus Stop Design Gide	12	1
8	11. Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	6 Sep 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	8 Sep 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sep 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct 2017	Half Day	Matters agreed between CBA, Jica expert and CJEC	9	5
13	31 Oct 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	7 Nov 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov 2017	Half Day	Implement Bus Operation Management System	14	5
16	7 Dec 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec 2017	Half Day	Mobility Management	21	5
18	15 Dec 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec 2017	Half Day	3 rd Workshop for the management and the accounting	12	4
22	21 Dec 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ	16	1

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	No. of participants	Output
26	22 Feb 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb 2018	Half Day	Bus Driving Training (2)	16	3
28	27 Feb 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1
29	3 Mar 2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	1
30	9 Mar 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	4 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	5 Jun 2018	Haft Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	6 Jun 2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5
40	7 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	7 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	7 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	5
43	20 Jun 2018	Haft Day	Bus Operation Training	15	3
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	No. of participants	Output
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	5 Sep to 07 Oct 2018	33 Days	Bus driving training	No.1: 60 No.2: 60 No.3: 40 No.4: 40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	5
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
51	14 Dec 2018	Half Day	Progress Report	11	3
52	19 Dec 2018	Half Day	Safety Operation	10	3
53	19 Dec 2018	Half Day	Mobility Management Guideline	10	3
54	25 Nov-22 Dec 2018	22 Days	Chief Driver Training, New Driver Training and Mechanic Training	76	5
55	21 Jan 2019	Half Day	Fare Policy	13	4
56	31 Jan 2019	Half Day	Discussion on CBA's Condition and Registration Book	10	4
57	21 Mar 2019	Haft Day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	5
58	03 Jun 2019	Half Day	Dissemination Campaign at Khan Doun Penh	72	5
59	05 Jun 2019	Half Day	Dissemination Campaign at Khan Toul Kork	73	5
60	06 Jun 2019	Half Day	Dissemination Campaign at Khan Mean Chey	110	5
61	06 Jun 2019	Half Day	Dissemination Campaign at Khan Cham Kar Morn	97	5
62	07 Jun 2019	Half Day	Dissemination Campaign at Khan Chbar Ampov	92	5
63	10 Jun 2019	Half Day	Dissemination Campaign at Khan Dangkor	86	5
64	11 Jun 2019	Half Day	Dissemination Campaign Khan Por Sen Chey	114	5
65	13 Jun 2019	Half Day	Dissemination Campaign Khan 7 Makara	49	5
66	13 Jun 2019	Half Day	Dissemination Campaign Khan Sen Sok	52	5
67	14 Jun 2019	Half Day	Dissemination Campaign Khan Ressey Keo	90	5
68	20 Jun 2019	Half Day	Dissemination Campaign Khan Chhrouey Chang Va	46	5
69	21 Jun 2019	Half Day	Dissemination Campaign Khan Preak Phnov	104	5
70	02 Jul 2019	Half Day	Bus Scheduling improvement for CBA (Training)	25	1
71	05 Jul 2019	Half Day	Bus Maintenance, Explanation (Roll Call & Bus Schedule	7	2
72	22 Jul 2019	Half Day	MM Action Plan Final, Concept Plan of Priority Measures Route Sele	9	5
73	22 Jul 2019	Half Day	4 th Management Workshop Financial Simulation and Cost Reduce	11	4
74	10 Jul 2019	Half Day	Roll Call Training	50	3
75	15-19 Jul 2019	5 Days	New Driver Training	18	3

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

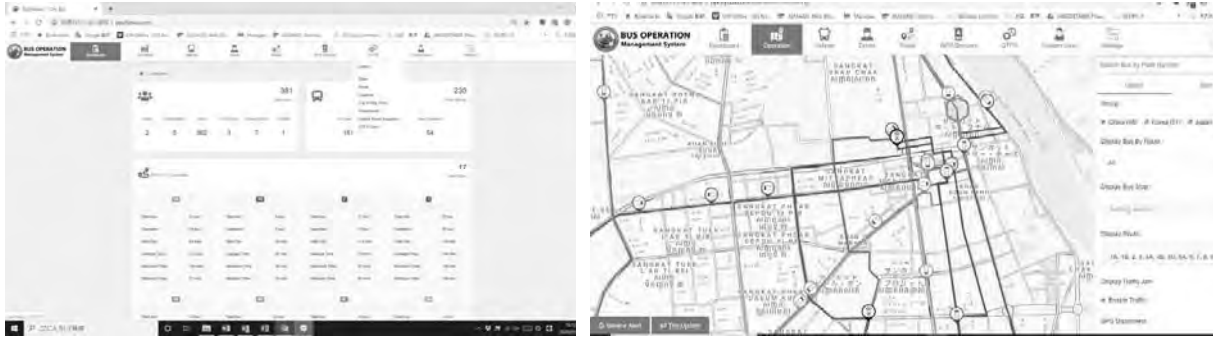
No.	Date	Duration	Title of Training	No. of participants	Output
76	30 Jul 2019	Half Day	Driver Training Report, Promotion Video for Phnom Penh City Bus and The Progress of Bus Operation & Management System.	13	3
77	13 Aug 2019	Half Day	Bus Operation Plan and Deployment Plan	9	1
78	22 Aug 2019	Half Day	Scope of Pilot Bus Priority Measures	8	5
79	03 Oct 2019	Half Day	Rapid Bus Project 2019-2010	19	5
80	22 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108	5
81	24 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64	5
82	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89	5
83	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115	5
84	05 Nov 2019	Half day	Assembly Meeting (Utilization of Training video for drivers and mechanics)	Appx. 200 (All available staff of CBA)	2
85	07 Nov 2019	Half Day	Bus Maintenance	17	2
86	12 Dec 2019	Half Day	Project Monitoring Sheet and Progress of Bus Operation & Management System	21	1
87	12 Dec 2019	Half Day	E-Motorcycle sharing with City Bus	19	5
88	20 Dec 2019	Half Day	Preliminary Opinion Survey for Mobility Management	22	5
89	20 Jan 2020	Half Day	Overview of JICA's bus priority pilot project	15	5
90	20 Jan 2020	Half Day	Bus Route Discussion	19	1
91	7 Feb 2020	Half Day	Progress of Bus ICT System	15	4

< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)

6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (Sep 2018)
12. Stepwise implementation of Phase 2 (Line 1-13 start operation on 1st Oct 2018, 235 buses are in operation)
13. New bus depot operation (*starting in Feb 2019*) and completion of stepwise implementation of Phase 2 (*Feb 2019*)
14. Monitoring of Phase 2 operation plan (*On-going*)
15. Implementation of Capacity Assessment Survey (*June 2019*)
16. Review/revision of bus operation plan under non-Korean bus assumption (*July 2019*)
17. Confirmation of suspension of Korean buses operation and modification of bus operation plan (*Aug 2019*)
18. Stepwise implementation of revised Phase 2 (181 buses in operation)
19. Start operation of Bus Operation Management System (BOMS) (*July 2019*)
20. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster (*Dec 2019*)
21. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (*Feb 2020*)
22. Integration of scheduled bus and drivers roster in BOMS (*Feb 2020*)
23. Improvement of operational analysis (based on scheduled bus and drivers roster) through BOMS (*Feb 2020*)
24. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Materials***)



Screenshot of Bus Operation and Management System (BOMS)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (*Feb – Mar 2017*)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
10. Recruitment of Chief Mechanic (*April 2018*)
11. Recruitment of 18 Mechanics (*by May 2018*)
12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan’s Grant Aid)
13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
15. Implementation of periodical inspection and maintenance (5,000km initial inspection and oil change) (*Sep 2018 – onward*)

16. New bus depot operation (*from Feb 2019*) and set-up of inspection and maintenance office/storage
17. Implementation of Capacity Assessment Survey (*June 2019*)
18. Development of training video for bus inspection and maintenance (*Oct 2019*)
19. Dissemination of training video and training for bus inspection and maintenance (*Nov 2019*)
20. Integration of fleet management system into BOMS (*Jan 2020*)
21. Improvement of fleet management analysis through BOMS (*Feb 2020*)
22. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers
 - 3) On-board survey on drivers/conductors and driving skills
 - 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (*Sep 2017*)
3. Study of safety management system and drivers/conductors training in Japan (*July 2017*)
4. Participate in intensive training course organized by Eagle Bus Corp. (*Nov 2017*)
5. Recruitment/training to drivers for 98 Chinese buses (*Aug – Nov 2017*)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (*Nov 2017*)
7. Monitoring on accidents of bus (*Sep 2017 onward*)
8. Preparation of Safety Driving Manual and training on safety driving (*Feb 2018*)
9. Preparation of Driver’s training material (*Aug 2018*) (under cooperation with the supplier under Japan’s Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (*May to Oct 2018*)
11. Deployment of driver and fleet for Phase 2 operation plan (*Sep 2018*)
12. Intensive training for selected reckless drivers (*Dec 2018*)
13. Recruitment/training for female driver(s) (*on-going*)
14. Implementation of Capacity Assessment Survey (*June 2019*)
15. Revision of drivers’ assignment schedule, following revised operation plan (*Aug 2019*)
16. Retirement recommendation and negotiation for reckless drivers (*Sep - Oct 2019*)
17. Development of training video for safety driving (*Nov 2019*)

18. Dissemination of training video and training for safety driving (Nov 2019)
19. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster (Dec 2019)
20. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (Feb 2020)
21. Improvement of driver's management system (based on scheduled bus and drivers roster) through BOMS (Feb 2020)
22. Procurement of Alcohol Detector (On-going)
23. Monitoring of fleet and driver deployment plan and operation (On-going)
24. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 4 "Improvement of Business Management Capacity of CBA"** are undergoing.

1. Baseline survey (Sep and Dec 2017)
 - 1) Data collection of CBA's financial statement
 - 2) Data collection of PPCA's financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA's accounting office
 - 5) Input data collection for BOM model
2. Bus business management (Sep 2017 to onward):
 - 1) Data analysis of CBA and PPCA's financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination on business plan of company bus
 - 6) Preliminary study on fare policy and subsidy policy
 - 7) Draft decree for fare and subsidy structure
 - 8) Study and refine of BOM model
3. ICT-based management (May 2017 to onward):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (Nov 2017 – Mar 2018)
 - 4) Procurement of ICT equipment (Phase 1: GPS and Server) (Sep 2018)
 - 5) Procurement of AEON mobile payment system (Sep 2018)
 - 6) Official launching ceremony for Bus Location System (July 2019)
 - 7) Procurement of ICT equipment/software (Phase 2: Bus Operation Management System: BOMS) (Dec 2018 – ongoing)

- 8) Assistance to integration of bus location system and e-payment system (Nov 2019)
- 9) Improvement of BOMS, including development of KPI, design of Dashboard and reporting system (June 2019 - onward)
4. Strengthening of City Bus Authority (May 2018 to onward):
 - 1) Official request to upgrade the Authority to Public Enterprise by MEF (May 2018)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (Oct 2018)
 - 3) Draft legislation for upgrading Public Administration Enterprise (Jan 2019)
 - 4) Implementation of Capacity Assessment Survey (June 2019)
5. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (July and Aug 2017)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (July 2017)
3. Review of 2014 Urban Transport Master Plan (July 2017)
4. Preparation of a concept plan of public transport priority measures (July 2017)
5. Preparation of a concept mobility management plan (Dec 2017)
6. Preparation of bus depot layout plan (May – Aug 2017)
7. Approval of bus depot design by Governor (Dec 2017)
8. Preparation of bus color design (Dec 2017)
9. Technical advice on bus depot design (Jan - Feb 2018)
10. Examination and discussion on Public transport priority measures (Jan - Feb 2018)
11. Implementation plan on mobility management workshop (Mar 2018)
12. Implementation plan on public transport priority measures (Mar 2018)
13. Implementation of series of dissemination campaign (May – June 2018)
14. Monitoring of bus depot development (Aug 2018 – Jan 2019)
15. Monitoring of bus facility development (Aug 2018 – Jan 2019)
16. Preparation of Design Guides (Dec 2017 – onward)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable

- Integrated Urban Public Transport Development) (Nov 2018 – onward)
18. Implementation of bus user/ non-bus user survey (May 2019)
19. Action plan on mobility management (On-going)
- i. Bus map review and revision (Feb 2019)
 - ii. Monitoring bus facilities condition (Feb 2019 – onward)
 - iii. Preparation of mobility management action plan (Feb 2019 – onward)
 - iv. Provision of bus trial/special shuttle service as part of bus dissemination campaign (e.g., Tanabata Festival, Japan Movie Festival, Japan Scholarship Event) (Feb 2019 – onward)
 - v. Coordination with Tsukuba Univ for mobility management (Sep 2019 – onward)
 - vi. Mobility Management Survey with Tsukuba Univ (Dec 2019)
 - vii. Preparation of dissemination campaign for school (Jan 2020)
 - viii. Preparation of test user and dissemination campaign for the pilot project (Jan 2020)
 - ix. Bus map review and revision (Jan 2020)
20. Action plan on public transport priority measures (On-going)
- i. Coordination meeting with a traffic control supplier on PTPS (April 2019)
 - ii. Set-up WG (Working Group) for Pilot Project (July 2019)
 - iii. Organize a series of WGs (July 2019 – onwards)
 - iv. Planning action plan on bus priority measures and Pilot Project (July 2019)
 - v. Approval of contents and scheduled of Pilot Project by Governor of PPCA (July 2019)
 - vi. Planning stakeholder management plan for Pilot Project (Sep 2019)
 - vii. Organize a dissemination campaign for Pilot Project at 4 Khans (Oct 2019)
 - viii. Preparation of concept design of the Rapid Bus (Jan 2020 – ongoing)
 - ix. Preparation of the pilot Bus Priority Signal (Jan 2020 – ongoing)
 - x. Preparation of the pilot e-Bike Sharing (Dec 2019 – ongoing)
21. Implementation of Capacity Assessment Survey (June 2019)
22. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Materials**)



Screenshot of Mobile Application for bus location System

1.3. Monitoring Indicators

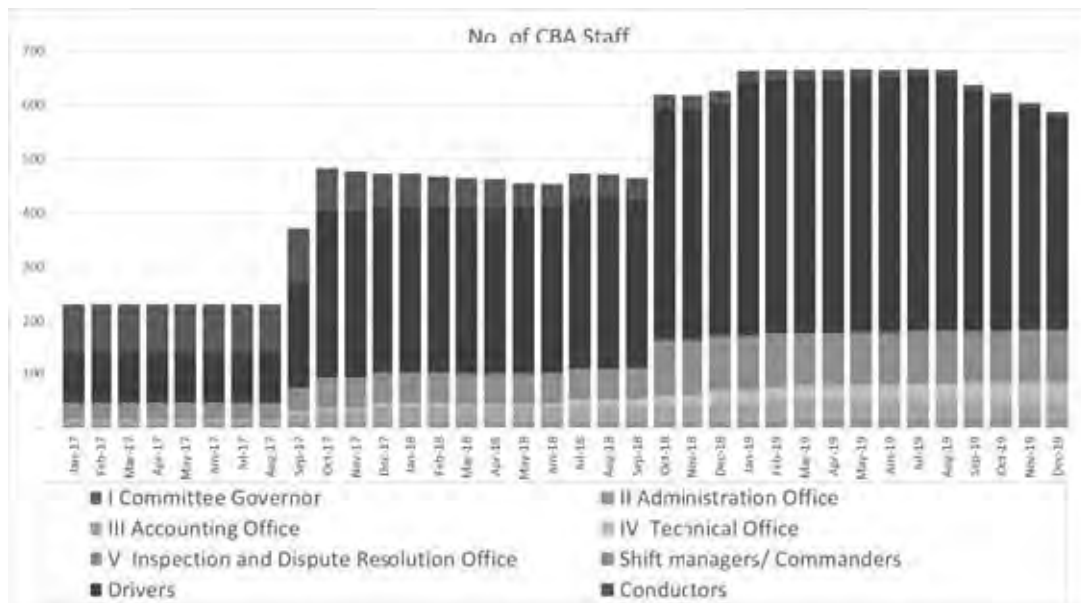
The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured from next section.

The data source of the monitoring indicators utilizes data acquired by the BOMS from October 2019. Following are list of data compiled and analyzed in BOMS.

- Number of bus fleets
- Number of bus routes
- Number of planned/actual trips
- Departure/Arrival/Travel time per trip
- Operation speed per trip

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

(1) No. of CBA staff by section

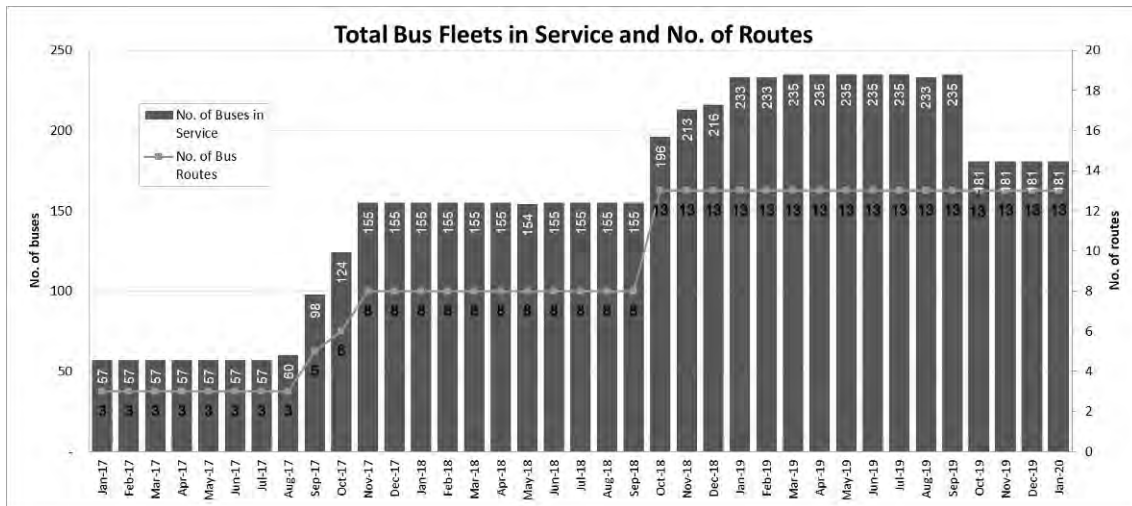
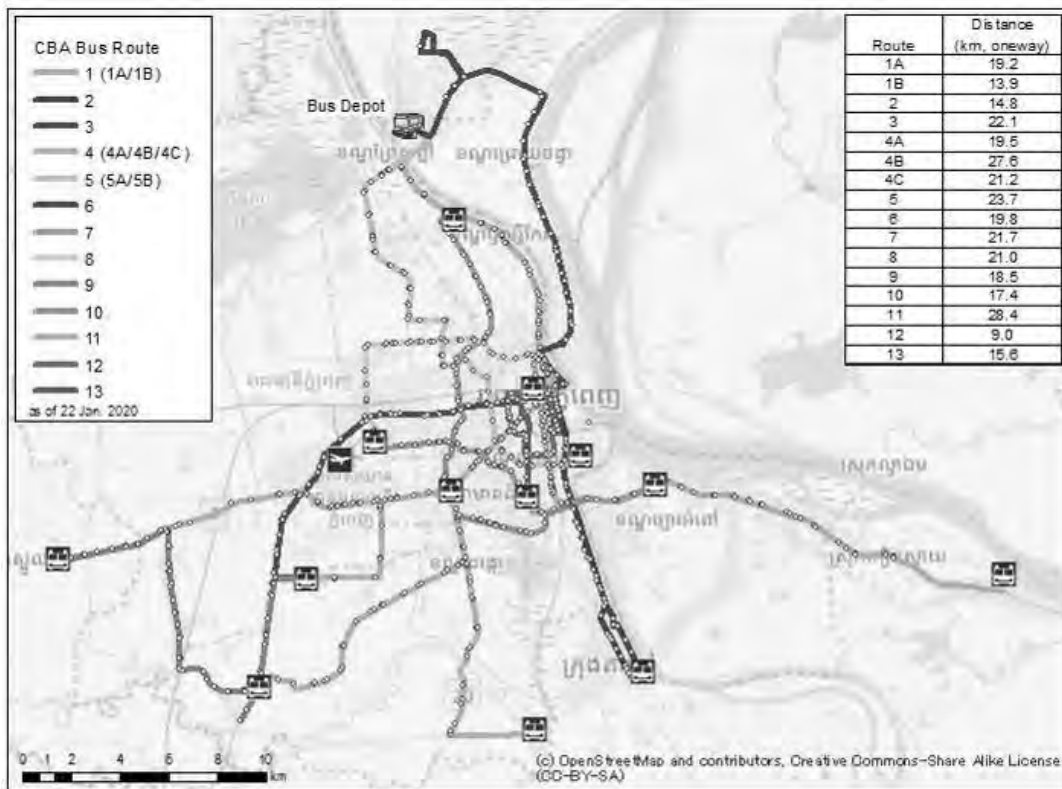


Source: prepared by JICA Expert based on data from CBA

Note: CBA suspended the operation of 54 Korean buses in September 2019. As a result, the number of bus drivers has become excessive, and CBA has reduced the number of drivers from 470 to 372.

	I Committee Governor	II Administration Office	III Accounting Office	IV Technical Office	V Inspection and Dispute Resolution Office	Shift managers/ Commanders	Drivers	Conductors	Total
Jan-19	3	6	37	24	6	95	470	22	663
Feb-19	3	10	38	25	6	95	470	18	665
Mar-19	3	11	38	25	6	95	469	18	665
Apr-19	3	11	38	25	6	95	469	18	665
May-19	3	13	34	29	6	95	470	16	666
Jun-19	3	13	34	29	6	95	470	15	665
Jul-19	3	13	34	32	6	95	470	13	666
Aug-19	3	13	34	32	6	95	470	12	665
Sep-19	3	13	34	33	6	92	444	12	637
Oct-19	3	13	34	33	6	92	428	12	621
Nov-19	3	13	33	34	6	95	409	11	604
Dec-19	3	13	33	34	6	95	395	8	587
Jan-20	3	13	33	36	13	95	372	0	565

(2) No of bus lines and fleets



Source: prepared by JICA Expert based on data from CBA

Note: CBA suspended the operation of 54 Korean buses in September 2019. In total 181 buses are in service as of November 2019, including 80 Japanese buses, 98 Chinese buses, and 3 Korean buses.

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(3) Summary of bus operation service level

Year 2018

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

Source: prepared by JICA Expert based on data from CBA

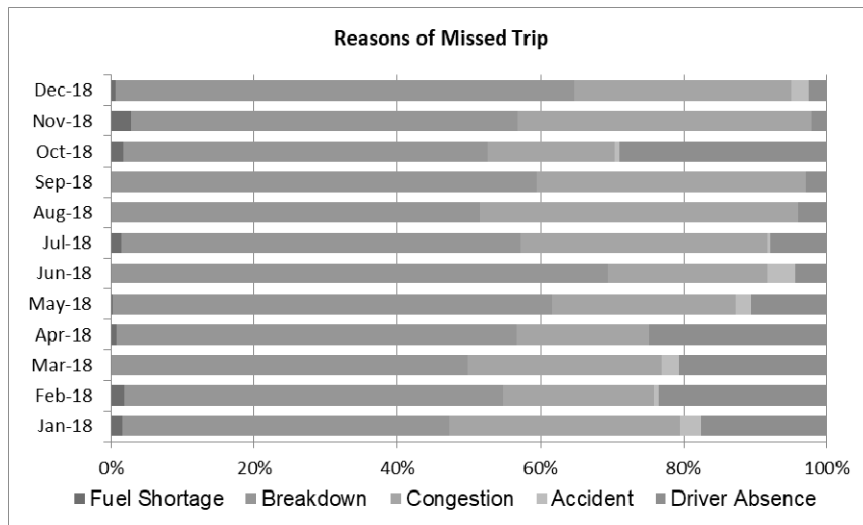
Year 2019

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-19	13	233	839	652.5	22.2%	25,272	758,163	13.7
Feb-19	13	233	870	675.0	22.4%	25,681	770,418	13.7
Mar-19	13	235	889	672.5	24.3%	25,907	777,198	13.8
Apr-19	13	235	853	604.5	29.1%	23,167	695,001	13.7
May-19	13	235	902	626.0	30.6%	23,849	715,464	13.0
Jun-19	13	235	878	605.5	31.0%	22,878	686,337	13.3
Jul-19	13	235	860	573.5	33.3%	21,961	658,839	12.0
Aug-19	13	233	865	524.0	39.4%	19,750	592,488	10.8
Sep-19	13	235	867	519.0	40.1%	20,033	600,993	11.2
Oct-19	13	190	717	452.0	37.0%	16,644	499,326	11.9
Nov-19	13	181	644	482.4	28.0%	17,243	517,293	14.6
Dec-19	13	181	664	500.5	24.6%	18,804	564,123	15.5
Total in 2019	13	181	820	574	30.0%	21,766	7,835,643	13.1

Source: prepared by JICA Expert based on data from CBA and BOMS

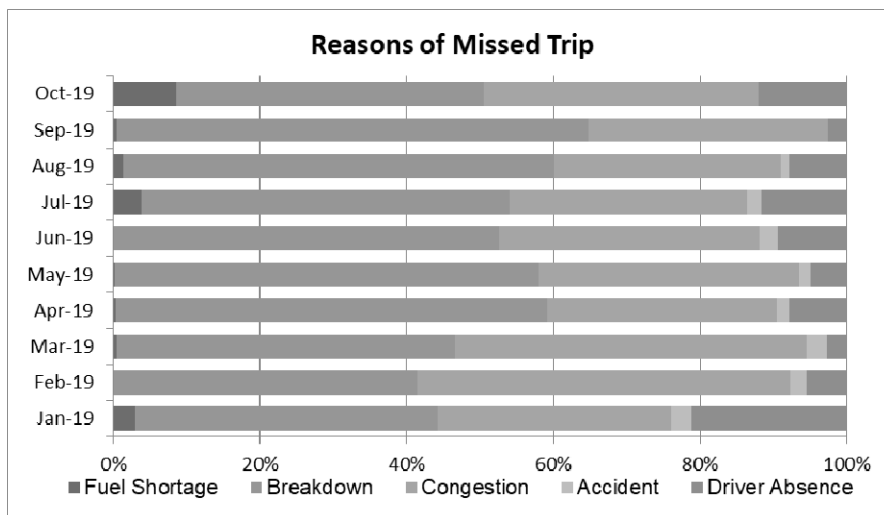
(4) Reasons of missed trip

Year 2018

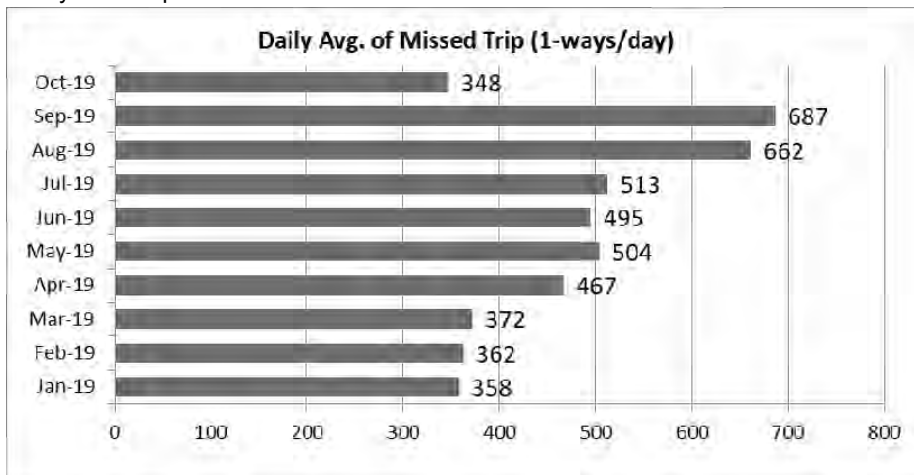


Source: prepared by JICA Expert based on data from CBA

Year 2019



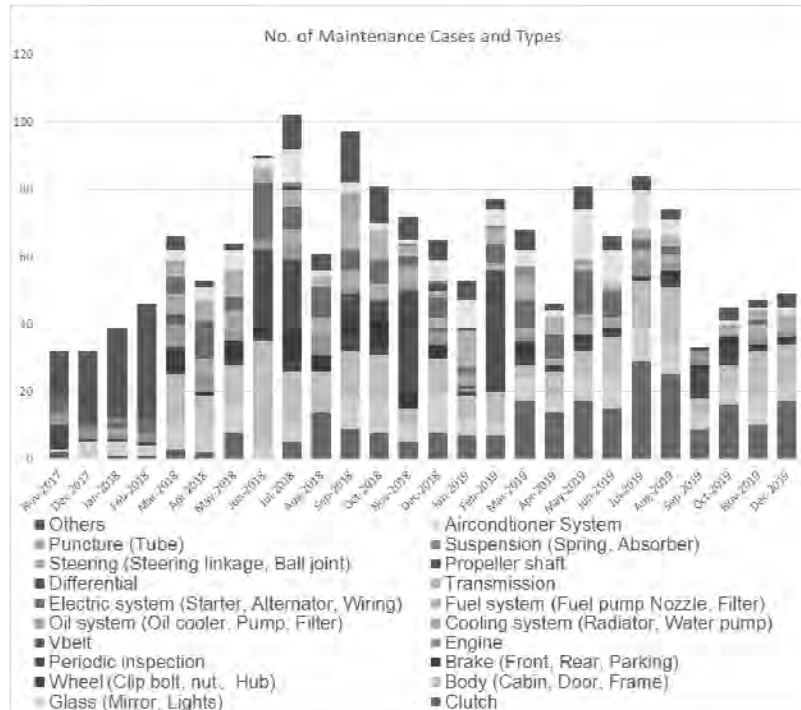
Source: prepared by JICA Expert based on data from CBA



Source: prepared by JICA Expert based on data from CBA

1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

(1) No. of maintenance cases and types



Source: prepared by JICA Expert based on data from CBA

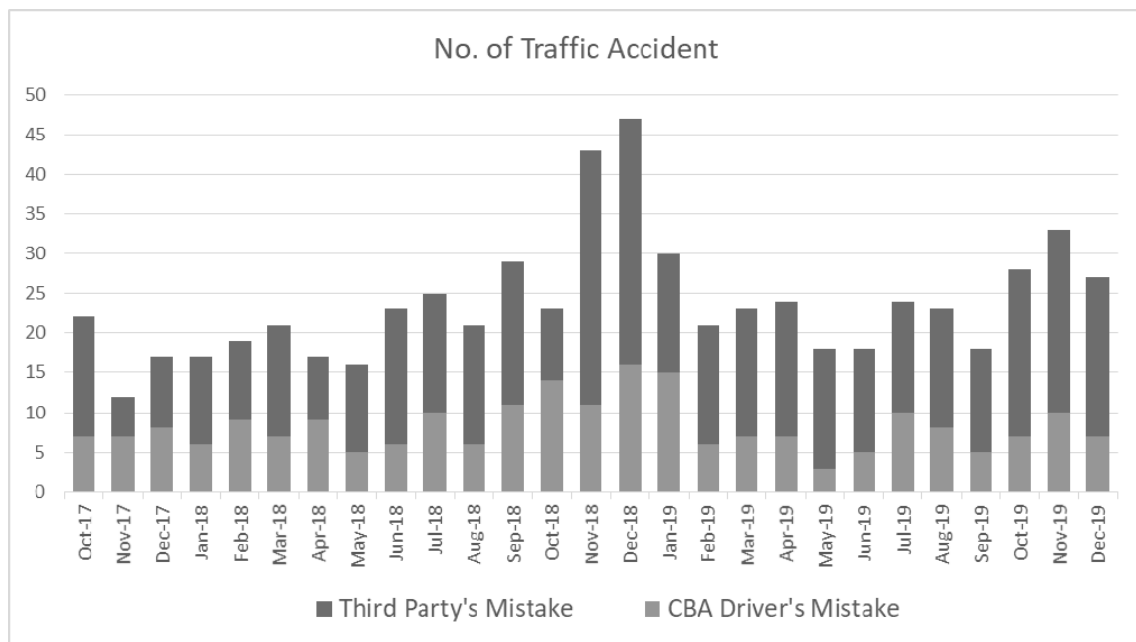
1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

(1) Summary of accident statistics

Month	Traffic Accident		
	Occurance	Accident rate	CBA driver's mistake
	(cases)	ases/100,000k	(% of cases)
Jan-18	17	3.11	-
Feb-18	19	3.37	100%
Mar-18	21	3.70	100%
Apr-18	17	3.03	100%
May-18	16	2.84	100%
Jun-18	23	4.24	100%
Jul-18	25	4.54	75%
Aug-18	21	3.60	100%
Sep-18	29	5.46	40%
Oct-18	23	3.57	100%
Nov-18	43	6.24	33%
Dec-18	47	6.70	75%
Total in 2018	301	4.27	83.9%

Month	Traffic Accident		
	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)
Jan-19	30	3.96	50.0%
Feb-19	21	2.73	28.6%
Mar-19	23	2.96	30.4%
Apr-19	24	3.45	29.2%
May-19	18	2.52	16.7%
Jun-19	18	2.62	27.8%
Jul-19	24	3.64	41.7%
Aug-19	23	3.88	34.8%
Sep-19	18	3.00	27.8%
Oct-19	28	5.61	25.0%
Nov-19	33	6.38	30.3%
Dec-19	27	4.79	25.9%
Total in 2019	287	3.66	30.7%

Source: prepared by JICA Expert based on data from CBA



Source: prepared by JICA Expert based on data from CBA

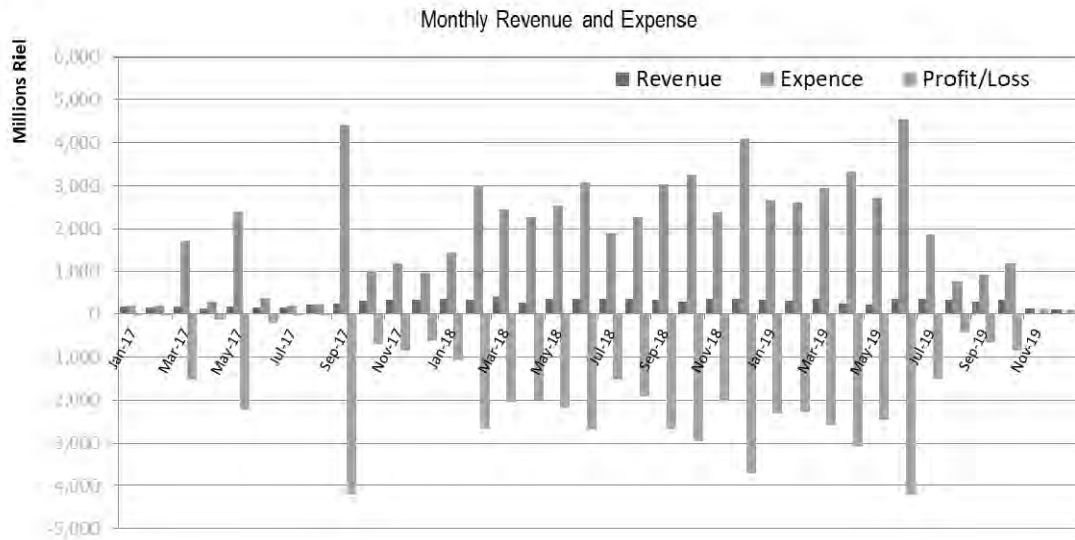
1.3.4. Output 4: Improvement of Business Management Capacity of CBA

(1) Summary of revenue/expense in CBA

Revenue & Cost 2017				Revenue & Cost 2018				Revenue & Cost 2019			
Month	Revenue	Expenses	Profit/Loss	Month	Revenue	Expenses	Profit/Loss	Month	Revenue	Expenses	Profit/Loss
	(mil.Riels)	(mil.Riels)	(mil.Riels)		(mil.Riels)	(mil.Riels)	(mil.Riels)		(mil.Riels)	(mil.Riels)	(mil.Riels)
Jan-17	184	196	-12	Jan-18	371	1,441	-1,070	Jan-19	347	2,662	-2,316
Feb-17	166	196	-30	Feb-18	348	3,018	-2,670	Feb-19	309	2,599	-2,291
Mar-17	182	1,685	-1,502	Mar-18	397	2,442	-2,045	Mar-19	358	2,936	-2,578
Apr-17	143	230	-87	Apr-18	275	2,264	-1,989	Apr-19	247	3,335	-3,087
May-17	175	2,454	-2,279	May-18	356	2,527	-2,171	May-19	233	2,715	-2,482
Jun-17	165	364	-199	Jun-18	357	3,069	-2,712	Jun-19	359	4,571	-4,211
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546	Jul-19	354	1,872	-1,518
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898	Aug-19	338	764	-426
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689	Sep-19	293	930	-637
Oct-17	313	1,009	-696	Oct-18	300	3,262	-2,962	Oct-19	339	1,192	-853
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008	Nov-19	124	*1	124
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712	Dec-19	116	*1	116
Total 2017	2,638	13,129	-10,491	Total 2018	4,202	31,677	-27,474	Total 2019	3,416	23,575	-20,159

Note: Expenditure data available up to October 2019 as of 28 January 2020. Revenue data November and December 2019 is still tentative

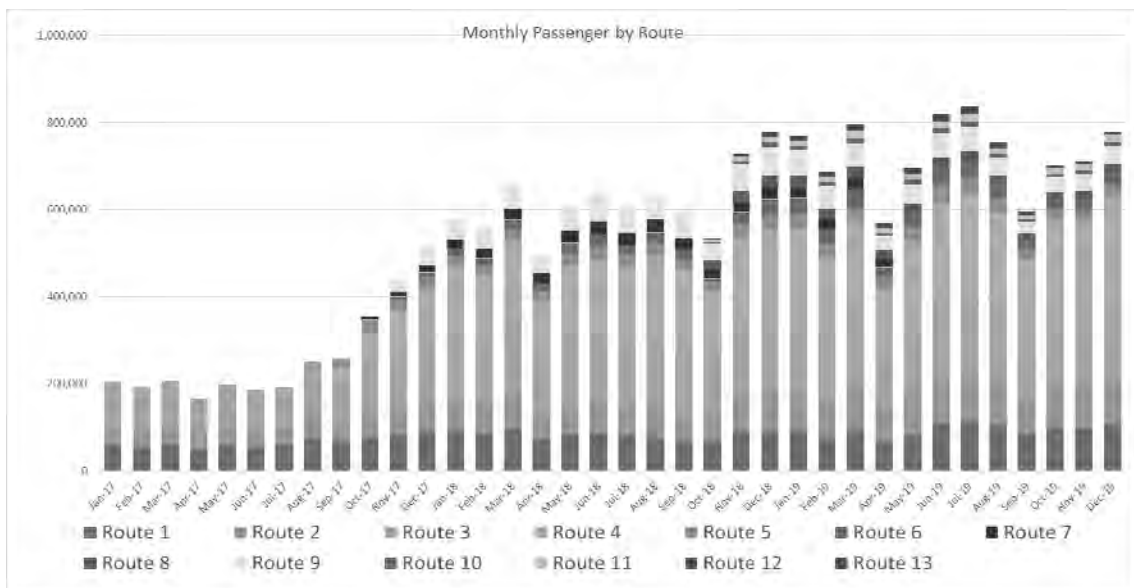
(2) Monthly revenue and expense



Source: prepared by JICA Expert based on data from CBA

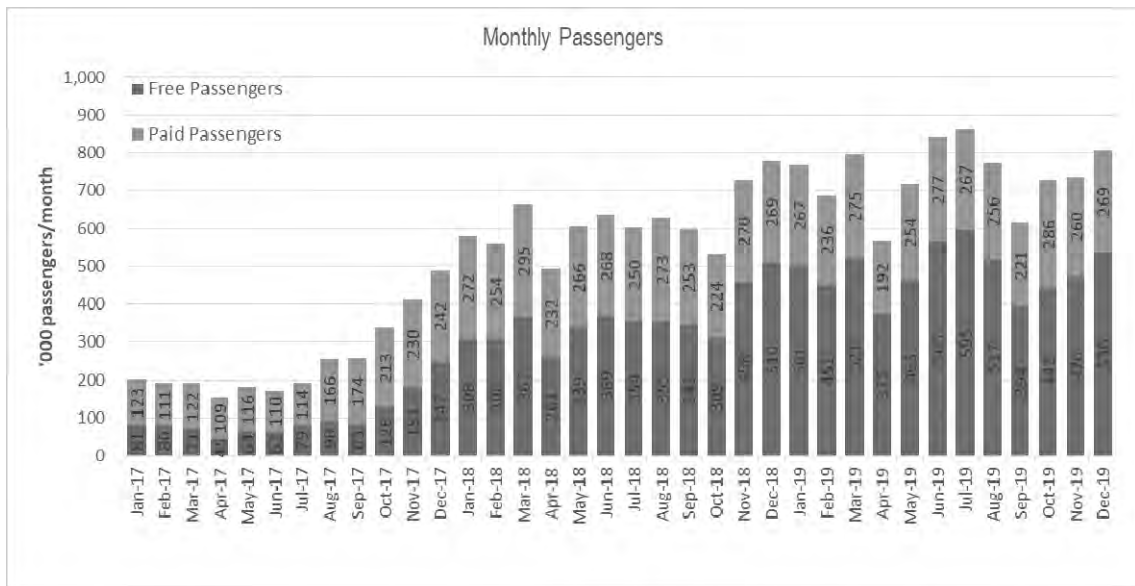
Note: Expenditure data available up to October 2019 as of 28 January 2020. Revenue data November and December 2019 is still tentative.

(3) No. of passengers by route



Source: prepared by JICA Expert based on data from CBA

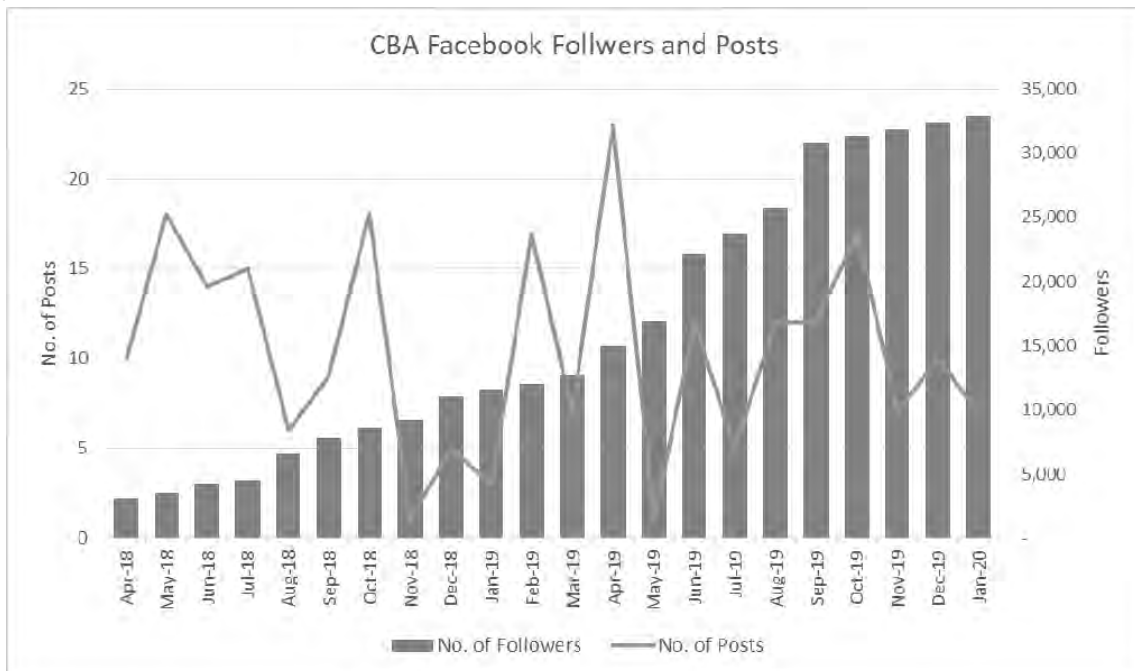
(4) No. of free/paid passenger



Source: prepared by JICA Expert based on data from CBA

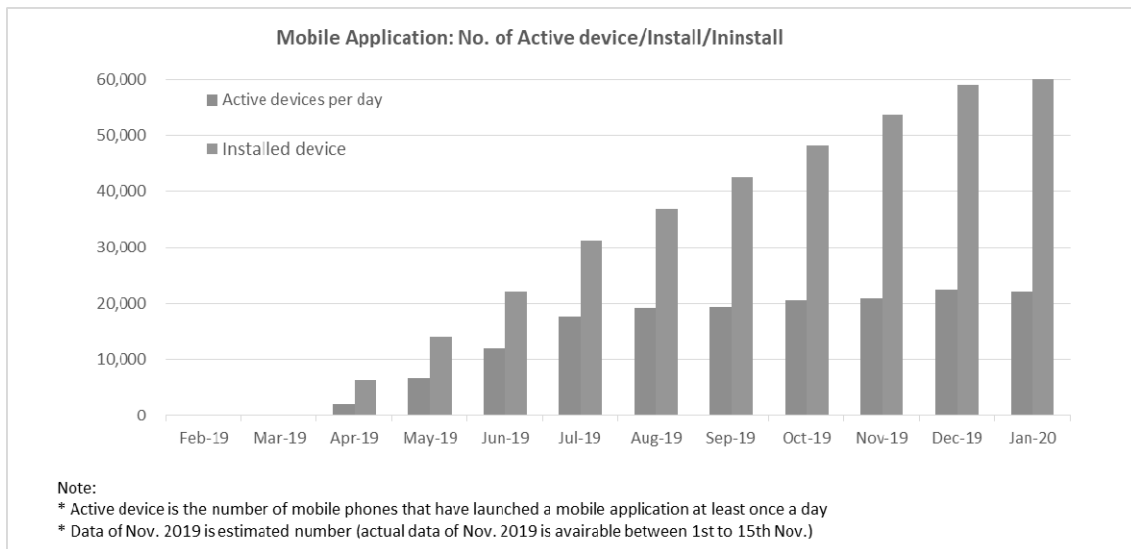
1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

(1) CBA's Facebook follower



Source: prepared by JICA Expert based on data from CBA

(2) Utilization of CBA’s mobile application (iOS and Android)



Source: prepared by JICA Expert based on data from CBA

1.4. Achievement of Output

The achievement level of each output is summarized below.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer’s level	66%	<ul style="list-style-type: none"> - A number of workshops/seminars conducted for CBA management and staffs - 1st study trip carried out in Malaysia and Singapore (Feb 2018) - 2nd study trip in Japan (Feb 2019) and network plan and operation scheme studied - 3rd study trip carried out in Vietnam and Singapore (Oct 2019) - CBA developed bus route/fleet deployment plan and implemented Phase 2 network and operation plan. - Capacity assessment survey conducted in June 2019
- Bus operation manual is developed	70%	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor

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		<ul style="list-style-type: none"> - Phase 1 (Line 1-9) implemented by Nov 2017 - Roster plan developed and tested in Line 9. - Phase 1 network and operation practice reviewed - Bus network and operation plan (Phase 2) drafted and approved by PPCA Governor - Phase 2 (Line 1-13) implemented by Oct 2018 - Bus network reviewed and revised following suspension of Korean buses in Aug 2019
<p>- Bus operation system/model is established</p>	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - ICT-based Bus Management System developed by June 2019 and bus location system started official operation in July 2019
<p>- Bus operation is reviewed and revised based on data collected</p>	80%	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9. - Phase 1 network and operation practice reviewed and Bus network and operation plan (Phase 2) developed and implemented - Phase 2 network and operation practice reviewed and bus operation plan revised and implemented, following suspension of Korean buses - Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster by Dec 2019 - Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A in Feb 2020 - Improvement of operational management analysis through BOMS in Feb 2020

1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 2	Achieved	Activities completed
<p>- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level</p>	<p>50%</p>	<ul style="list-style-type: none"> - Recruitment plan prepared and approved by PPCA - CBA recruited chief maintenance mechanics by April 2018 - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses - A number of workshops conducted for CBA management and staffs - A study trip carried out in Malaysia, Singapore, Vietnam and Japan (drivers/fleets management studied) - Capacity evaluation survey conducted in June 2019
<p>- Bus vehicle maintenance manual is developed</p>	<p>80%</p>	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates, prepared - A number of workshops conducted for CBA maintenance mechanics - Training video for bus inspection and maintenance prepared in Oct 2019
<p>- Bus inspection is routinely conducted, following maintenance manual</p>	<p>80%</p>	<ul style="list-style-type: none"> - Bus operation and maintenance for Korean and Chinese bus reviewed - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA regularly carried out periodic inspection and maintenance for Chinese and Japanese buses - CBA also carried out maintenance for initial defects for Japanese buses - CBA started inspection and maintenance for Chinese buses - Improvement of fleet management analysis through BOMS by Feb 2020

1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	70%	<ul style="list-style-type: none"> - Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management - Driver's operation manual developed by bus fleet suppliers - Training video for safety driving developed - A number of workshops conducted for CBA management and staffs - Improvement of driver's management system (based on scheduled bus and drivers roster) through BOMS in Feb 2020
- Conductor work manual is developed	NA	NA
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	50%	<ul style="list-style-type: none"> - 16 AM/PM chief drivers involved in a series of workshops - A number of workshops conducted by chief drivers - Capacity assessment survey conducted in June 2019
- All drivers have completed the driver training and passed training	100%	<ul style="list-style-type: none"> - Drivers driving record collected and analyzed - Drivers paper and practical tests were conducted during recruitment for Japanese buses - Only drivers who passed paper and practical tests employed by CBA
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	NA	NA
- All conductors have completed the conductor training and passed training	NA	NA
- Safety management system is developed	20%	<ul style="list-style-type: none"> - Traffic accident data collected and analyzed - System supplier for safety driving system surveyed to study a business model

1.4.4. Output 4: Improvement of Business Management Capacity of CBA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	80%	<ul style="list-style-type: none"> - A number of workshops conducted for CBA management and staffs - CBA regularly prepared budget plan as well as revenue/cost reports - Capacity assessment survey conducted in June 2019
- Financial statements are prepared	80%	<ul style="list-style-type: none"> - Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement - CBA regularly prepared budget plan as well as revenue/cost reports
- Operation cost model and passenger database are developed	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus operation are assessed	60%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted in Aug 2017 - Needs in bus operation assessed - Monitoring survey for bus and non-bus passenger conducted in May 2018 and May 2019 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider - CBA carried out dissemination workshops involving all Districts in Phnom Penh in June 2018 and June 2019
- Business plan is formulated and reflects on budget plan	40%	<ul style="list-style-type: none"> - Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared - CBA's new legislation drafted to upgrade to Public Administration Enterprise - PPCA assigned private advertisement company, initiated advertisement, wrapping Chinese/Korean buses and developed nearly 170 sheltered bus stops
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	<ul style="list-style-type: none"> - BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.

<p>- Cashless ticketing system is developed</p>	<p>80%</p>	<ul style="list-style-type: none"> - CBA introduced Wing's NFC card - CBA introduced ACLEDA's QR code - JICA introduced smart phone based ticketing system - Expert Team assists integration of bus location and e-payment system
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1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 5	Achieved	Activities completed
<p>- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level</p>	<p>30%</p>	<ul style="list-style-type: none"> - A number of workshops conducted for CBA and DPWT - A study trip carried out in Malaysia and Singapore and in Japan bus priority measures studied - Capacity assessment survey conducted in June 2019 - A study trip carried out in Malaysia, Singapore, Vietnam and in Japan (improved efficiency in bus operation and business)
<p>- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared</p>	<p>40%</p>	<ul style="list-style-type: none"> - Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed by JCC members - CBA submitted a concept plan as well as budget plan to PPCA - Action plan for priority measures and mobility management scheme prepared - A planning guidebook for mobility management drafted - JICA Expert Team and ADB consultant team coordinate to draft policy guide and planning toolkit which include public transport priority measures - The Project assists PPCA to implement Rapid Bus (bus dedicated lane) at 5km section of Line 4 and ADB to continue to

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		expand it to entire Line 1-4
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	80%	<ul style="list-style-type: none"> - Bus depot layout plan prepared and approved by PPCA - Construction of bus depot completed - Bus facilities (Bus stops/signs) for Phase 1 designed and installed - Bus facilities (Bus stops/signs) for Phase 2 designed and installed - PPCA assigned private advertisement company and developed nearly 170 sheltered bus stops - A design guidebook for bus related facilities drafted
- Bus information and location system is developed	80%	<ul style="list-style-type: none"> - Bidding documents for bus operation and management system completed - GPS installed in all City Buses and bus monitoring and management system developed - Training on bus monitoring and management system implemented

1.5. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	100%	<ul style="list-style-type: none"> - Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 lines by Nov 2017 - Phase 2 bus network and operation plan developed and approved by PPCA - Bus network increased from 8 lines to 13 lines
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	70%	<ul style="list-style-type: none"> - Bus service rate* improved from 67.5% in 2016 to 89.6% as of Mar 2018 - Bus service rate dropped 77.8% as of Dec 2018 and 69.4% as of May 2019 due to increased need for maintenance and traffic congestion - Bus service rate remains still low: 77.1% (Jan 2020) <p>Note: A number of reasons contribute to low service</p>

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The Project for Improvement of Public Bus Operation in Phnom Penh

		rate. First, the daily planned operation bus is estimated based on 4 round trips per bus, which is not practical anymore after extension of the bus route. Secondly, the operation speed is getting lowered due to traffic congestion from 15.0 km/h as baseline in 2017 to 11.3 km/h as of Jan 2020. Thirdly, the rigid AM/PM shift of the driver reduces in-service ratio.
- Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased	80%	<ul style="list-style-type: none"> - Japanese buses (80 units) regularly inspected and initial and periodic maintenance carried out at the mileage - Chinese buses (98 units) also regularly inspected and maintained by CBA
- The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020.	80%	<ul style="list-style-type: none"> - Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 2.01/100,000km (CBA drivers as first party) (5.50/100,000km in total) as of Oct - Dec 2018 - Traffic accident bus caused improved to 1.20/100,000km (CBA drivers as first party), 2.64/100,000km in total accident as of Jan – Apr 2019 - Traffic accident maintained at 1.17/100,000km (CBA drivers as first party), 3.66/100,000km in total accident in Jan – Dec 2019
- Level of perception of the bus improves and customer satisfaction of bus users improves.	80%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted and baseline collected to monitor the performance in May 2018 and May 2019 - Overall satisfaction of bus services level significantly improved from 2.81 (Overall service evaluated as Good) to 3.72 (as Excellent) - Public comments delivered through Facebook and utilize for raise customer satisfaction level - Dissemination campaign for City Bus held in all Khans in 2018 and 2019
- Bus operation cost covered by the revenue in 2020.	13%	<ul style="list-style-type: none"> - Bus revenue covers 20 % of bus operation cost between Jan and Sep 2017 - Bus revenue coverage against operation cost remains low: 13 % of total expenses in 2019
- Average operation speed maintained at 15 km/h in 2020	80%	- Average operation speed maintained at 14.1km/h between Jan-Oct 2018

		<ul style="list-style-type: none">- Average operation speed slightly dropped at 13.6km/h between Jan -May 2019.- Average operation speed records at 13.1 km/h in 2019 and tends to continue slowing down at 11.3 km/h in Jan 2020
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1.6. Changes of Risks and Actions for Mitigation

Not applicable

1.7. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.8. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Project assisted to recruit female bus driver(s) and as of Nov 2019, one female driver in a regular bus service and another female driver already got license and started on road training.

1.10. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

Not applicable

2. Delay of Work Schedule and/or Problems (if any)

2.1. Summary

Due to delayed procurement of Japanese buses (originally delivery of Japanese buses scheduled to be completed by Feb 2018, however, last and actual delivery was completed in Dec 2018), there is a risk that the major maintenance of Japanese bus scheduled every 120,000 km cannot be completed by the end of the Project (by Dec 2020).

2.2. Cause

Delayed procurement of Japanese buses

2.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Review and development of maintenance manual for the major defects/maintenance by Expert Team
- On-the-job training for major defects/maintenance by Expert Team
- Discussion for extension of the Project, including that on revised PDM/PO between Expert Team and CBA/PPCA
- Negotiation on contract addendum for extension of the Project between Expert Team and JICA

2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

The above actions be taken by each responsible organization.

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 8

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.8 (Term: Feb 2020 – Dec 2020)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 22nd January 2021

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as ***Annex 5: Inputs provided***. The list of working conditions of equipment provided is also attached as ***Annex 6: Working Conditions of Equipment Provided***.

<Cambodian Side>

1. Counterpart personnel: Three (3) organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See ***Annex 5: Inputs provided***.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety

- 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management
 - 10) Mobility Management (1/2/3)
 - 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was completed in Feb/March 2018 in Malaysia and Singapore. The 2nd study trip was completed in Feb 2019 in Japan. The 3rd study trip was carried out from 6th to 11th October 2019 in Vietnam and Singapore. The 4th and final study trip to Japan was scheduled in May 2020, however due to the COVID-19 pandemic, it was postponed until further notice.
3. Machinery and equipment:
Bus Operation and Management System (BOMS), Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

Due to COVID-19 pandemic, all CBA bus services have been suspended since 26th March 2020. Though still unconfirmed, there is a on-going discussion between PPCA and CBA to restart bus operation scheduled in March/April 2021.

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*)
4. 1st JCC (*9th May 2017*)
5. 2nd JCC (*8th June 2018*)
6. 3rd JCC (*4th July 2019*)
7. Other significant progress (relating to external factors of the Project)
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)
 - ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of mechanics (*occasionally*)

- vi. Employment of drivers/office staffs (*occasionally*)
- 8. Other significant progress (COVID-19 countermeasures)
 - i. Implementation of Hygiene and Prevention Training” for “Zero COVID-19 Infections from Bus Drivers and Passengers” (Apr 2020)
 - ii. Procurement of equipment for COVID-19 infection prevention measures
 - iii. Installation of equipment for infection prevention
 - iv. Sanitization for bus vehicles against COVID-19
 - v. COVID-19 measures for bus vehicles during operation
 - vi. COVID-19 campaign for bus users
 - vii. Social contribution using CBA bus fleets (e.g., shuttle transport for international passengers, transport service for essential workers such as doctors and medical staffs)
 - viii. Online survey (PR for COVID-19 countermeasures, bus suspension and impact by COVID-19)
 - ix. Cross country study on countermeasures against COVID-19 for local authority and public transport service providers



Seminar on Zero COVID-19 Infections



Handover of equipments for infection prevention measures

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- Output 1 Bus operation capacity of CBA is improved
- Output 2 Maintenance and inspection capacity on bus vehicles of CBA is implemented
- Output 3 Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA
- Output 4 CBA's business management capacity is improved
- Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the

public transport priority measures is improved

List of Workshops/Technical Trainings (up to Dec 2020, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output related
1	20 Jan 2017	Half Day	Work Plan Outline	10	1
2	24 Feb 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	4 Mar 2017	Haft Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	5 Jul 2017	Half Day	GPS System	13	5
6	11 Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11 Jul 2017	Half Day	Bus Stop Design Gide	12	1
8	11 Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	6 Sept 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	8 Sept 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sept 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct 2017	Half Day	Matters agreed between CBA, Jica expert and CJEC	9	5
13	31 Oct 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	7 Nov 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov 2017	Half Day	Implement Bus Operation Management System	14	5
16	7 Dec 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec 2017	Half Day	Mobility Management	21	5
18	15 Dec 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec 2017	Half Day	3 rd Workshop for the management and the accounting	12	4
22	21 Dec 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ	16	1
26	22 Feb 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb 2018	Half Day	Bus Driving Training (2)	16	3
28	27 Feb 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1
29	3 Mar 2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	1
30	9 Mar 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	4 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	5 Jun 2018	Haft Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	6 Jun 2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5
40	7 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	7 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	7 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	5
43	20 Jun 2018	Haft Day	Bus Operation Training	15	3

PM Form 3-1 Monitoring Sheet Summary

The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	No. of participants	Output related
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	5 Sep to 07 Oct 2018	33 Days	Bus driving training	No.1: 60, No.2: 60, No.3:40, No.4:40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	5
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
51	14 Dec 2018	Half Day	Progress Report	11	3
52	19 Dec 2018	Half Day	Safety Operation	10	3
53	19 Dec 2018	Half Day	Mobility Management Guideline	10	3
54	25 Nov-22 Dec 2018	22 Days	Chief Driver Training, New Driver Training and Mechanic Training	76	5
55	21 Jan 2019	Half Day	Fare Policy	13	4
56	31 Jan 2019	Half Day	Discussion on CBA's Condition and Registration Book	10	4
57	21 Mar 2019	Haft Day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	5
58	03 Jun 2019	Half Day	Dissemination Campaign at Khan Doun Penh	72	5
59	05 Jun 2019	Half Day	Dissemination Campaign at Khan Toul Kork	73	5
60	06 Jun 2019	Half Day	Dissemination Campaign at Khan Mean Chey	110	5
61	06 Jun 2019	Half Day	Dissemination Campaign at Khan Cham Kar Morn	97	5
62	07 Jun 2019	Half Day	Dissemination Campaign at Khan Chbar Ampov	92	5
63	10 Jun 2019	Half Day	Dissemination Campaign at Khan Dangkor	86	5
64	11 Jun 2019	Half Day	Dissemination Campaign Khan Por Sen Chey	114	5
65	13 Jun 2019	Half Day	Dissemination Campaign Khan 7 Makara	49	5
66	13 Jun 2019	Half Day	Dissemination Campaign Khan Sen Sok	52	5
67	14 Jun 2019	Half Day	Dissemination Campaign Khan Ressey Keo	90	5
68	20 Jun 2019	Half Day	Dissemination Campaign Khan Chhrouey Chang Va	46	5
69	21 Jun 2019	Half Day	Dissemination Campaign Khan Preak Phnov	104	5
70	02 Jul 2019	Half Day	Bus Scheduling improvement for CBA (Training)	25	1
71	05 Jul 2019	Half Day	Bus Maintenance, Explanation (Roll Call & Bus Schedule	7	2
72	22 Jul 2019	Half Day	MM Action Plan Final, Concept Plan of Priority Measures Route Sele	9	5
73	22 Jul 2019	Half Day	4 th Management Workshop Financial Simulation and Cost Reduce	11	4
74	10 Jul 2019	Half Day	Roll Call Training	50	3
75	15-19 Jul 2019	5 Days	New Driver Training	18	3
76	30 Jul 2019	Half Day	Driver Training Report, Promotion Video for Phnom Penh City Bus and The Progress of Bus Operation & Management System.	13	3
77	13 Aug 2019	Half Day	Bus Operation Plan and Deployment Plan	9	1
78	22 Aug 2019	Half Day	Scope of Pilot Bus Priority Measures	8	5
79	03 Oct 2019	Half Day	Rapid Bus Project 2019-2010	19	5
80	22 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108	5
81	24 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64	5
82	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89	5
83	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115	5
84	05 Nov 2019	Half day	Assembly Meeting (Utilization of Training video for drivers and mechanics)	Appx. 200 (All available staff of CBA)	2
85	07 Nov 2019	Half Day	Bus Maintenance	17	2

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	No. of participants	Output related
86	12 Dec2019	Haft Day	Project Monitoring Sheet and Progress of Bus Operation & Management System	21	4
87	12 Dec2019	Half Day	E-Motorcycle sharing with City Bus	19	5
88	20 Dec 2019	Half Day	Preliminary Opinion Survey for Mobility Management	22	5
89	06 Jan 2020	Half Day	Summary of Activities of Finance and Management Area	11	4
90	20 Jan 2020	Half Day	Overview of JICA's bus Priority Pilot Project	15	5
91	07 Feb2020	Half Day	Progress of Bus ICT	15	4
92	11 Mar 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane and Report of Parameter setting for Bus Priority signal control.	10	5
93	17 Mar 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane.	11	5
94	29 Apr 2020	Half Day	NO Corona Infections from CBA and Bus Users	13	1
95	8-May-20	Half Day	Concept Design Policy on JICA's Bus Priority Lane	11	5
96	28-May-20	Half Day	Zero Corona Infections from Bus Drivers and Passengers	10	2
97	27-28 May 2020	2 Days	Leaning Seminar on Hygiene and Prevention against COVID-19	513	1
98	12-Jun-20	Half Day	Concept Design Policy on JICA's Bus Priority Lane	6	5
99	30-Jun-20	Half Day	Brief Progress Report to H.E Deputy Governor of PPCA	7	1
100	8-Jul-20	Half Day	Tracking System for COVID-19 (PIBO)	7	1
101	22-Jul-20	Half Day	Pandemic Bus Operation and Management Guide and Drivers COVID-19 Counter measures work content	11	3
102	05 Aug 2020	Half Day	Progress on E-bike Sharing	12	5
103	11 Aug 2020	Half Day	Bus vehicle maintenance expert	15	2
104	25 Aug 2020	Half Day	Progressive on E-bike sharing	8	5
105	26 Aug 2020	Half Day	Basic Approval on Installation of 4 Routers	7	4
106	26 Aug to 01 Sep 2020	5 days	Pandemic Bus Operational and Management Guide	465	3
107	02 Sep 2020	1 Day	Bus operation plan and deployment plan	7	1
108	25 Sep 2020	1 Day	Mobility Management "Remote Activity" Draft Plan + MOU	12	5
109	28 Sep 2020	1 Day	Pandemic Bus Operational and Management Guide	58	3
110	29 Sep 2020	1 Day	Preparation for the Reconstruction of the Public Bus	21	1
111	16 Oct 2020	Half Day	Improved sustainability of mechanics training- Coordination with NPIC and JVC	15	2

List of Online Meetings/Technical Trainings (up to Dec 2020, Order by date)

<For Output 2/3/4>

No.	Date	Duration	Title of Training	Target section in CBA
1	17 Jun 2020	Half day	Progress of maintenance work, Air ventilation test, Improvement of BOMS, Training video	Mechanic section
2	09 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section
3	16 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section
4	21 Jul 2020	Half day	Driver training video, Mechanic training video, Progress of maintenance work	Mechanic section
5	30 Jul 2020	Half day	Driver training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Mechanics training video, Improvement of BOMS	Mechanic section
6	06 Aug 2020	Half day	Installation of COVID-19 tools/equipment, Driver training video, Monitoring initial defects, Mechanics training video, Improvement of BOMS	Mechanic section
7	13 Aug 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection	Mechanic section
8	25 Aug 2020	Half day	Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section

PM Form 3-1 Monitoring Sheet Summary

The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	Target section in CBA
9	03 Sep 2020	Half day	Bus operation plan and deployment plan with COVID-19 pandemic, Driver training video, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section
10	10 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment	Mechanic section
11	23 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section
12	01 Oct 2020	Half day	Driver training video, Driver training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section
13	08 Oct 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section
14	14 Oct 2020	Half day	Driver training video, Driver training, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section
15	22 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
16	28 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
17	05 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
18	12 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
19	19 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
20	25 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
21	03 Dec 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Improvement of bus services, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section
22	10 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	Target section in CBA
23	16 Dec 2020	Half day	Improvement of bus service	Mechanic section
24	25 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section
25	06 Jan 2021	Half day	Improvement of bus services, Monitoring initial defects, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section

<For Output 5>

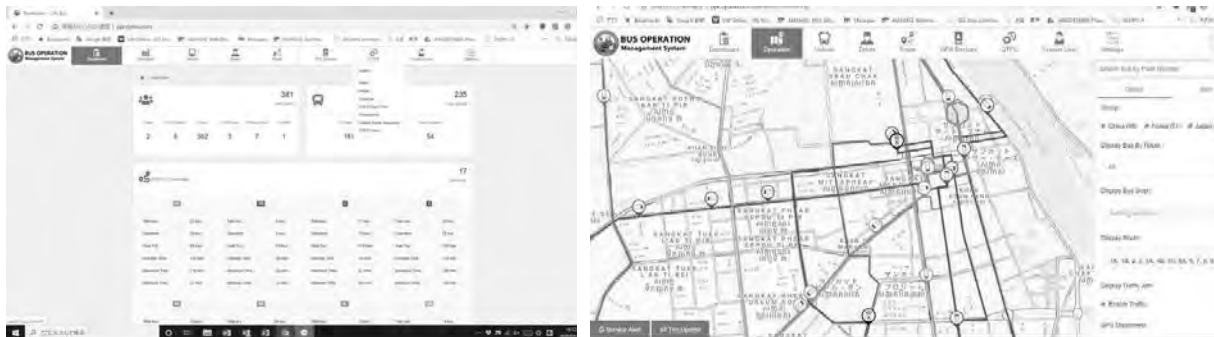
No.	Date	Duration	Title of Training	Target section in CBA
1	09 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (1)	Technical section
2	16 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (2)	Technical section
3	27 Jul 2020	Half day	Ideas for Facebook promotion and promotion videos, Preparation for bus information provision at major facilities	Technical section
4	04 Aug 2020	Half day	Example script and storyboard for "How-to" videos, Filming of the video, Destination introduction by CBA staff/ drivers	Technical section
5	11 Aug 2020	Half day	Sample format for bus stop information for major facilities (How to prepare and scale-up), Discussion on progress of the video making	Technical section
6	24 Aug 2020	Half day	Overview of Mobility Management Activity of PIBO Project, Promotion Campaign at Schools	Technical section
7	31 Aug 2020	Half day	Discussion on Bus Operation Information, Discussion on COVID-19 Video, Discussion on schedule and how to proceed, targeting bus operation from October	Technical section
8	07 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (1)	Technical section
9	15 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (2)	Technical section
10	25 Sep 2020	Half day	Overview of Mobility Management activities and progress, Items to confirm with regard to bus operation restarts, Activities for the future	Technical section
11	05 Oct 2020	Half day	Bus operation restart information (video, poster, banner, press release)	Technical section
12	19 Oct 2020	Half day	Online survey (How to conduct, How to utilize result) (1)	Technical section
13	10 Oct 2020	Half day	Online questionnaire survey on City Bus's COVID-19 measures	Technical section
14	05 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (2)	Technical section
15	16 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (3)	Technical section
16	30 Nov 2020	Half day	Online survey (How to increase the number of respondent, How to inform PPCA and motivate PPCA for early operation)	Technical section
17	08 Dec 2020	Half day	Summary of Mobility Management activities done in 2020, Way forward : Preparation for restart	Technical section

< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (Sep 2018)
12. Stepwise implementation of Phase 2 (Line 1-13 start operation on 1st Oct 2018, 235 buses are in operation)
13. New bus depot operation (*starting in Feb 2019*) and completion of stepwise implementation of Phase 2 (*Feb 2019*)
14. Monitoring of Phase 2 operation plan (*On-going*)
15. Implementation of Capacity Assessment Survey (*June 2019*)
16. Review/revision of bus operation plan under non-Korean bus assumption (*July 2019*)
17. Confirmation of suspension of Korean buses operation and modification of bus operation plan (*Aug 2019*)
18. Stepwise implementation of revised Phase 2 (181 buses in operation)
19. Start operation of Bus Operation Management System (BOMS) (*July 2019*)

20. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster (Dec 2019)
21. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (Feb 2020)
22. Integration of scheduled bus and drivers roster in BOMS (Feb 2020)
23. Improvement of operational analysis (based on scheduled bus and drivers roster) through BOMS (Feb 2020)
24. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (Apr and May 2020)
25. Review and examination of bus route improvement under COVID-19 (Sep 2020, Dec 2020)
26. Preparation of bus operation plan/bus fleet deployment plan to resume bus service towards Post COVID-19 pandemic (Sep 2020, Dec 2020)
27. Timetable improvement to resume bus service under COVID-19 (Sep 2020, Dec 2020)
28. Improvement of BOMS and development of timetable database (Sep 2020, Dec 2020)
29. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Materials**)



Screenshot of Bus Operation and Management System (BOMS)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (Feb – Mar 2017)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus terminals
2. Review on maintenance plan and maintenance equipment for Japan grant-aid

- bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
 4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
 5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
 6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
 7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
 8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
 9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
 10. Recruitment of Chief Mechanic (*April 2018*)
 11. Recruitment of 18 Mechanics (*by May 2018*)
 12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan's Grant Aid)
 13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
 14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
 15. Implementation of periodical inspection and maintenance (5,000km initial inspection and oil change) (*Sep 2018 – onward*)
 16. New bus depot operation (*from Feb 2019*) and set-up of inspection and maintenance office/storage
 17. Implementation of Capacity Assessment Survey (*June 2019*)
 18. Development of training video for bus inspection and maintenance (*Oct 2019*)
 19. Dissemination of training video and training for bus inspection and maintenance (*Nov 2019*)
 20. Integration of fleet management system into BOMS (*Jan 2020*)
 21. Improvement of fleet management analysis through BOMS (*Feb 2020*)
 22. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (*Apr and May 2020*)
 23. Online monitoring of inspection and maintenance works (*May 2020 onwards*)
 24. Development of database on regular inspection and maintenance records (*May 2020 onward*)
 25. Improvement of BOMS and development of inspection and maintenance database (*May 2020 onward*)
 26. Development of mechanic staff training video under COVID-19 pandemic (*May 2020 onward*)
 27. Discussion on enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures (*Oct 2020 onward*)

28. Preparation of long-list of maintenance tools and equipment for collaboration with NPIC and COVID-19 countermeasures (Dec 2020)
29. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers
 - 3) On-board survey on drivers/conductors and driving skills
 - 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (*Sep 2017*)
3. Study of safety management system and drivers/conductors training in Japan (*July 2017*)
4. Participate in intensive training course organized by Eagle Bus Corp. (*Nov 2017*)
5. Recruitment/training to drivers for 98 Chinese buses (*Aug – Nov 2017*)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (*Nov 2017*)
7. Monitoring on accidents of bus (*Sep 2017 onward*)
8. Preparation of Safety Driving Manual and training on safety driving (*Feb 2018*)
9. Preparation of Driver’s training material (*Aug 2018*) (under cooperation with the supplier under Japan’s Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (*May to Oct 2018*)
11. Deployment of driver and fleet for Phase 2 operation plan (*Sep 2018*)
12. Intensive training for selected reckless drivers (*Dec 2018*)
13. Recruitment/training for female driver(s) (*on-going*)
14. Implementation of Capacity Assessment Survey (*June 2019*)
15. Revision of drivers’ assignment schedule, following revised operation plan (*Aug 2019*)
16. Retirement recommendation and negotiation for reckless drivers (*Sep - Oct 2019*)
17. Development of training video for safety driving (*Nov 2019*)
18. Dissemination of training video and training for safety driving (*Nov 2019*)
19. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers’ roster (*Dec 2019*)
20. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (*Feb 2020*)
21. Improvement of driver’s management system (based on scheduled bus and

- drivers roster) through BOMS (*Suspended due to temporary termination of City bus operation*)
22. Procurement of Alcohol Detector (*Ditto*)
 23. Monitoring of fleet and driver deployment plan and operation (*Ditto*)
 24. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (Apr and May 2020)
 25. Seminar on Hygiene and Prevention against COVID-19 (May 2020)
 26. Development of drivers and staffs training video under COVID-19 pandemic (August 2020)
 27. Training for Pandemic Bus Operational and Management Guide (Aug 2020)
 28. Procurement of tools and equipment for COVID-19 countermeasures including Hypochlorous acid water generator (Sep 2020)
 29. Handover ceremony of tools and equipment for COVID-19 countermeasures (Sep 2020)
 30. Installation of driver's protection shield (completed in Nov 2020)
 31. Development of time table and driver's roster database under COVID-19 (Sep 2020, Dec 2020)
 32. Improvement of BOMS and development of driver's roster database (Sep 2020, Dec 2020)
 33. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 7: Meeting/Workshop Materials***)

The activities for ***Output 4 "Improvement of Business Management Capacity of CBA"*** are undergoing.

1. Baseline survey (*Sep and Dec 2017*)
 - 1) Data collection of CBA's financial statement
 - 2) Data collection of PPCA's financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA's accounting office
 - 5) Input data collection for BOM model
2. Bus business management (*Sep 2017 to onward*):
 - 1) Data analysis of CBA and PPCA's financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination on business plan of company bus
 - 6) Preliminary study on fare policy and subsidy policy
 - 7) Draft decree for fare and subsidy structure
 - 8) Study and refine of BOM model

3. ICT-based management (*May 2017 to onward*):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (*Nov 2017 – Mar 2018*)
 - 4) Procurement of ICT equipment (Phase 1: GPS and Server) (*Sep 2018*)
 - 5) Procurement of AEON mobile payment system (*Sep 2018*)
 - 6) Official launching ceremony for Bus Location System (*July 2019*)
 - 7) Procurement of ICT equipment/software (Phase 2: Bus Operation Management System: BOMS) (*Dec 2018 – ongoing*)
 - 8) Assistance to integration of bus location system and e-payment system (*Nov 2019*)
 - 9) Improvement of BOMS, including development of KPI, design of Dashboard and reporting system (*Suspended due to temporary termination of City bus operation*)
 - 10) Support CBA to register on Google as public transport operator (registered in July 2020)
 - 11) Update information of bus stop location (May 2020, Nov 2020)
 - 12) Preparation of system design for Google based bus location system (June 2020 onward)
 - 13) Support to develop GTFS data and submit data to Google (Bus facility and operation data) (May 2020 onward)
4. Strengthening of City Bus Authority (*May 2018 to onward*):
 - 1) Official request to upgrade the Authority to Public Enterprise by MEF (*May 2018*)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (*Oct 2018*)
 - 3) Draft legislation for upgrading Public Administration Enterprise (*Jan 2019*)
 - 4) Implementation of Capacity Assessment Survey (June 2019)
5. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (*July and Aug 2017*)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (*July 2017*)
3. Review of 2014 Urban Transport Master Plan (*July 2017*)

4. Preparation of a concept plan of public transport priority measures (*July 2017*)
5. Preparation of a concept mobility management plan (*Dec 2017*)
6. Preparation of bus depot layout plan (*May – Aug 2017*)
7. Approval of bus depot design by Governor (*Dec 2017*)
8. Preparation of bus color design (*Dec 2017*)
9. Technical advice on bus depot design (*Jan - Feb 2018*)
10. Examination and discussion on Public transport priority measures (*Jan - Feb 2018*)
11. Implementation plan on mobility management workshop (*Mar 2018*)
12. Implementation plan on public transport priority measures (*Mar 2018*)
13. Implementation of series of dissemination campaign (*May – June 2018*)
14. Monitoring of bus depot development (*Aug 2018 – Jan 2019*)
15. Monitoring of bus facility development (*Aug 2018 – Jan 2019*)
16. Preparation of Design Guides (*Dec 2017 – onward*)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development) (*Nov 2018 – onward*)
18. Implementation of bus user/ non-bus user survey (*May 2019*)
19. Action plan on mobility management (*On-going*)
 - i. Bus map review and revision (*Feb 2019*)
 - ii. Monitoring bus facilities condition (*Feb 2019 – onward*)
 - iii. Preparation of mobility management action plan (*Feb 2019 – onward*)
 - iv. Provision of bus trial/special shuttle service as part of bus dissemination campaign (e.g., Tanabata Festival, Japan Movie Festival, Japan Scholarship Event) (*Feb 2019 – onward*)
 - v. Coordination with Tsukuba Univ for mobility management (*Sep 2019 – onward*)
 - vi. Mobility Management Survey with Tsukuba Univ (*Dec 2019*)
 - vii. Preparation of dissemination campaign for school (*Jan 2020*)
 - viii. Preparation of test user and dissemination campaign for the pilot project (*Jan 2020*)
 - ix. Bus map review and revision (*Jan 2020*)
 - x. Revision of mobility management plan as part of COVID-19 countermeasures (*July 2020*)
 - xi. Preparation of public announcement materials for restoration of City bus (*July to Sep 2020*)
 - xii. Development of PR videos for COVID-19 countermeasures as well as

- restoration of City bus (July to Nov 2020)
 - xiii. Online public opinion survey (Nov 2020)
 - xiv. Development of PR material (Human story) as COVID-19 countermeasures (Dec 2020 onwards)
 - xv.
- 20.** Action plan on public transport priority measures (*On-going*)
- i. Coordination meeting with a traffic control supplier on PTPS (*April 2019*)
 - ii. Set-up WG (Working Group) for Pilot Project (*July 2019*)
 - iii. Organize a series of WGs (*July 2019 – onwards*)
 - iv. Planning action plan on bus priority measures and Pilot Project (*July 2019*)
 - v. Approval of contents and scheduled of Pilot Project by Governor of PPCA (*July 2019*)
 - vi. Planning stakeholder management plan for Pilot Project (*Sep 2019*)
 - vii. Organize a dissemination campaign for Pilot Project at 4 Khans (*Oct 2019*)
 - viii. Preparation of concept design of the Rapid Bus (*Jan 2020*)
 - ix. Preparation of the pilot Bus Priority Signal (*Jan 2020*)
 - x. Preparation of the pilot e-Bike Sharing (Suspended due to temporary termination of City bus operation)
 - xi. Implementation of dissemination campaign for pilot projects (Suspended due to temporary termination of City bus operation)
 - xii. Preparation of design standard for bus priority lane (March to July 2020)
 - xiii. Examination of BOQ and cost estimate for bus priority lane (July 2020)
 - xiv. Preparation of enhanced signal operation plan (May 2020)
 - xv. Procurement of router for enhanced operational network (Ongoing)
- 21.** Implementation of Capacity Assessment Survey (*June 2019*)
- 22.** Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)



Screenshot of Mobile Application for bus location System

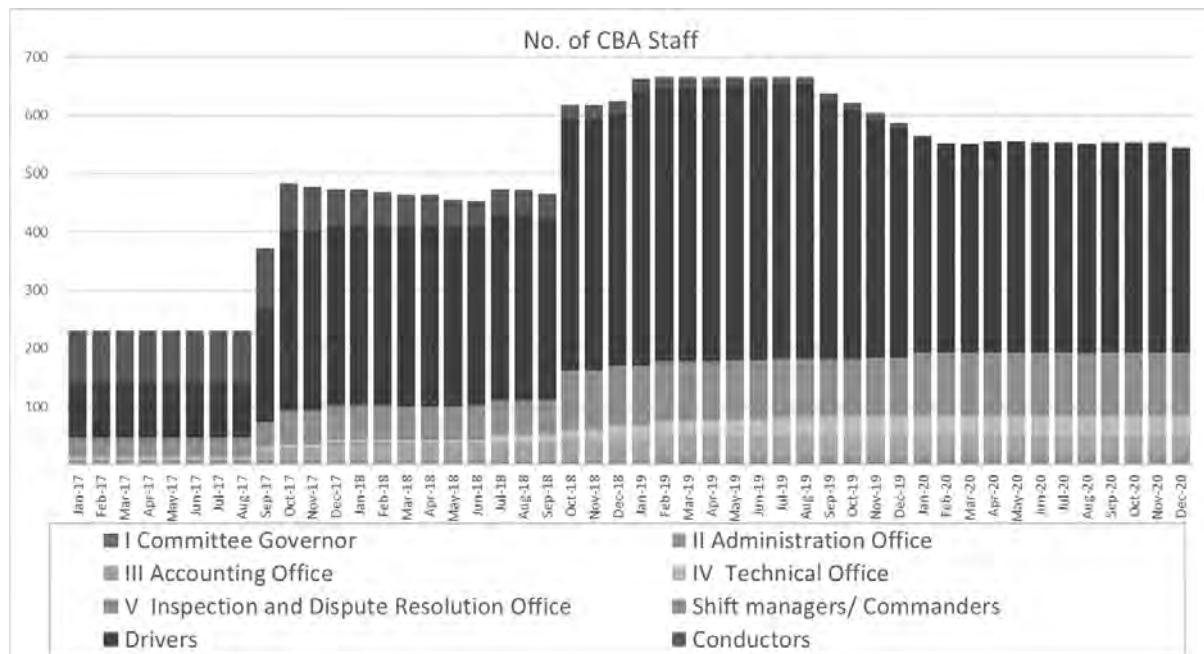
1.3. Monitoring Indicators

The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured from next section.

1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

(1) No. of CBA staff by section

As of December 2020, the total number of employees of CBA is 545, including 352 bus drivers. The number of drivers has been decreased since August 2019, due to the demolition of 54 second-hand Korean buses and accordingly, CBA optimized the number of drivers/conductors. The CBA has been reducing the number of conductors and by January 2020 all the conductors are either dismissed or transferred to other sections in CBA.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1(1) Number of CBA Staff (2017-2020)

Table 1.3.1 (1) Number of CBA Staff by Section (2019-2020)

	Committee Governor	Administrati on Office	Accounting Office	Technical Office	Inspection and Dispute Resolution Office	Shift managers/ Commander s	Drivers	Conductors	Total
Jan-19	3	6	37	24	6	95	470	22	663
Feb-19	3	10	38	25	6	95	470	18	665
Mar-19	3	11	38	25	6	95	469	18	665
Apr-19	3	11	38	25	6	95	469	18	665
May-19	3	13	34	29	6	95	470	16	666
Jun-19	3	13	34	29	6	95	470	15	665
Jul-19	3	13	34	32	6	95	470	13	666
Aug-19	3	13	34	32	6	95	470	12	665
Sep-19	3	13	34	33	6	92	444	12	637
Oct-19	3	13	34	33	6	92	428	12	621
Nov-19	3	13	33	34	6	95	409	11	604

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	Committee Governor	Administrati on Office	Accounting Office	Technical Office	Inspection and Dispute Resolution Office	Shift managers/ Commander s	Drivers	Conductors	Total
Dec-19	3	13	33	34	6	95	395	8	587
Jan-20	3	13	33	36	13	95	372	0	565
Feb-20	3	14	33	35	13	95	359	0	552
Mar-20	3	14	33	35	13	95	358	0	551
Apr-20	3	14	33	35	13	95	361	0	554
May-20	3	14	33	35	13	95	361	0	554
Jun-20	3	14	33	35	13	95	360	0	553
Jul-20	3	14	33	35	13	95	360	0	553
Aug-20	3	14	33	35	13	93	360	0	551
Sep-20	3	14	33	35	13	95	360	0	553
Oct-20	3	14	33	35	13	95	360	0	553
Nov-20	3	14	33	35	13	95	360	0	553
Dec-20	3	14	33	35	13	95	352	0	545

Source: prepared by JICA Expert based on data from CBA

(2) No of bus lines and fleets

The number of bus routes operated by CBA was 3 at the beginning of the project. Since then, the bus route has been steadily expanded to 5 routes in September 2017, 8 routes in November 2017, and 13 routes in October 2018. The number of buses owned by CBA was once 57 Korean buses at the beginning of the project. Since then, the number of buses has increased to 235 in March 2019, including 98 Chinese buses and 80 Japanese buses. In September 2019, CBA decided to suspend the use of 54 second-hand Korean buses, due to the high operation and maintenance cost of these Korean buses and CBA owns 181 buses as of December 2020 (Note that around 10 buses are used for essential workers and needs for COVID-19 and which are excluded from the below figure).

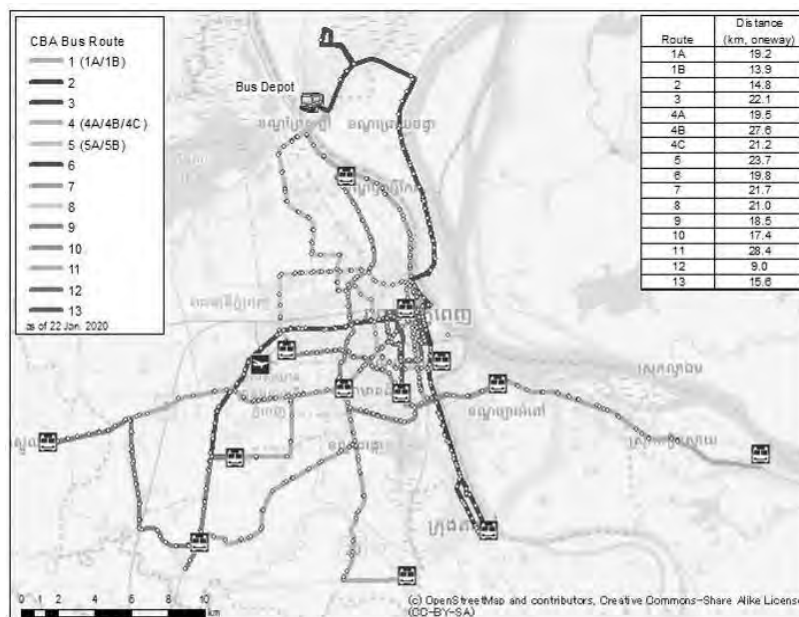
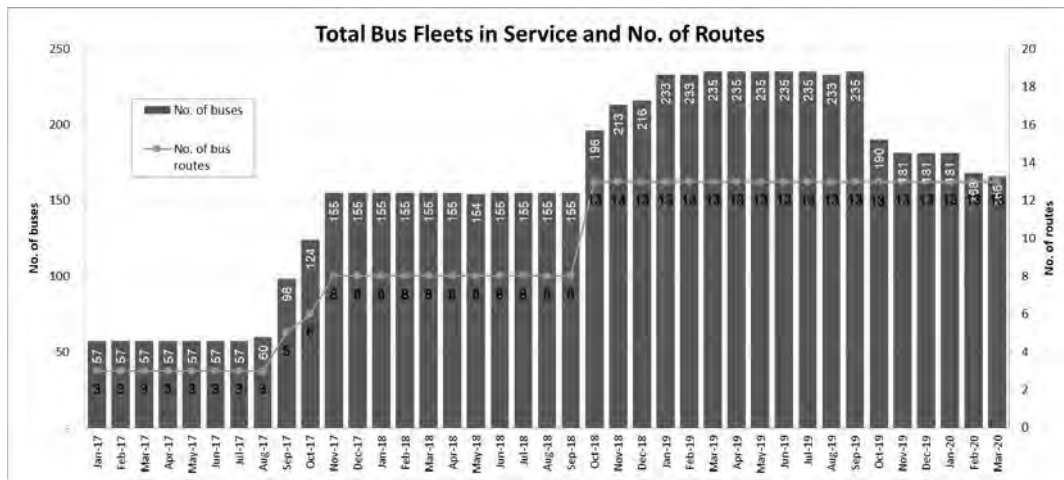


Figure 1.3.1 (2) CBA Bus Operation Route 2020



Source: prepared by JICA Expert based on data from CBA and BOMS

Figure 1.3.1 (3) Number of CBA Buses and Routes

(3) Summary of bus operation service level

The missed trip rate has significantly improved from an average of 30% in 2019 to below 20% in January to March 2020. The main contributor to this improved missed trip rate is the planned repair and maintenance (which increases operational rate of the bus fleets) as discussed in the next section.

Table 1.3.1 (2) Bus Service Level (2018-2020)

Year 2020

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-20	13	181	588	480.0	18.4%	18,105	543,162	11.3
Feb-20	13	168	662	556.5	15.9%	21,602	648,060	12.9
Mar-20	13	166	644	529.0	17.8%	20,471	614,136	15.6
Apr-20	13	-	-	-	-	-	-	-
May-20	13	-	-	-	-	-	-	-
Jun-20	13	-	-	-	-	-	-	-
Jul-20	13	-	-	-	-	-	-	-
Aug-20	13	-	-	-	-	-	-	-
Sep-20	13	-	-	-	-	-	-	-
Oct-20	13	-	-	-	-	-	-	-
Nov-20	13	-	-	-	-	-	-	-
Dec-20	13	-	-	-	-	-	-	-
Total in 2020	13	-	631	522	17.3%	20,060	1,805,358	13.3

Source: prepared by JICA Expert based on data from CBA

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

Year 2019

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-19	13	233	839	652.5	22.2%	25,272	758,163	13.7
Feb-19	13	233	870	675.0	22.4%	25,681	770,418	13.7
Mar-19	13	235	889	672.5	24.3%	25,907	777,198	13.8
Apr-19	13	235	853	604.5	29.1%	23,167	695,001	13.7
May-19	13	235	902	626.0	30.6%	23,849	715,464	13.0
Jun-19	13	235	878	605.5	31.0%	22,878	686,337	13.3
Jul-19	13	235	860	573.5	33.3%	21,961	658,839	12.0
Aug-19	13	233	865	524.0	39.4%	19,750	592,488	10.8
Sep-19	13	235	867	519.0	40.1%	20,033	600,993	11.2
Oct-19	13	190	717	452.0	37.0%	16,644	499,326	11.9
Nov-19	13	181	644	482.4	28.0%	17,243	517,293	14.6
Dec-19	13	181	664	500.5	24.6%	18,804	564,123	15.5
Total in 2019	13	181	820	574	30.0%	21,766	7,835,643	13.1

Source: prepared by JICA Expert based on data from CBA and BOMS

Year 2018

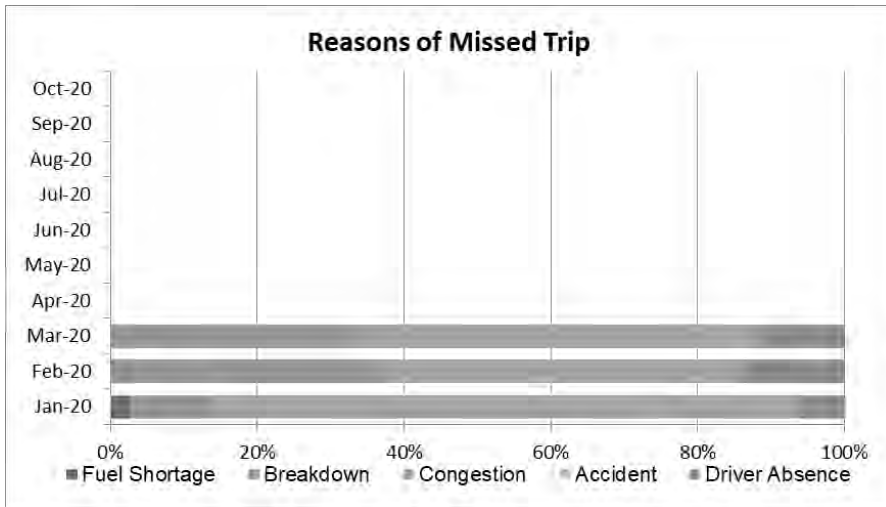
Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

Source: prepared by JICA Expert based on data from CBA

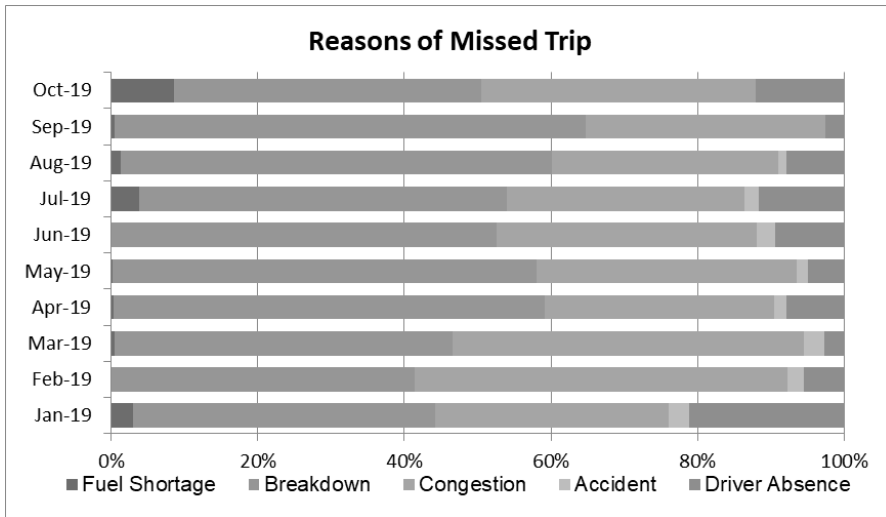
(4) Reasons of missed trip

The most common reason for missed trips in 2020 recorded by traffic congestion, followed by bus breakdowns/repairs and 80% of missed trips caused by these two reasons. The bus breakdowns/repairs are the top reason for missed trip since the project started and improved and/or planned inspection and maintenance may contribute to reducing the missed trip in 2020.

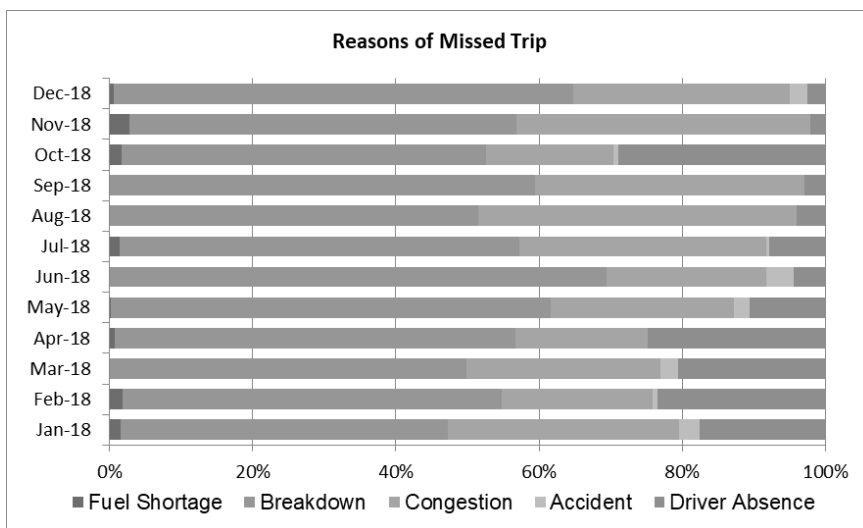
Year 2020



Year 2019



Year 2018



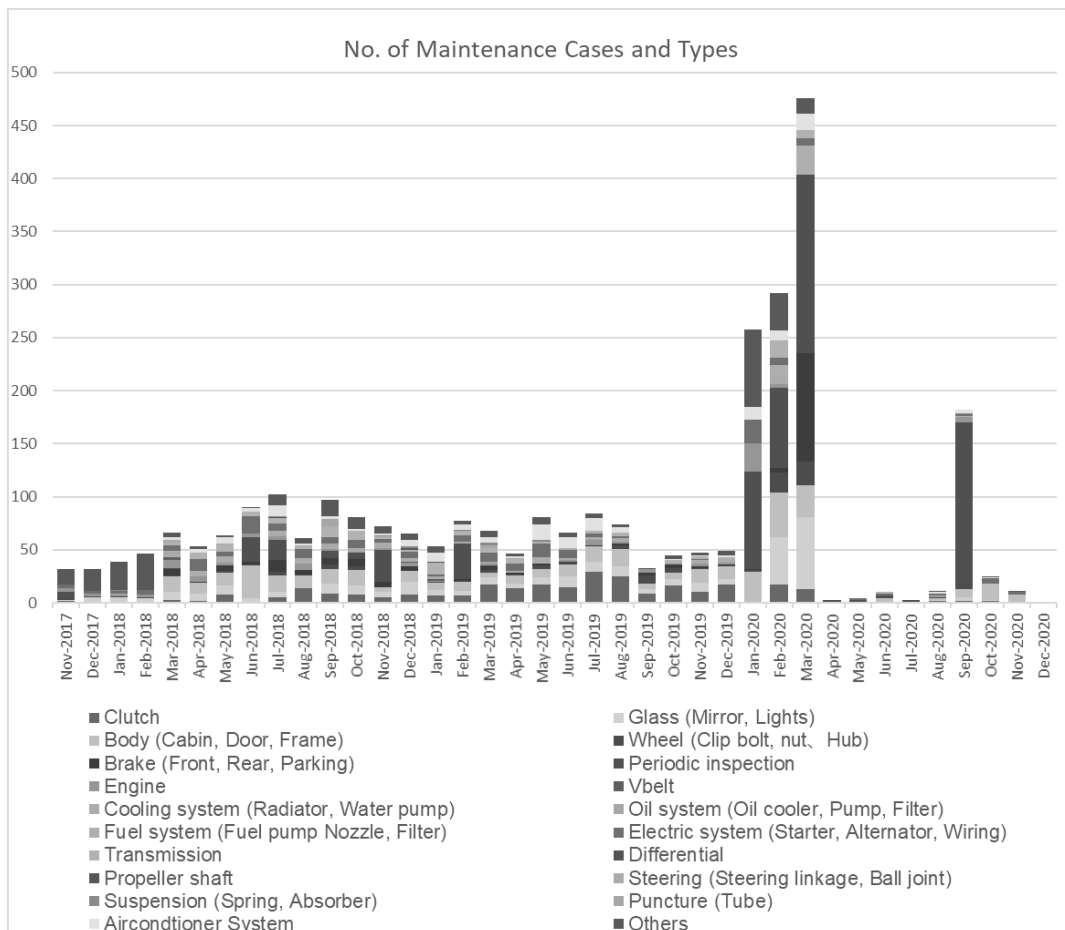
Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1(4) Reason of Missed Trip (2018-2020)

1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

(1) No. of maintenance cases and types

There has been significant increase in the number of cases both inspection and maintenance since January 2020. As a result, as observed in the previous section, the number of missed trips due to the breakdown of the bus in operation has decreased significantly.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.2(1) Number of Maintenance Cases and Maintenance Type (2017-2020)

1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

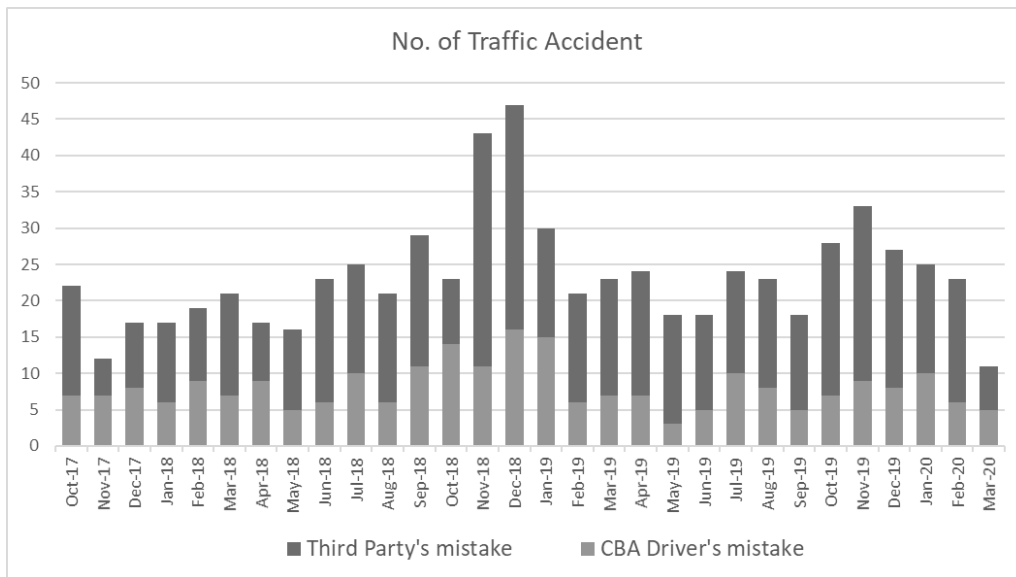
There has been a significant improvement in the driving skills and traffic safety since the project started and the number of accidents caused by the drivers dropped drastically from 2018 to 2019. The accident record obtained from CBA implies the drivers maintained the safety of their driving at low rate of the accident cases caused by the drivers.

Table 1.3.3(1) Summary of Accident Statistics (2018-2020)

Traffic Accident				Traffic Accident			
Month	Occurance	Accident rate (all)	CBA driver's mistake	Month	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)		(cases)	(cases/100,000km)	(% of cases)
Jan-20	25	4.60	40.0%	Jan-19	30	3.96	50.0%
Feb-20	23	3.55	26.1%	Feb-19	21	2.73	28.6%
Mar-20	11	1.79	45.5%	Mar-19	23	2.96	30.4%
Total in 2020	59	3.27	37.2%	Apr-19	24	3.45	29.2%
				May-19	18	2.52	16.7%
				Jun-19	18	2.62	27.8%
				Jul-19	24	3.64	41.7%
				Aug-19	23	3.88	34.8%
				Sep-19	18	3.00	27.8%
				Oct-19	28	5.61	25.0%
				Nov-19	33	6.38	30.3%
				Dec-19	27	4.79	25.9%
				Total in 2019	287	3.66	30.7%

Traffic Accident			
Month	Occurance	Accident rate	CBA driver's mistake
	(cases)	(cases/100,000k)	(% of cases)
Jan-18	17	3.11	-
Feb-18	19	3.37	100%
Mar-18	21	3.70	100%
Apr-18	17	3.03	100%
May-18	16	2.84	100%
Jun-18	23	4.24	100%
Jul-18	25	4.54	75%
Aug-18	21	3.60	100%
Sep-18	29	5.46	40%
Oct-18	23	3.57	100%
Nov-18	43	6.24	33%
Dec-18	47	6.70	75%
Total in 2018	301	4.27	83.9%

Source: prepared by JICA Expert based on data from CBA



Source: prepared by JICA Expert based on data from CBA

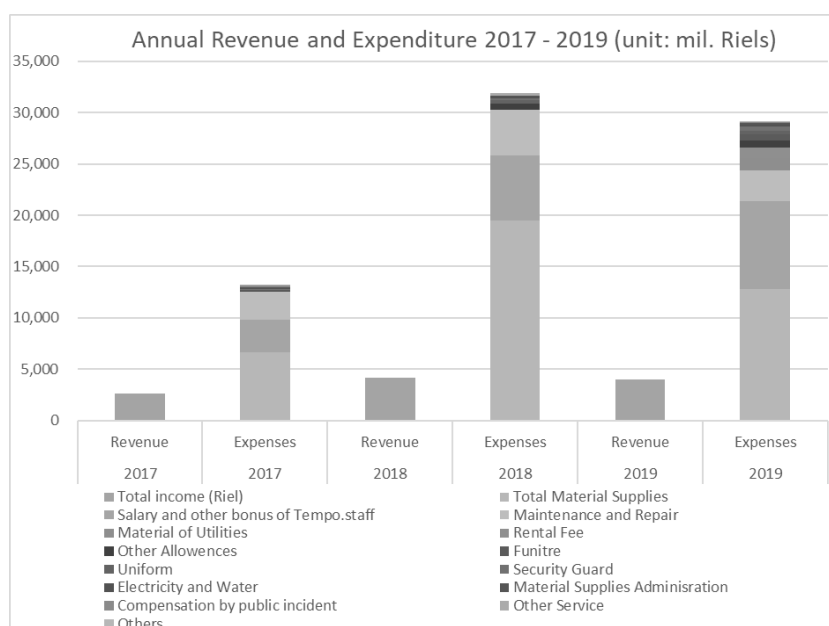
Figure 1.3.3(1) Number of Accidents (2017-2020)

1.3.4. Output 4: Improvement of Business Management Capacity of CBA

(1) Annual Revenue and Expenditure

The total expenditure has been significantly increased from 2017 to 2018 and 2019 due to the increase of the bus fleets and expansion of the network and service as well as relocation of the office to the new depot. As a result, the expenditure in 2018 reached 32 billion Riel/annum and around 60% of the expenditure is channeled for material supplies for the new office. In 2019, the amount for material supplies for the office significantly dropped but the expenditure for staff remuneration increases due to an increase in a number of staffs and the total expenditure reached at 29 billion Riel/annum.

On the other hand, the amount of revenue, mainly from fare collection, remained same in 2019 and reached at 4 billion Riel/annum and therefore, the CBA lost 25 billion Riel (6 million USD) in 2019.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (1) Annual Revenue and Expenditure (2017-2019)

(2) Summary of monthly revenue/expense in CBA

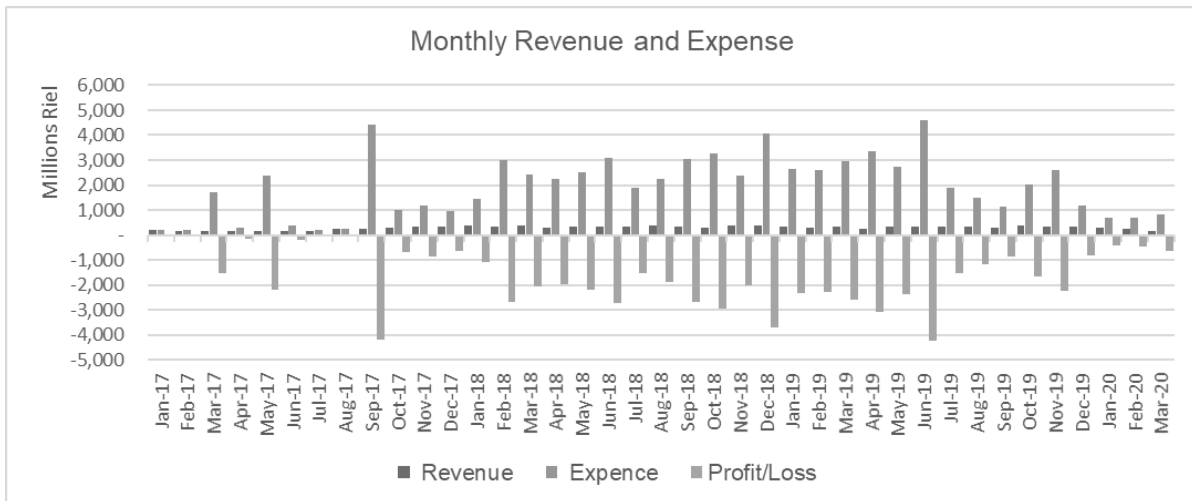
Table 1.3.4 (1) Monthly Revenue and Expense (2017-2020)

(mil.Riels)

Revenue & Cost 2017				Revenue & Cost 2018			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-17	184	211	-27	Jan-18	371	1,441	-1,070
Feb-17	166	195	-30	Feb-18	348	3,018	-2,670
Mar-17	182	1,721	-1,538	Mar-18	397	2,442	-2,045
Apr-17	143	289	-146	Apr-18	275	2,264	-1,989
May-17	175	2,387	-2,212	May-18	356	2,527	-2,171
Jun-17	165	376	-211	Jun-18	357	3,069	-2,712
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689
Oct-17	313	996	-683	Oct-18	300	3,262	-2,962
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712
Total 2017	2,638	13,171	-10,532	Total 2018	4,202	31,677	-27,474

Revenue & Cost 2019				Revenue & Cost 2020			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-19	347	2,662	-2,316	Jan-20	274	702	-428
Feb-19	309	2,599	-2,291	Feb-20	244	687	-444
Mar-19	358	2,940	-2,582	Mar-20	167	805	-638
Apr-19	247	3,334	-3,087	Apr-20	not available	not available	not available
May-19	324	2,713	-2,389	May-20	not available	not available	not available
Jun-19	359	4,583	-4,224	Jun-20	not available	not available	not available
Jul-19	354	1,872	-1,518	Jul-20	not available	not available	not available
Aug-19	338	1,505	-1,167	Aug-20	not available	not available	not available
Sep-19	285	1,156	-871	Sep-20	not available	not available	not available
Oct-19	364	2,043	-1,679	Oct-20	not available	not available	not available
Nov-19	336	2,580	-2,244	Nov-20	not available	not available	not available
Dec-19	340	1,174	-834	Dec-20	not available	not available	not available
Total 2019	3,960	29,162	-25,202	Total 2020	685	2,195	-1,509

Note: Expenditure data available up to March 2020 as of 8 January 2021.

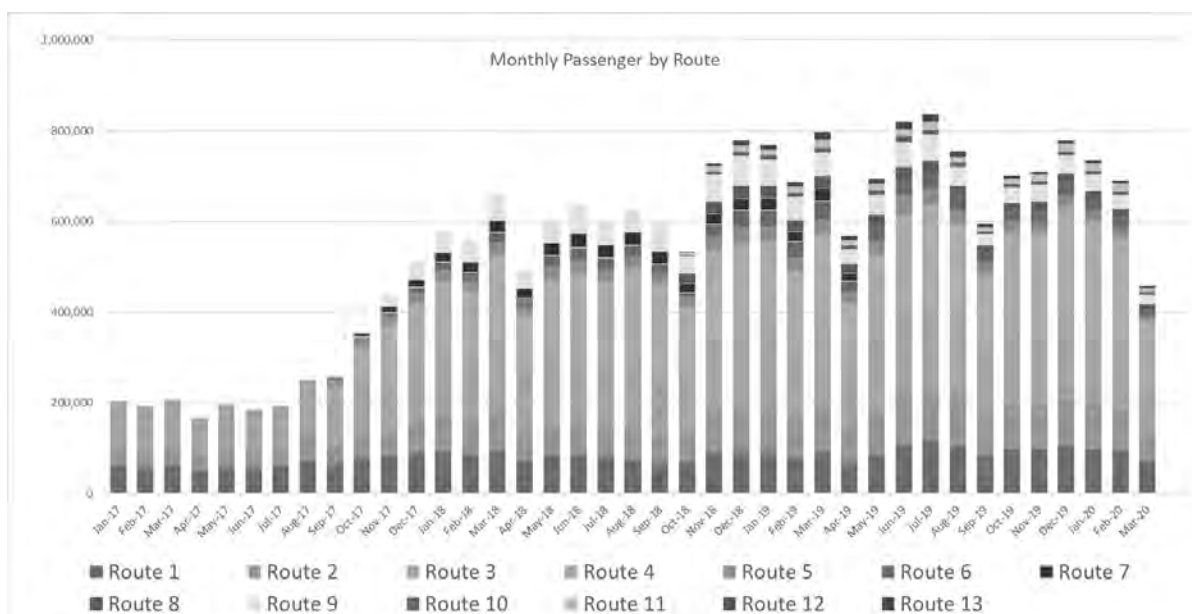


Source: prepared by JICA Expert based on data from CBA
 Note: data is available up to March 2020 as of 8 January 2021.

Figure 1.3.4 (2) Monthly Revenue and Expense 2017-2020

(3) No. of passengers by route

The Routes 1 to 4 run along the radial and trunk road network and collect more than 70% of the total passengers and this tendency remains same from when the CBA expanded the network from 8 to 13 routes. Due to restriction in social and economic activities and travel caused by the COVID-19 pandemic as well as the temporary termination of City bus service, the number of passengers significantly reduced in March 2020.

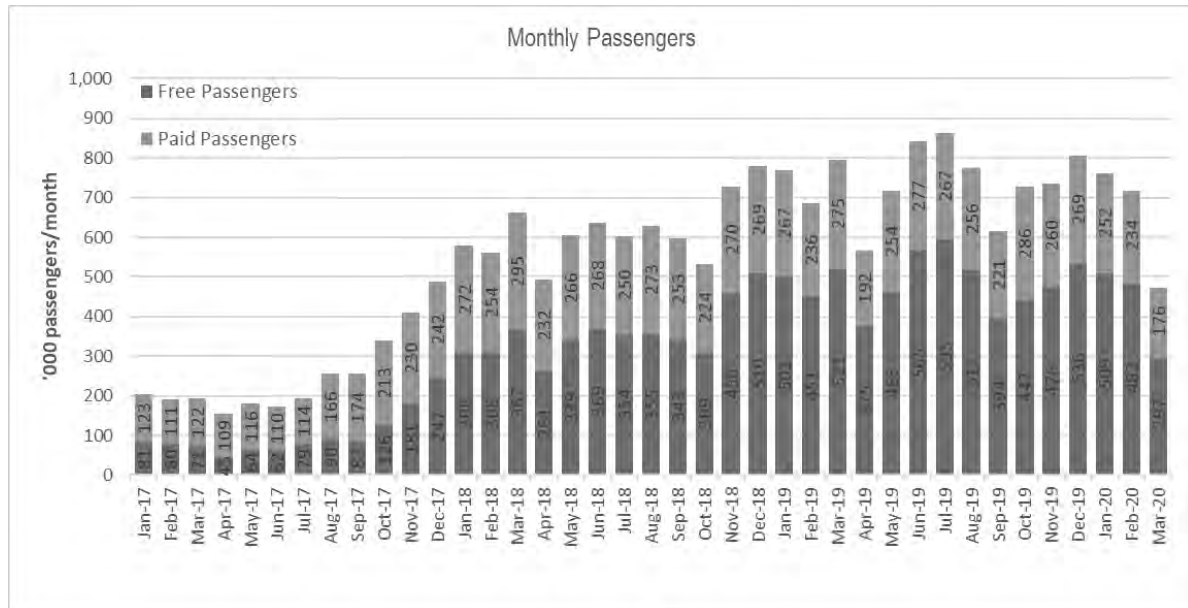


Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (3) Monthly Passengers by Routes 2017-2020

(4) No. of free/paid passenger

As PM announced free buses for factory workers in the public meeting in May 2017, the CBA has been providing free service for elderly people, students and factory workers. Though the number of paid passengers remains nearly same since the bus network was expanded from 3 lines to 8 line and from 8 lines to 13 lines, the number of free riders continue to increase and 65% of the bus users are free riders.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (4) Monthly Passenger by Type (Free/ Paid)

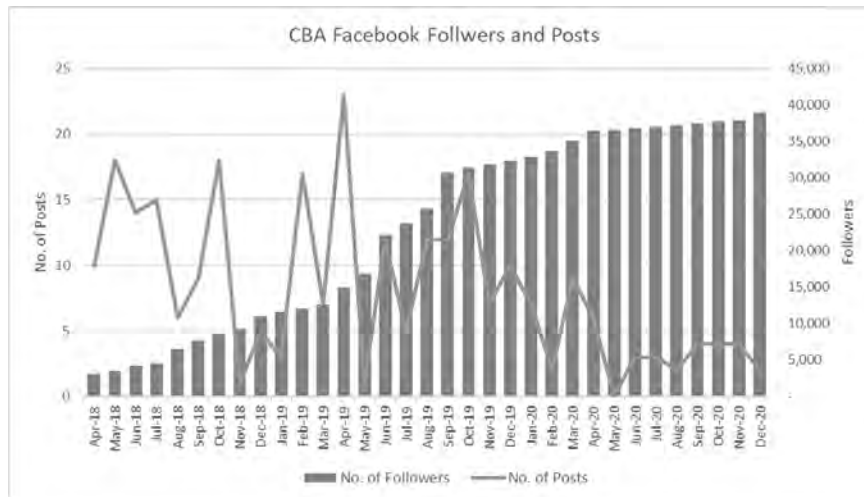
1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

(1) CBA's Facebook

CBA uses Facebook as part of its public relations activities to communicate with bus users and stakeholders. The CBA Facebook page has more than 39,000 followers and is rated 3.9⁽¹⁾ out of 5 as of January 2021.

Even after bus operation suspended in March 2020, CBA's Facebook regularly update and maintains the slight increase in the number of followers.

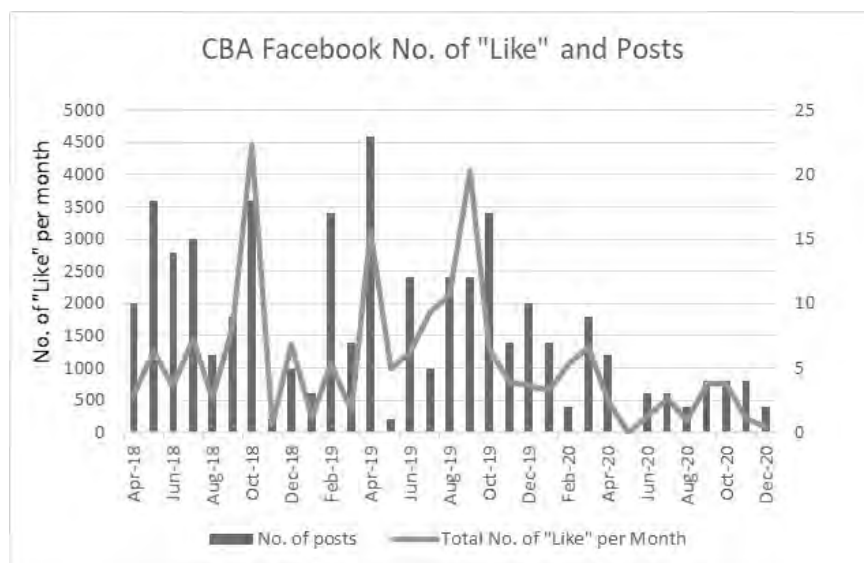
(1) The rating is based on how many people recommend or do not recommend the page



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.5 (1) No. of Followers and Posts

Many “Likes” are observed when CBA provided the special inter-regional shuttle bus service during the holidays of Khmer New Year (April) and Pchum Ben Days Sep/Oct). A number of “Likes” are also given to the useful and attractive information for the passengers such as “Bus Map” as well as “Female Drivers”.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.5 (2) No. of “Like” and Posts of CBA Facebook Page

Table 1.3.5 (1) List of Popular Posts in CBA Facebook Page

Date	Title	No. of Like
25 Sep. 2019	On the Pchum Ben Days, CBA is ready to transportation the peoples to homeland From 26 to 30 September 2019	1700
6 Jul. 2019	Currently, CBA has cooperated with JICA to train two female drivers	1600
9 Dec. 2018	Students are happy to ride CBA bus to/ from school safely	620

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11 Apr. 2019	Ready for transportation tomorrow, travel safely!	605
30 Oct. 2018	Bus Map of the 13 bus lanes of the CBA	589
6 Oct. 2018	Activities to transport people to provinces on October 06, 2018	570
4 Oct. 2020	All of CBA leader and staffs are are shocked to learn that Ms. Hay Sopheak, the lady driver was passed away	525
7 Aug. 2019	CBA shared the news from Khmer Time News on the first lady drive	505

Note: popular posts mean the post marks more than 500 “like” in CBA Facebook page as of 15 Jan. 2021

1.4. Achievement of Output

Due to COVID-19 pandemic, all CBA bus services have been suspended since 26th March 2020 and JICA Experts have been working remotely with the CBA counterparts to progress the project output and activities. Through both CBA and JICA Experts have been actively involved in accomplishment of COVID-19 countermeasures and preparation for restoration of City bus operation, these activities do not significantly contribute to making significant progresses to accomplish the project output and activities. The achievement level of each output is summarized below.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer’s level	66%	<ul style="list-style-type: none"> - A number of workshops/seminars conducted for CBA management and staffs - 1st study trip carried out in Malaysia and Singapore (Feb 2018) - 2nd study trip in Japan (Feb 2019) and network plan and operation scheme studied - 3rd study trip carried out in Vietnam and Singapore (Oct 2019) - CBA developed bus route/fleet deployment plan and implemented Phase 2 network and operation plan. - Capacity assessment survey conducted in June 2019
- Bus operation manual is developed	75%	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017 - Roster plan developed and tested in Line 9.

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		<ul style="list-style-type: none"> - Phase 1 network and operation practice reviewed - Bus network and operation plan (Phase 2) drafted and approved by PPCA Governor - Phase 2 (Line 1-13) implemented by Oct 2018 - Bus network reviewed and revised following suspension of Korean buses in Aug 2019 - In Sep 2020 and Dec 2020, the bus operation plan under COVID-19 pandemic was developed
<p>- Bus operation system/model is established</p>	<p>80%</p>	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - ICT-based Bus Operation and Management System (BOMS) developed by June 2019 and bus location system started official operation in July 2019 - BOMS has been tested and improved for several functions including timetabling, drivers roster planning, inspection and maintenance monitoring and planning.
<p>- Bus operation is reviewed and revised based on data collected</p>	<p>70%</p>	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9. - Phase 1 network and operation practice reviewed and Bus network and operation plan (Phase 2) developed and implemented - Phase 2 network and operation practice reviewed and bus operation plan revised and implemented, following suspension of Korean buses - Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster by Dec 2019 - Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A in Feb 2020 - Improvement of operational management analysis through BOMS in Feb 2020 - In Sep 2020 and Dec 2020, the bus operation plan (timetable and drivers roster plan) was inputted to BOMS

1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Objective verifiable indicator of Output 2	Achieved	Activities completed
- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level	50%	<ul style="list-style-type: none"> - Recruitment plan prepared and approved by PPCA - CBA recruited chief maintenance mechanics by April 2018 - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses - A number of workshops conducted for CBA management and staffs - A study trip carried out in Malaysia, Singapore, Vietnam and Japan (drivers/fleets management studied) - Capacity evaluation survey conducted in June 2019
- Bus vehicle maintenance manual is developed	75%	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates, prepared - A number of workshops conducted for CBA maintenance mechanics - Training video for bus inspection and maintenance prepared in Oct 2019 - Training video for heavy duty maintenance/repair works under preparation
- Bus inspection is routinely conducted, following maintenance manual	85%	<ul style="list-style-type: none"> - Bus operation and maintenance for Korean and Chinese bus reviewed - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA regularly carried out periodic inspection and maintenance for Chinese and Japanese buses - CBA also carried out maintenance for initial defects for Japanese buses - CBA started inspection and maintenance

		<p>for Chinese buses</p> <ul style="list-style-type: none"> - Improvement of fleet management analysis through BOMS by Feb 2020 - During suspension of the City bus operation caused by COVID-19 pandemic, all the Japanese and Chinese buses were inspected intensively. - Additional tools/equipment for inspection and maintenance possibly to be procured as part of enhancement capacity development plan through coordination with NPIC/JVC and/or COVID-19 countermeasure
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1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	70%	<ul style="list-style-type: none"> - Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management - Driver's operation manual developed by bus fleet suppliers - Training video for safety driving developed - A number of workshops conducted for CBA management and staffs - Improvement of driver's management system (based on scheduled bus and drivers roster) through BOMS in Feb 2020 - Bus driver manual under COVID-19 pandemic developed in Aug 2020 - Bus driver operation video under COVID-19 developed in Aug 2020
- Conductor work manual is developed	NA	NA
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	50%	<ul style="list-style-type: none"> - 16 AM/PM chief drivers involved in a series of workshops - A number of workshops conducted by chief drivers - Capacity assessment survey conducted in June 2019
- All drivers have completed the driver training and passed	80%	<ul style="list-style-type: none"> - Drivers driving record collected and analyzed

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training		<ul style="list-style-type: none"> - Drivers paper and practical tests were conducted during recruitment for Japanese buses - Only drivers who passed paper and practical tests employed by CBA - The CBA conducted Hygiene and Prevention training against COVID-19 in May 2020 - During suspension of City bus operation, the CBA conducted intensive training and driving test under the COVID-19 pandemic in Aug 2020
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	NA	NA
- All conductors have completed the conductor training and passed training	NA	NA
- Safety management system is developed	20%	<ul style="list-style-type: none"> - Traffic accident data collected and analyzed - System supplier for safety driving system surveyed to study a business model

1.4.4. Output 4: Improvement of Business Management Capacity of CBA

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	80%	<ul style="list-style-type: none"> - A number of workshops conducted for CBA management and staffs - CBA regularly prepared budget plan as well as revenue/cost reports - Capacity assessment survey conducted in June 2019
- Financial statements are prepared	80%	<ul style="list-style-type: none"> - Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement - CBA regularly prepared budget plan as well as revenue/cost reports
- Operation cost model and passenger database are developed	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus operation are assessed	60%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted in Aug 2017 - Needs in bus operation assessed

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		<ul style="list-style-type: none"> - Monitoring survey for bus and non-bus passenger conducted in May 2018 and May 2019 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider - CBA carried out dissemination workshops involving all Districts in Phnom Penh in June 2018 and June 2019
- Business plan is formulated and reflects on budget plan	40%	<ul style="list-style-type: none"> - Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared - CBA's new legislation drafted to upgrade to Public Administration Enterprise - PPCA assigned private advertisement company, initiated advertisement, wrapping Chinese/Korean buses and developed nearly 170 sheltered bus stops
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	<ul style="list-style-type: none"> - BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.
- Cashless ticketing system is developed	80%	<ul style="list-style-type: none"> - CBA introduced Wing's NFC card - CBA introduced ACLEDA's QR code - JICA introduced smart phone based ticketing system - Expert Team assists integration of bus location and e-payment system

1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level	30%	<ul style="list-style-type: none"> - A number of workshops conducted for CBA and DPWT - A study trip carried out in Malaysia and Singapore and in Japan bus priority measures studied - Capacity assessment survey conducted in June 2019 - A study trip carried out in Malaysia, Singapore, Vietnam and in Japan (improved efficiency in bus operation and

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<p>- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared</p>	<p>60%</p>	<p>business)</p> <ul style="list-style-type: none"> - Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed by JCC members - CBA submitted a concept plan as well as budget plan to PPCA - Action plan for priority measures and mobility management scheme prepared - A planning guidebook for mobility management drafted - JICA Expert Team and ADB consultant team coordinate to draft policy guide and planning toolkit which include public transport priority measures - The Project assists PPCA to implement Rapid Bus (bus dedicated lane) at 5km section of Line 4 and ADB to continue to expand it to entire Line 1-4 - Design standard and specification of the Bus dedicated/priority lane drafted and discussed with DPWT - Integrated public transport plan with e-bike drafted and pilot e-bike sharing at 11 designated bus terminals/stops approved by PPCA - Enhanced signal operation plan drafted and discussed with and approved by DPWT
<p>- Evaluation of the pilot projects and mobility management is conducted</p>	<p>0%</p>	<p>Nil</p>
<p>- Bus related facilities are developed</p>	<p>80%</p>	<ul style="list-style-type: none"> - Bus depot layout plan prepared and approved by PPCA - Construction of bus depot completed - Bus facilities (Bus stops/signs) for Phase 1 designed and installed - Bus facilities (Bus stops/signs) for Phase 2 designed and installed - PPCA assigned private advertisement company and developed nearly 170

		<p>sheltered bus stops</p> <ul style="list-style-type: none"> - A design guidebook for bus related facilities drafted - Private e-bike operator (Oyika) to test e-bike sharing as pilot project at 11 designated bus terminals/stops - PPCA set aside the budget for plot Bus lane project in 2020. However due to COVID-19 pandemic and excessive budgetary needs against it, this budget was postponed to 2021 - Router to be procured and alternative operation network to be installed to enhance the signal operation
- Bus information and location system is developed	80%	<ul style="list-style-type: none"> - Bidding documents for bus operation and management system completed - GPS installed in all City Buses and bus monitoring and management system developed - Training on bus monitoring and management system implemented

1.5. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	100%	<ul style="list-style-type: none"> - Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 lines by Nov 2017 - Phase 2 bus network and operation plan developed and approved by PPCA - Bus network increased from 8 lines to 13 lines
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	70%	<ul style="list-style-type: none"> - Bus service rate* improved from 67.5% in 2016 to 89.6% as of Mar 2018 - Bus service rate dropped 77.8% as of Dec 2018 and 69.4% as of May 2019 due to increased need for maintenance and traffic congestion - Bus service rate remains still low: 77.1% (Jan 2020) <p>Note: A number of reasons contribute to low service rate. First, the daily planned operation bus is estimated based on 4 round trips per bus, which is not practical</p>

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		<p>anymore after extension of the bus route. Secondly, the operation speed is getting lowered due to traffic congestion from 15.0 km/h as baseline in 2017 to 11.3 km/h as of Jan 2020. Thirdly, the rigid AM/PM shift of the driver reduces in-service ratio.</p> <ul style="list-style-type: none"> - Bus service ratio improved to 82.2%. <p>Note: this improved service ratio is considered to achieve by improved operation ratio by planned bus maintenance and improved operational speed due to the traffic impact caused by COVID-19 pandemic.</p>
<ul style="list-style-type: none"> - Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased 	80%	<ul style="list-style-type: none"> - Japanese buses (80 units) regularly inspected and initial and periodic maintenance carried out at the mileage - Chinese buses (98 units) also regularly inspected and maintained by CBA - During suspension of the City bus operation caused by COVID-19 pandemic, all the Japanese and Chinese buses were inspected and maintained intensively. - Initial defaults of Japanese buses such as peeling of the body paints and cracks in the exhaust pipes, were settled through the discussion with the suppliers and are being or have been fixed.
<ul style="list-style-type: none"> - The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. 	80%	<ul style="list-style-type: none"> - Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 2.01/100,000km (CBA drivers as first party) (5.50/100,000km in total) as of Oct - Dec 2018 - Traffic accident bus caused improved to 1.20/100,000km (CBA drivers as first party), 2.64/100,000km in total accident as of Jan – Apr 2019 - Traffic accident maintained at 1.17/100,000km (CBA drivers as first party), 3.66/100,000km in total accident in Jan – Dec 2019 - Traffic accidents maintain at 1.16/100,000km (CBA drivers as first party), 3.27/100,000km in total accident between Jan – Mar 2020
<ul style="list-style-type: none"> - Level of perception of the bus improves and customer satisfaction of bus users improves. 	80%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted and baseline collected to monitor the performance in May 2018 and May 2019 - Overall satisfaction of bus services level

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		<p>significantly improved from 2.81 (Overall service evaluated as Good) to 3.72 (as Excellent)</p> <ul style="list-style-type: none"> - Public comments delivered through Facebook and utilize for raise customer satisfaction level - Dissemination campaign for City Bus held in all Khans in 2018 and 2019 - During the suspension of City bus operation, the CBA continue to post the activities to share the public, including social service, PR videos and information, COVID-19 countermeasures and a series of trainings, and which contributes to maintaining the Facebook subscribers and number of Likes - Online survey was conducted in Nov 2020 and which implied public preference to the restoration of City bus operation at earliest timing.
<p>- Bus operation cost covered by the revenue in 2020.</p>	<p>13%</p>	<ul style="list-style-type: none"> - Bus revenue covers 20 % of bus operation cost between Jan and Sep 2017 - Bus revenue coverage against operation cost remains low: 13 % of total expenses in 2019 - Bus revenue coverage against operation cost improved to 31% between January and March 2020 (Too early to judge the improved financial condition due to fluctuation of the expenditure by month)
<p>- Average operation speed maintained at 15 km/h in 2020</p>	<p>80%</p>	<ul style="list-style-type: none"> - Average operation speed maintained at 14.1km/h between Jan-Oct 2018 - Average operation speed slightly dropped at 13.6km/h between Jan -May 2019. - Average operation speed records at 13.1 km/h in 2019 and tends to continue slowing down at 11.3 km/h in Jan 2020 - Due to the traffic impact caused by COVID-19 pandemic, average operation speed improves and records at 15.6 km/h in March 2020. Average operation speed between January and March 2020 is 13.3 km/h

1.6. Changes of Risks and Actions for Mitigation

Not applicable

1.7. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.8. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Project assisted to recruit female bus driver(s) and as of Nov 2019, one female driver in a regular bus service and another female driver already got license and started on road training. (Note that one female driver passed away in Nov 2020 and remaining one female driver at work)

1.10. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

The Expert Team was tasked by JICA HQ to conduct a cross country study on countermeasures against COVID-19 for local authority and public transport service providers and has prepared the deliverables including (i) Final Report and (ii) Leaflet to promote the public transport service during COVID-19 pandemic. These deliverables are attached in Annex 10.

2. Delay of Work Schedule and/or Problems (if any)

2.1. Delay of procurement and delivery of Japanese buses

2.1.1. Summary

Due to delayed procurement of Japanese buses (originally delivery of Japanese buses scheduled to be completed by Feb 2018, however, last and actual delivery was completed in Dec 2018), there is a risk that the major maintenance of Japanese bus scheduled every 120,000 km cannot be completed by the end of the Project (by Dec 2020).

2.1.2. Cause

Delayed procurement of Japanese buses

2.1.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Review and development of maintenance manual for the major defects/maintenance by Expert Team
- On-the-job training for major defects/maintenance by Expert Team
- Discussion for extension of the Project, including that on revised PDM/PO between Expert Team and CBA/PPCA
- Negotiation on contract addendum for extension of the Project between Expert Team and JICA

2.1.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for 3 months up to March 2021.

2.2. Suspension of City bus operation from March 2020

2.2.1. Summary

Due to the COVID-19 pandemic in Cambodia, the PPCA imposed a series of countermeasures to prevent COVID-19 infection among public and these countermeasures including suspension of City bus operation. The PPCA/CBA temporarily terminated the bus operation since 26th March 2020 and both CBA and JICA Experts have been facing difficulties to accomplish the pre-set project objectives and activities. There has been an unofficial discussion among PPCA and CBA implying that CBA would restart the City bus operation in March or April 2021 in consideration of expected low ridership due to persistent of public concern over the risk of COVID-19 infection and low revenue which increases the financial burden in time where saving of national budget is vital.

2.2.2. Cause

Suspension of City bus operation and budget constraints

2.2.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Development of operational plan under the several budget constraint scenarios
- Preparation of staff and passenger safety plan under COVID-19 pandemic (done)
- Procurement of tools/equipment to prevent infection of COVID-19 for staff and passenger (done)
- Preparation of driver operation manual during COVID-19 pandemic (done)

- Implementation of series of staff and driver training to prevent infection of COVID-19 (done)
- Preparation of PR materials to well inform the bus passengers with restart of the City bus operation (done)
- Dissemination campaign to the bus passengers who used to use the City bus

2.2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for additional 9 months up to Feb 2022.

2.3. Enhanced capacity for mechanics under collaboration with NPIC/JVC

2.3.1. Summary

There is on-going JICA project entitled 'Automotive Mechanic e-Learning Program' at NPIC (National Polytechnic Institute of Cambodia), aiming at materializing leaning materials, tools and facilities for the Automotive Mechanics students and hence improving the quality of the teaching program for the Mechanics. There is a growing demand derived from the said project that NPIC (and JVC Technical School and Workshop) would expand the current teaching program which limits to small automobile to include the program for large commercial vehicles such as trucks and buses. The concerned parties, including CBA/NPIC/JVC and JICA/Expert Team identified the CBA as the best venue to provide such training and which also benefits the CBA to improve sustainability of the mechanics training under collaboration with NPIC/JVC.

2.3.2. Cause

Lack of exit strategy to maintain the sustainability of the mechanics capacity building

2.3.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Design concept of collaboration among CBA, NPIC and JVC (done)
- Consensus building on the design concept among decision makers (done)
- Preparation of list of training tools and equipment for large commercial vehicles at CBA, NPIC and JVC
- Preparation of training curriculum for large commercial vehicles
- Procurement of training tools and equipment

- Operation and maintenance of those tools and equipment
- Provision of training courses for large commercial vehicles

2.3.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Under discussion with JICA HQ for variation order

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 9

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.9 (Term: Jan 2021 – Apr 2021)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 31 May 2021

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as ***Annex 5: Inputs provided***. The list of working conditions of equipment provided is also attached as ***Annex 6: Working Conditions of Equipment Provided***.

<Cambodian Side>

1. Counterpart personnel: Three (3) organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See ***Annex 5: Inputs provided***.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety

- 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management
 - 10) Mobility Management (1/2/3)
 - 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was completed in Feb/March 2018 in Malaysia and Singapore. The 2nd study trip was completed in Feb 2019 in Japan. The 3rd study trip was carried out from 6th to 11th October 2019 in Vietnam and Singapore. The 4th and final study trip to Japan was scheduled in May 2020, however due to the COVID-19 pandemic, it was postponed until further notice.
3. Machinery and equipment:
Bus Operation and Management System (BOMS), Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

Due to COVID-19 pandemic, all CBA bus services have been suspended since 26th March 2020. Though it is unofficial, there was once a discussion between PPCA and CBA to restart bus operation in Jan 2021. However, due to community based outbreak of COVID-19 occurred in Feb 2021 and full and partial lockdown in Phnom Penh, the schedule of restarting bus operation is still unknown which significantly and adversely impacts the implementation of planned project activities and delivery of expected project outcomes.

<Overall Project>

1. Preparation and submission of Draft Work Plan (*Jan 2017*)
2. Preparation and submission of Work Plan (*May 2017*)
3. Kick-off meeting (*8th Feb 2017*)
4. 1st JCC (*9th May 2017*)
5. 2nd JCC (*8th June 2018*)
6. 3rd JCC (*4th July 2019*)
7. Other significant progress (relating to external factors of the Project)
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)

- ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of mechanics (*occasionally*)
 - vi. Employment of drivers/office staffs (*occasionally*)
8. Other significant progress (COVID-19 countermeasures)
- i. Implementation of Hygiene and Prevention Training” for “Zero COVID-19 Infections from Bus Drivers and Passengers” (Apr 2020)
 - ii. Procurement of equipment for COVID-19 infection prevention measures
 - iii. Installation of equipment for infection prevention
 - iv. Sanitization for bus vehicles against COVID-19
 - v. COVID-19 measures for bus vehicles during operation
 - vi. COVID-19 campaign for bus users
 - vii. Social contribution using 11 CBA bus fleets (e.g., shuttle transport for international passengers, transport service for essential workers such as doctors and medical staffs)
 - viii. Online survey (PR for COVID-19 countermeasures, bus suspension and impact by COVID-19)
 - ix. Cross country study on countermeasures against COVID-19 for local authority and public transport service providers
 - x. Procurement of Smart Glass
 - xi. Installation of COVID-19 QR code in the bus
 - xii. Coordination with ADB (TA 9503-CAM: Supporting Sustainable Integrated Urban Public Transport Development) to develop MM materials for the promotion of bus ridership during the COVID-19 pandemic



Seminar on Zero COVID-19 Infections



Handover of equipments for infection prevention measures

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- Output 1 Bus operation capacity of CBA is improved
- Output 2 Maintenance and inspection capacity on bus vehicles of CBA is implemented
- Output 3 Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA
- Output 4 CBA's business management capacity is improved
- Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

List of Workshops/Technical Trainings (up to April 2021, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output related
1	20 Jan 2017	Half Day	Work Plan Outline	10	1
2	24 Feb 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	04 Mar 2017	Haft Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	05 Jul 2017	Half Day	GPS System	13	5
6	11 Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11 Jul 2017	Half Day	Bus Stop Design Gide	12	1
8	11 Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	06 Sept 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	08 Sept 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sept 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct 2017	Half Day	Matters agreed between CBA, Jica expert and CJEC	9	5
13	31 Oct 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	07 Nov 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov 2017	Half Day	Implement Bus Operation Management System	14	5
16	07 Dec 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec 2017	Half Day	Mobility Management	21	5
18	15 Dec 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec 2017	Half Day	3 rd Workshop for the management and the accounting	12	4
22	21 Dec 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ)	16	1
26	22 Feb 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb 2018	Half Day	Bus Driving Training (2)	16	3
28	27 Feb 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1
29	03 Mar 2018	Full Day	Training The Daily Shift Schedule to the driver for	34	1

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The Project for Improvement of Public Bus Operation in Phnom Penh

No.	Date	Duration	Title of Training	No. of participants	Output related
			Route 9: Borey Sontepheap2 to SEZ		
30	09 Mar 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	04 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	05 Jun 2018	Haft Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	06 Jun 2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5
40	07 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	07 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	07 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	5
43	20 Jun 2018	Haft Day	Bus Operation Training	15	3
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	05 Sep to 07 Oct 2018	33 Days	Bus driving training	No.1: 60, No.2: 60, No.3:40, No.4:40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	5
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
51	14 Dec 2018	Half Day	Progress Report	11	3
52	19 Dec 2018	Half Day	Safety Operation	10	3
53	19 Dec 2018	Half Day	Mobility Management Guideline	10	3
54	25 Nov-22 Dec 2018	22 Days	Chief Driver Training, New Driver Training and Mechanic Training	76	5
55	21 Jan 2019	Half Day	Fare Policy	13	4
56	31 Jan 2019	Half Day	Discussion on CBA's Condition and Registration Book	10	4
57	21 Mar 2019	Haft Day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	5
58	03 Jun 2019	Half Day	Dissemination Campaign at Khan Doun Penh	72	5
59	05 Jun 2019	Half Day	Dissemination Campaign at Khan Toul Kork	73	5
60	06 Jun 2019	Half Day	Dissemination Campaign at Khan Mean Chey	110	5
61	06 Jun 2019	Half Day	Dissemination Campaign at Khan Cham Kar Morn	97	5
62	07 Jun 2019	Half Day	Dissemination Campaign at Khan Chbar Ampov	92	5
63	10 Jun 2019	Half Day	Dissemination Campaign at Khan Dangkor	86	5
64	11 Jun 2019	Half Day	Dissemination Campaign Khan Por Sen Chey	114	5
65	13 Jun 2019	Half Day	Dissemination Campaign Khan 7 Makara	49	5
66	13 Jun 2019	Half Day	Dissemination Campaign Khan Sen Sok	52	5
67	14 Jun 2019	Half Day	Dissemination Campaign Khan Ressey Keo	90	5
68	20 Jun 2019	Half Day	Dissemination Campaign Khan Chhrouey Chang Va	46	5
69	21 Jun 2019	Half Day	Dissemination Campaign Khan Preak Phnov	104	5
70	02 Jul 2019	Half Day	Bus Scheduling improvement for CBA (Training)	25	1
71	05 Jul 2019	Half Day	Bus Maintenance, Explanation (Roll Call & Bus Schedule)	7	2
72	22 Jul 2019	Half Day	MM Action Plan Final, Concept Plan of Priority Measures Route Sele	9	5
73	22 Jul 2019	Half Day	4 th Management Workshop Financial Simulation and Cost Reduce	11	4
74	10 Jul 2019	Half Day	Roll Call Training	50	3
75	15-19 Jul 2019	5 Days	New Driver Training	18	3

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No.	Date	Duration	Title of Training	No. of participants	Output related
76	30 Jul 2019	Half Day	Driver Training Report, Promotion Video for Phnom Penh City Bus and The Progress of Bus Operation & Management System.	13	3
77	13 Aug 2019	Half Day	Bus Operation Plan and Deployment Plan	9	1
78	22 Aug 2019	Half Day	Scope of Pilot Bus Priority Measures	8	5
79	03 Oct 2019	Half Day	Rapid Bus Project 2019-2010	19	5
80	22 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108	5
81	24 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64	5
82	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89	5
83	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115	5
84	05 Nov 2019	Half day	Assembly Meeting (Utilization of Training video for drivers and mechanics)	Appx. 200 (All available staff of CBA)	2
85	07 Nov 2019	Half Day	Bus Maintenance	17	2
86	12 Dec 2019	Half Day	Project Monitoring Sheet and Progress of Bus Operation & Management System	21	4
87	12 Dec 2019	Half Day	E-Motorcycle sharing with City Bus	19	5
88	20 Dec 2019	Half Day	Preliminary Opinion Survey for Mobility Management	22	5
89	06 Jan 2020	Half Day	Summary of Activities of Finance and Management Area	11	4
90	20 Jan 2020	Half Day	Overview of JICA's bus Priority Pilot Project	15	5
91	07 Feb 2020	Half Day	Progress of Bus ICT	15	4
92	11 Mar 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane and Report of Parameter setting for Bus Priority signal control.	10	5
93	17 Mar 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane.	11	5
94	29 Apr 2020	Half Day	NO Corona Infections from CBA and Bus Users	13	1
95	08 May 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane	11	5
96	28 May 2020	Half Day	Zero Corona Infections from Bus Drivers and Passengers	10	2
97	27-28 May 2020	2 Days	Learning Seminar on Hygiene and Prevention against COVID-19	513	1
98	12 Jun 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane	6	5
99	30 Jun 2020	Half Day	Brief Progress Report to H.E Deputy Governor of PPCA	7	1
100	08 Jul 2020	Half Day	Tracking System for COVID-19 (PIBO)	7	1
101	22 Jul 2020	Half Day	Pandemic Bus Operation and Management Guide and Drivers COVID-19 Counter measures work content	11	3
102	05 Aug 2020	Half Day	Progress on E-bike Sharing	12	5
103	11 Aug 2020	Half Day	Bus vehicle maintenance expert	15	2
104	25 Aug 2020	Half Day	Progressive on E-bike sharing	8	5
105	26 Aug 2020	Half Day	Basic Approval on Installation of 4 Routers	7	4
106	26 Aug to 01 Sep 2020	5 days	Pandemic Bus Operational and Management Guide	465	3
107	02 Sep 2020	1 Day	Bus operation plan and deployment plan	7	1
108	25 Sep 2020	1 Day	Mobility Management "Remote Activity" Draft Plan + MOU	12	5
109	28 Sep 2020	1 Day	Pandemic Bus Operational and Management Guide	58	3
110	29 Sep 2020	1 Day	Preparation for the Reconstruction of the Public Bus	21	1
111	16 Oct 2020	Half Day	Improved sustainability of mechanics training-Coordination with NPIC and JVC	15	2
112	21 Jan 2021	Half Day	Presentation on New Business for E -tok tok and E Van	11	5
113	09 Feb 2021	Half Day	Bus Maintenance	13	2
114	24 Mar 2021	Half Day	Bus Maintenance	11	2
115	01 Apr 2021	Half Day	QR Cord Stop Covid 19	7	5
116	22 Apr 2021	Half Day	Router Installation for more redundant OFC NW	16	5
117	23 Feb 2021	Half Day	Bus operation plan and deployment plan with COVID-19 pandemic	2	1
118	NA	Half Day	Aiming for safe and reliable public transportation	2	5

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List of Online Meetings/Technical Trainings (up to Dec 2020, Order by date)

<For Output 2/3/4>

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
1	17 Jun 2020	Half day	Progress of maintenance work, Air ventilation test, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
2	09 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
3	16 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
4	21 Jul 2020	Half day	Driver training video, Mechanic training video, Progress of maintenance work	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
5	30 Jul 2020	Half day	Driver training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Mechanics training video, Improvement of BOMS	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
6	06 Aug 2020	Half day	Installation of COVID-19 tools/equipment, Driver training video, Monitoring initial defects, Mechanics training video, Improvement of BOMS	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
7	13 Aug 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
8	25 Aug 2020	Half day	Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
9	03 Sep 2020	Half day	Bus operation plan and deployment plan with COVID-19 pandemic, Driver training video, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
10	10 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
11	23 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
12	01 Oct 2020	Half day	Driver training video, Driver training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
13	08 Oct 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov

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No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
14	14 Oct 2020	Half day	Driver training video, Driver training, Bus inspectio , Installation of COVID-19 tools/equipment, Mechanics training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
15	22 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
16	28 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
17	05 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
18	12 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
19	19 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
20	25 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
21	03 Dec 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Improvement of bus services, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
22	10 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
23	16 Dec 2020	Half day	Improvement of bus services	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
24	25 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasure	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
25	06 Jan 2021	Half day	Improvement of bus services, Monitoring initial defects, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov

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No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
26	13 Jan 2021	Half day	Improvement of monitor and display board (Bus stops display on monitor), Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
27	20 Jan 2021	Half day	Improvement of bus services, Bus inspection, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
28	27 Jan 2021	Half day	KM9 terminal utilization plan, Parking space arrangement, Drivers training/ inspection for resume bus operation, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
29	03 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata
30	10 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Monitoring initial defects, Parking space arrangement, Drivers training/ inspection for resume bus operation, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Takahashi, Kov
31	18 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Monitoring initial defects, Parking space arrangement, Drivers training/ inspection for resume bus operation, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
32	25 Feb 2021	Half day	Improvement of bus services, Drivers training/ inspection for resume bus operation, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanic training video, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Kov
33	04 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Automobile repair and maintenance skills evaluation test, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
34	11 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Automobile repair and maintenance skills evaluation test, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
35	18 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Kov
36	25 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures, Bus maintenance manual	Mechanic section	Uzawa, Kov
37	01 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures, Bus maintenance manual	Mechanic section	Uzawa, Kov
38	08 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, Drivers training for resume bus operation, Bus maintenance manual	Mechanic section	Uzawa, Kov

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No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
39	22 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, Drivers training for resume bus operation, Bus maintenance manual	Mechanic section	Uzawa, Kov
40	28 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, English lesson for mechanics, Mechanic online training, Bus maintenance manual	Mechanic section	Uzawa, Kov

<For Output 5>

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
1	09 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (1)	Technical section	Takada
2	16 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (2)	Technical section	Takada
3	27 Jul 2020	Half day	Ideas for Facebook promotion and promotion videos, Preparation for bus information provision at major facilities	Technical section	Takada
4	04 Aug 2020	Half day	Example script and storyboard for "How-to" videos, Filming of the video, Destination introduction by CBA staff/ drivers	Technical section	Takada
5	11 Aug 2020	Half day	Sample format for bus stop information for major facilities (How to prepare and scale-up), Discussion on progress of the video making	Technical section	Takada
6	24 Aug 2020	Half day	Overview of Mobility Management Activity of PIBO Project, Promotion Campaign at Schools	Technical section	Takada
7	31 Aug 2020	Half day	Discussion on Bus Operation Information, Discussion on COVID-19 Video, Discussion on schedule and how to proceed, targeting bus operation from October	Technical section	Takada
8	07 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (1)	Technical section	Takada
9	15 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (2)	Technical section	Takada
10	25 Sep 2020	Half day	Overview of Mobility Management activities and progress, Items to confirm with regard to bus operation restarts, Activities for the future	Technical section	Takada
11	05 Oct 2020	Half day	Bus operation restart information (video, poster, banner, press release)	Technical section	Takada
12	19 Oct 2020	Half day	Online survey (How to conduct, How to utilize result) (1)	Technical section	Takada
13	10 Oct 2020	Half day	Online questionnaire survey on City Bus's COVID-19 measures	Technical section	Takada
14	05 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (2)	Technical section	Takada
15	16 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (3)	Technical section	Takada
16	30 Nov 2020	Half day	Online survey (How to increase the number of respondent, How to inform PPCA and motivate PPCA for early operation)	Technical section	Takada
17	28 Dec 2020	Half day	Summary of Mobility Management activities done in 2020, Way forward: Preparation for restart	Technical section	Takada
18	18 Jan 2021	Half day	Preparation for restart, Mobility management plan for 2021	Technical section	Takada
19	01 Feb 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions	Technical section	Takada
20	18 Feb 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section	Takada
21	09 Mar 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section	Takada
22	24 Mar	Half day	Mobility management: Progress on Short Stories Interview,	Technical	Takada

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No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
	2021		Responding to online questionnaire opinions, Bus Stop Design Contest	section	
23	06 Apr 2021	Half day	Mobility management: Comments on Short Stories Interview, Bus Sticker/ wrapping with support message	Technical section	Takada
24	27 Apr 2021	Half day	Mobility management: Short Stories Interview schedule confirmation, Discussion on PR material prepared by ADB project team	Technical section	Takada

< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (Sep 2018)
12. Stepwise implementation of Phase 2 (Line 1-13 start operation on 1st Oct 2018, 235 buses are in operation)
13. New bus depot operation (*starting in Feb 2019*) and completion of stepwise implementation of Phase 2 (*Feb 2019*)
14. Monitoring of Phase 2 operation plan (*On-going*)
15. Implementation of Capacity Assessment Survey (*June 2019*)
16. Review/revision of bus operation plan under non-Korean bus assumption (*July 2019*)
17. Confirmation of suspension of Korean buses operation and modification of bus operation plan (*Aug 2019*)
18. Stepwise implementation of revised Phase 2 (181 buses in operation)
19. Start operation of Bus Operation Management System (BOMS) (*July 2019*)

20. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster (Dec 2019)
21. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (Feb 2020)
22. Integration of scheduled bus and drivers roster in BOMS (Feb 2020)
23. Improvement of operational analysis (based on scheduled bus and drivers roster) through BOMS (Feb 2020)
24. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (Apr and May 2020)
25. Review and examination of bus route improvement under COVID-19 (Sep 2020, Dec 2020)
26. Preparation of bus operation plan/bus fleet deployment plan to resume bus service towards Post COVID-19 pandemic (Sep 2020, Dec 2020, pending until bus operation resumes)
27. Timetable improvement to resume bus service under COVID-19 (Sep 2020, Dec 2020, pending until bus operation resumes)
28. Improvement of BOMS and development of timetable database (Sep 2020, Dec 2020, pending until bus operation resumes)
29. Bus operation plan and deployment plan under COVID-19 pandemic (Feb 2021)
30. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 7: Meeting/Workshop Materials**)



Screenshot of Bus Operation and Management System (BOMS)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (Feb – Mar 2017)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus

terminals

2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
10. Recruitment of Chief Mechanic (*April 2018*)
11. Recruitment of 18 Mechanics (*by May 2018*)
12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan's Grant Aid)
13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
15. Implementation of periodical inspection and maintenance (5,000km initial inspection and oil change) (*Sep 2018 – onward*)
16. New bus depot operation (*from Feb 2019*) and set-up of inspection and maintenance office/storage
17. Implementation of Capacity Assessment Survey (*June 2019*)
18. Development of training video for bus inspection and maintenance (*Oct 2019*)
19. Dissemination of training video and training for bus inspection and maintenance (*Nov 2019*)
20. Integration of fleet management system into BOMS (*Jan 2020*)
21. Improvement of fleet management analysis through BOMS (*Feb 2020*)
22. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (*Apr and May 2020*)
23. Online monitoring of inspection and maintenance works (*May 2020 – onward*)
24. Development of database on regular inspection and maintenance records (*May 2020 – onward*)
25. Improvement of BOMS and development of inspection and maintenance database (*May 2020 – onward*)
26. Development of mechanic staff training video under COVID-19 pandemic (*May 2020 – onward*)

27. Discussion on enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures (Oct 2020 – onward)
28. Preparation of procurement of maintenance tools and equipment for collaboration with NPIC and COVID-19 countermeasures (Dec 2020 – onward)
29. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers
 - 3) On-board survey on drivers/conductors and driving skills
 - 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (*Sep 2017*)
3. Study of safety management system and drivers/conductors training in Japan (*July 2017*)
4. Participate in intensive training course organized by Eagle Bus Corp. (*Nov 2017*)
5. Recruitment/training to drivers for 98 Chinese buses (*Aug – Nov 2017*)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (*Nov 2017*)
7. Monitoring on accidents of bus (*Sep 2017 onward*)
8. Preparation of Safety Driving Manual and training on safety driving (*Feb 2018*)
9. Preparation of Driver’s training material (*Aug 2018*) (under cooperation with the supplier under Japan’s Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (*May to Oct 2018*)
11. Deployment of driver and fleet for Phase 2 operation plan (*Sep 2018*)
12. Intensive training for selected reckless drivers (*Dec 2018*)
13. Recruitment/training for female driver(s) (*on-going*)
14. Implementation of Capacity Assessment Survey (*June 2019*)
15. Revision of drivers’ assignment schedule, following revised operation plan (*Aug 2019*)
16. Retirement recommendation and negotiation for reckless drivers (*Sep - Oct 2019*)
17. Development of training video for safety driving (*Nov 2019*)
18. Dissemination of training video and training for safety driving (*Nov 2019*)
19. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers’ roster (*Dec 2019*)
20. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line

5A (Feb 2020)

21. Improvement of driver's management system (based on scheduled bus and drivers roster) through BOMS (*Suspended due to temporary termination of City bus operation*)
22. Procurement of Alcohol Detector (*Ditto*)
23. Monitoring of fleet and driver deployment plan and operation (*Ditto*)
24. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (Apr and May 2020)
25. Seminar on Hygiene and Prevention against COVID-19 (May 2020)
26. Development of drivers and staffs training video under COVID-19 pandemic (August 2020)
27. Training for Pandemic Bus Operational and Management Guide (Aug 2020)
28. Procurement of tools and equipment for COVID-19 countermeasures including Hypochlorous acid water generator (Sep 2020)
29. Handover ceremony of tools and equipment for COVID-19 countermeasures (Sep 2020)
30. Installation of driver's protection shield (completed in Nov 2020)
31. Development of time table and driver's roster database under COVID-19 (Sep 2020, Dec 2020, pending until bus operation resumes)
32. Improvement of BOMS and development of driver's roster database (Sep 2020, Dec 2020, pending until bus operation resumes)
33. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 4 "Improvement of Business Management Capacity of CBA"** are undergoing.

1. Baseline survey (*Sep and Dec 2017*)
 - 1) Data collection of CBA's financial statement
 - 2) Data collection of PPCA's financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA's accounting office
 - 5) Input data collection for BOM model
2. Bus business management (*Sep 2017 to onward*):
 - 1) Data analysis of CBA and PPCA's financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss
 - 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination on business plan of company bus
 - 6) Preliminary study on fare policy and subsidy policy

- 7) Draft decree for fare and subsidy structure
- 8) Study and refine of BOM model
3. ICT-based management (*May 2017 to onward*):
 - 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (*Nov 2017 – Mar 2018*)
 - 4) Procurement of ICT equipment (Phase 1: GPS and Server) (*Sep 2018*)
 - 5) Procurement of AEON mobile payment system (*Sep 2018*)
 - 6) Official launching ceremony for Bus Location System (*July 2019*)
 - 7) Procurement of ICT equipment/software (Phase 2: Bus Operation Management System: BOMS) (*Dec 2018 – ongoing*)
 - 8) Assistance to integration of bus location system and e-payment system (*Nov 2019*)
 - 9) Improvement of BOMS, including development of KPI, design of Dashboard and reporting system (pending until bus operation resumes)
 - 10) Support CBA to register on Google as public transport operator (registered in July 2020)
 - 11) Update information of bus stop location (May 2020, Nov 2020, Feb 2021)
 - 12) Preparation of system design for Google based bus location system (June 2020 onward, pending until bus operation resumes)
 - 13) Support to develop GTFS data and submit data to Google (Bus facility and operation data) (May 2020 onward, pending until bus operation resumes)
4. Strengthening of City Bus Authority (*May 2018 to onward*):
 - 1) Official request to upgrade the Authority to Public Enterprise by MEF (*May 2018*)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (*Oct 2018*)
 - 3) Draft legislation for upgrading Public Administration Enterprise (*Jan 2019*)
 - 4) Implementation of Capacity Assessment Survey (June 2019)
5. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (*July and Aug 2017*)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (*July 2017*)

3. Review of 2014 Urban Transport Master Plan (*July 2017*)
4. Preparation of a concept plan of public transport priority measures (*July 2017*)
5. Preparation of a concept mobility management plan (*Dec 2017*)
6. Preparation of bus depot layout plan (*May – Aug 2017*)
7. Approval of bus depot design by Governor (*Dec 2017*)
8. Preparation of bus color design (*Dec 2017*)
9. Technical advice on bus depot design (*Jan - Feb 2018*)
10. Examination and discussion on Public transport priority measures (*Jan - Feb 2018*)
11. Implementation plan on mobility management workshop (*Mar 2018*)
12. Implementation plan on public transport priority measures (*Mar 2018*)
13. Implementation of series of dissemination campaign (*May – June 2018*)
14. Monitoring of bus depot development (*Aug 2018 – Jan 2019*)
15. Monitoring of bus facility development (*Aug 2018 – Jan 2019*)
16. Preparation of Design Guides (*Dec 2017 – onward*)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development) (*Nov 2018 – onward*)
18. Implementation of bus user/ non-bus user survey (*May 2019*)
19. Action plan on mobility management (*On-going*)
 - i. Bus map review and revision (*Feb 2019*)
 - ii. Monitoring bus facilities condition (*Feb 2019 – onward*)
 - iii. Preparation of mobility management action plan (*Feb 2019 – onward*)
 - iv. Provision of bus trial/special shuttle service as part of bus dissemination campaign (e.g., Tanabata Festival, Japan Movie Festival, Japan Scholarship Event) (*Feb 2019 – onward*)
 - v. Coordination with Tsukuba Univ for mobility management (*Sep 2019 – onward*)
 - vi. Mobility Management Survey with Tsukuba Univ (*Dec 2019*)
 - vii. Preparation of dissemination campaign for school (*Jan 2020*)
 - viii. Preparation of test user and dissemination campaign for the pilot project (*Jan 2020*)
 - ix. Bus map review and revision (*Jan 2020*)
 - x. Revision of mobility management plan as part of COVID-19 countermeasures (*July 2020*)
 - xi. Preparation of public announcement materials for restoration of City bus (*July to Sep 2020*)

- xii. Development of PR videos for COVID-19 countermeasures as well as restoration of City bus (July to Nov 2020)
 - xiii. Online public opinion survey (Nov 2020)
 - xiv. Development of PR material (Human story video) as COVID-19 countermeasures (Jan 2021)
 - xv. Development of PR material (Aiming for safe and reliable public transportation) in Khmer (April 2021)
 - xvi. Development of PR material to promote bus ridership during COVID-19 pandemic in collaboration with ADB (May 2021)
- 20.** Action plan on public transport priority measures (*On-going*)
- i. Coordination meeting with a traffic control supplier on PTPS (*April 2019*)
 - ii. Set-up WG (Working Group) for Pilot Project (*July 2019*)
 - iii. Organize a series of WGs (*July 2019 – onwards*)
 - iv. Planning action plan on bus priority measures and Pilot Project (*July 2019*)
 - v. Approval of contents and scheduled of Pilot Project by Governor of PPCA (*July 2019*)
 - vi. Planning stakeholder management plan for Pilot Project (*Sep 2019*)
 - vii. Organize a dissemination campaign for Pilot Project at 4 Khans (*Oct 2019*)
 - viii. Preparation of concept design of the Rapid Bus (*Jan 2020*)
 - ix. Preparation of the pilot Bus Priority Signal (*Jan 2020*)
 - x. Preparation of the pilot e-Bike Sharing (Suspended due to temporary termination of City bus operation)
 - xi. Implementation of dissemination campaign for pilot projects (Suspended due to temporary termination of City bus operation)
 - xii. Preparation of design standard for bus priority lane (March to July 2020)
 - xiii. Examination of BOQ and cost estimate for bus priority lane (July 2020)
 - xiv. Preparation of enhanced signal operation plan (May 2020)
 - xv. Procurement of router for enhanced operational network (March 2021 – onward)
 - xvi. Development of Smart Bus Shelter in collaboration with “SMART JUMP” by MLIT (Jan 2021 – onward)
- 21.** Implementation of Capacity Assessment Survey (*June 2019*)
- 22.** Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 7: Meeting/Workshop Materials**)



Screenshot of Mobile Application for bus location System

1.3. Monitoring Indicators

The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured from next section.

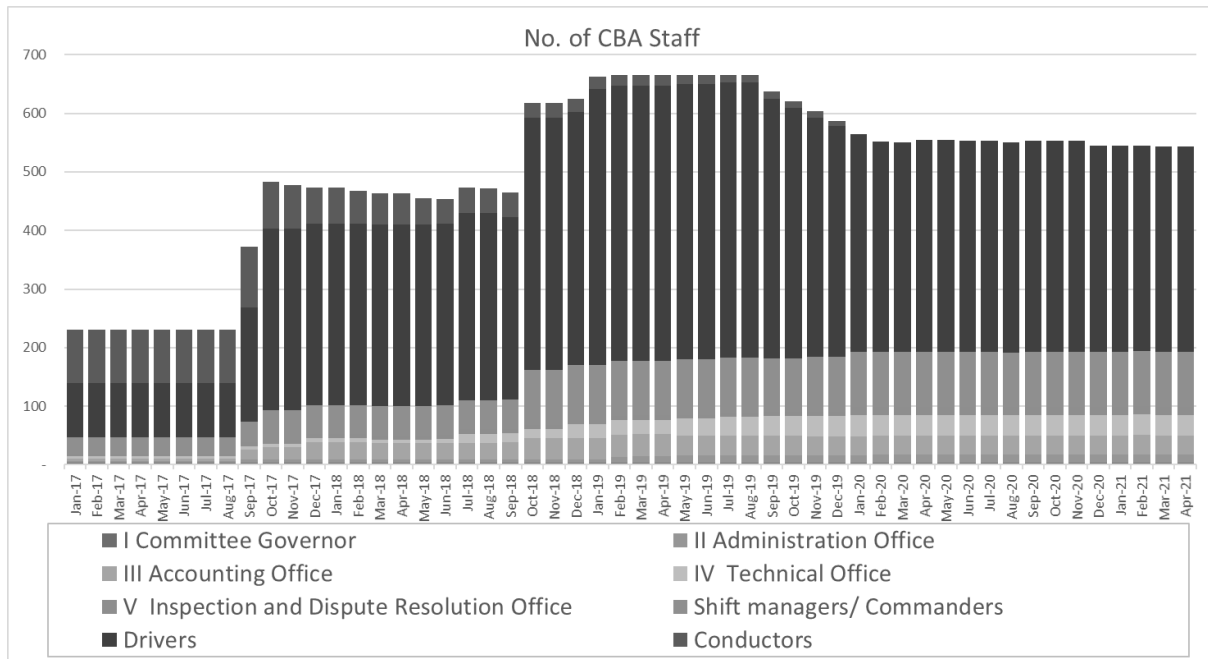
1.3.1. Output 1: Improvement of Bus Operation Capacity of CBA

(1) No. of CBA staff by section

As of April 2021, the total number of employees of CBA is 544, including 351 bus drivers. Although the bus operation has been suspended since March 2020, the PPCA is making the best effort to maintain to hire the drivers/staffs in order for a smooth restoration of the bus operation in future.

The number of drivers has been decreased since August 2019, due to the demolition of 54 second-hand Korean buses and accordingly, CBA optimized the number of drivers/conductors. The CBA has been reducing the number of conductors and by January 2020 all the conductors are either dismissed or transferred to other sections in CBA.

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1(1) Number of CBA Staff

Table 1.3.1 (1) Number of CBA Staff by Section

	Committee Governor	Administration Office	Accounting Office	Technical Office	Inspection and Dispute Resolution Office	Shift managers/Commanders	Drivers	Conductors	Total
Jan-19	3	6	37	24	6	95	470	22	663
Feb-19	3	10	38	25	6	95	470	18	665
Mar-19	3	11	38	25	6	95	469	18	665
Apr-19	3	11	38	25	6	95	469	18	665
May-19	3	13	34	29	6	95	470	16	666
Jun-19	3	13	34	29	6	95	470	15	665
Jul-19	3	13	34	32	6	95	470	13	666
	Committee Governor	Administration Office	Accounting Office	Technical Office	Inspection and Dispute Resolution Office	Shift managers/Commanders	Drivers	Conductors	Total
Aug-19	3	13	34	32	6	95	470	12	665
Sep-19	3	13	34	33	6	92	444	12	637
Oct-19	3	13	34	33	6	92	428	12	621
Nov-19	3	13	33	34	6	95	409	11	604
Dec-19	3	13	33	34	6	95	395	8	587
Jan-20	3	13	33	36	13	95	372	0	565
Feb-20	3	14	33	35	13	95	359	0	552
Mar-20	3	14	33	35	13	95	358	0	551
Apr-20	3	14	33	35	13	95	361	0	554
May-20	3	14	33	35	13	95	361	0	554
Jun-20	3	14	33	35	13	95	360	0	553
Jul-20	3	14	33	35	13	95	360	0	553
Aug-20	3	14	33	35	13	93	360	0	551
Sep-20	3	14	33	35	13	95	360	0	553
Oct-20	3	14	33	35	13	95	360	0	553
Nov-20	3	14	33	35	13	95	360	0	553
Dec-20	3	14	33	35	13	95	352	0	545
Jan-21	3	14	33	35	13	95	352	0	545
Feb-21	3	15	33	35	13	95	351	0	545
Mar-21	3	15	32	35	13	95	351	0	544
Apr-21	3	15	32	35	13	95	351	0	544

Source: prepared by JICA Expert based on data from CBA

(2) No of bus lines and fleets

The number of bus routes operated by CBA was 3 at the beginning of the project. Since then, the bus route has been steadily expanded to 5 routes in September 2017, 8 routes in November 2017, and 13 routes in October 2018. The number of buses owned by CBA was once 57 Korean buses at the beginning of the project. Since then, the number of buses has increased to 235 in March 2019, including 98 Chinese buses and 80 Japanese buses. In September 2019, CBA decided to suspend the use of 54 second-hand Korean buses, due to the high operation and maintenance cost of these Korean buses and CBA owns 181 buses as of December 2020 (Note that around 10 buses are used for essential workers and needs for COVID-19 and which are excluded from the below figure).

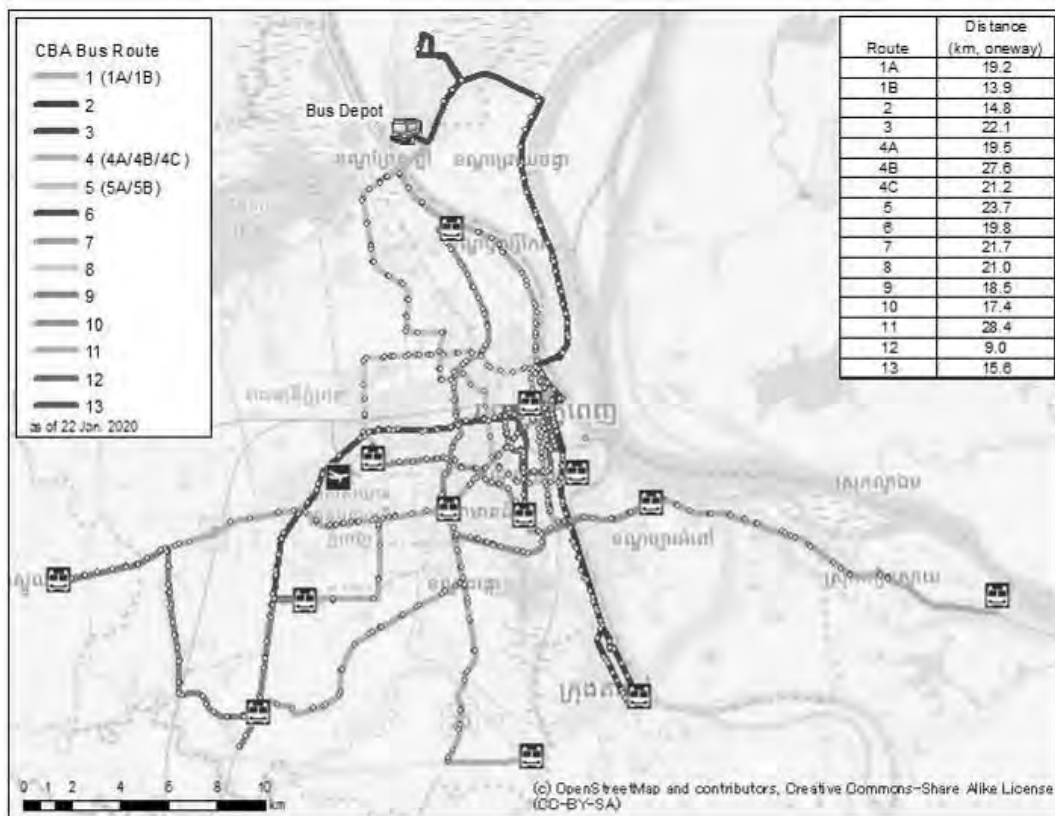
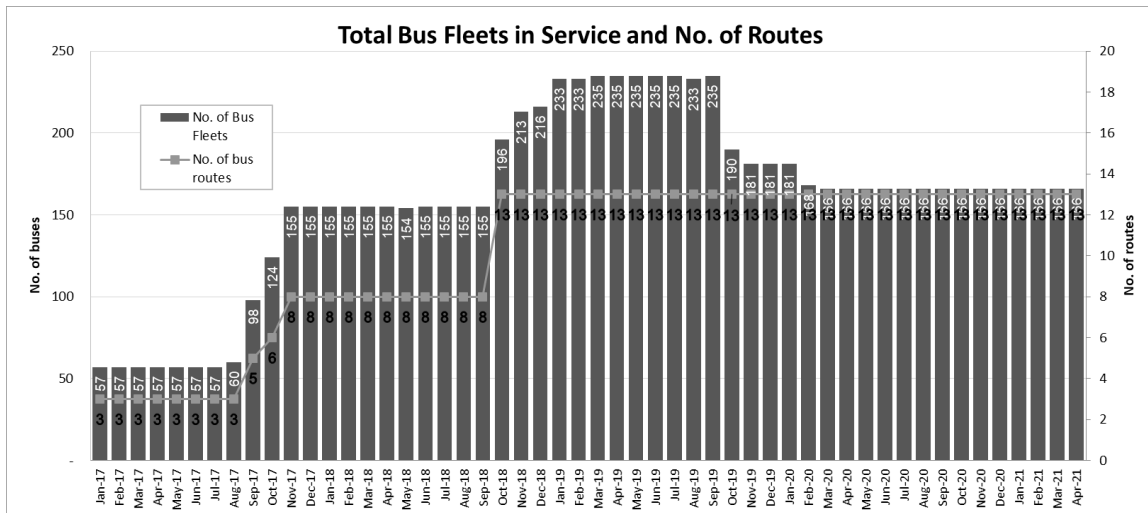


Figure 1.3.1 (2) CBA Bus Operation Route 2020



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1 (3) Number of CBA Buses and Routes

(3) Summary of bus operation service level

The missed trip rate has significantly improved from an average of 30% in 2019 to below 20% in January to March 2020. The main contributor to this improved missed trip rate is the planned repair and maintenance (which increases operational rate of the bus fleets) as discussed in the next section.

Table 1.3.1 (2) Bus Service Level (2018-2020)

Year 2020

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-20	13	181	588	480.0	18.4%	18,105	543,162	11.3
Feb-20	13	168	662	556.5	15.9%	21,602	648,060	12.9
Mar-20	13	166	644	529.0	17.8%	20,471	614,136	15.6
Apr-20	13	-	-	-	-	-	-	-
May-20	13	-	-	-	-	-	-	-
Jun-20	13	-	-	-	-	-	-	-
Jul-20	13	-	-	-	-	-	-	-
Aug-20	13	-	-	-	-	-	-	-
Sep-20	13	-	-	-	-	-	-	-
Oct-20	13	-	-	-	-	-	-	-
Nov-20	13	-	-	-	-	-	-	-
Dec-20	13	-	-	-	-	-	-	-
Total in 2020	13	-	631	522	17.3%	20,060	1,805,358	13.3

Source: prepared by JICA Expert based on data from CBA

PM Form 3-1 Monitoring Sheet Summary
The Project for Improvement of Public Bus Operation in Phnom Penh

Year 2019

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-19	13	233	839	652.5	22.2%	25,272	758,163	13.7
Feb-19	13	233	870	675.0	22.4%	25,681	770,418	13.7
Mar-19	13	235	889	672.5	24.3%	25,907	777,198	13.8
Apr-19	13	235	853	604.5	29.1%	23,167	695,001	13.7
May-19	13	235	902	626.0	30.6%	23,849	715,464	13.0
Jun-19	13	235	878	605.5	31.0%	22,878	686,337	13.3
Jul-19	13	235	860	573.5	33.3%	21,961	658,839	12.0
Aug-19	13	233	865	524.0	39.4%	19,750	592,488	10.8
Sep-19	13	235	867	519.0	40.1%	20,033	600,993	11.2
Oct-19	13	190	717	452.0	37.0%	16,644	499,326	11.9
Nov-19	13	181	644	482.4	28.0%	17,243	517,293	14.6
Dec-19	13	181	664	500.5	24.6%	18,804	564,123	15.5
Total in 2019	13	181	820	574	30.0%	21,766	7,835,643	13.1

Source: prepared by JICA Expert based on data from CBA and BOMS

Year 2018

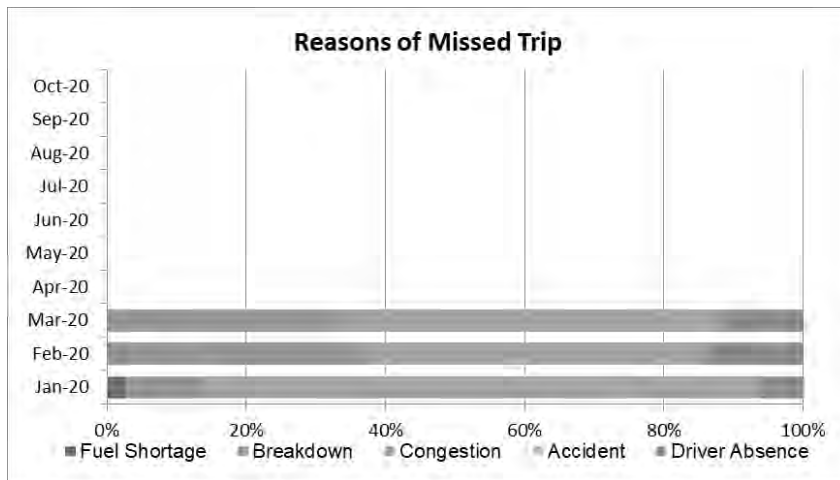
Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	7044717	14.1

Source: prepared by JICA Expert based on data from CBA

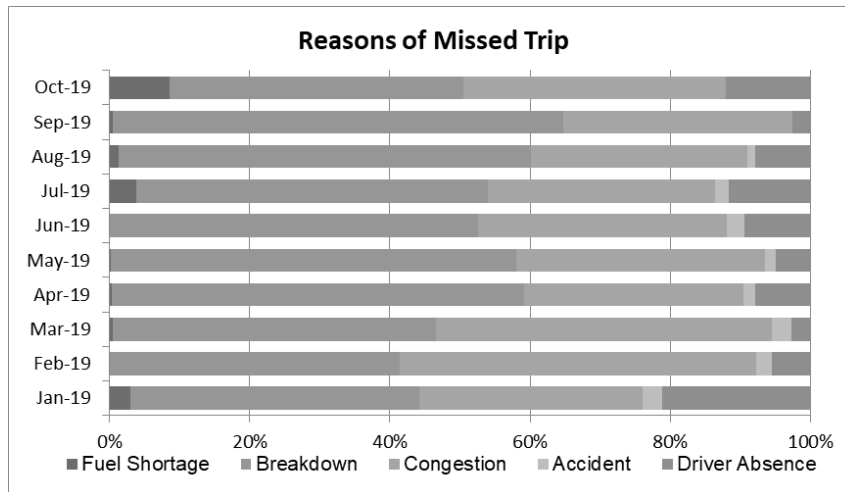
(4) Reasons of missed trip

The most common reason for missed trips in 2020 recorded by traffic congestion, followed by bus breakdowns/repairs and 80% of missed trips caused by these two reasons. The bus breakdowns/repairs are the top reason for missed trip since the project started and improved and/or planned inspection and maintenance may contribute to reducing the missed trip in 2020.

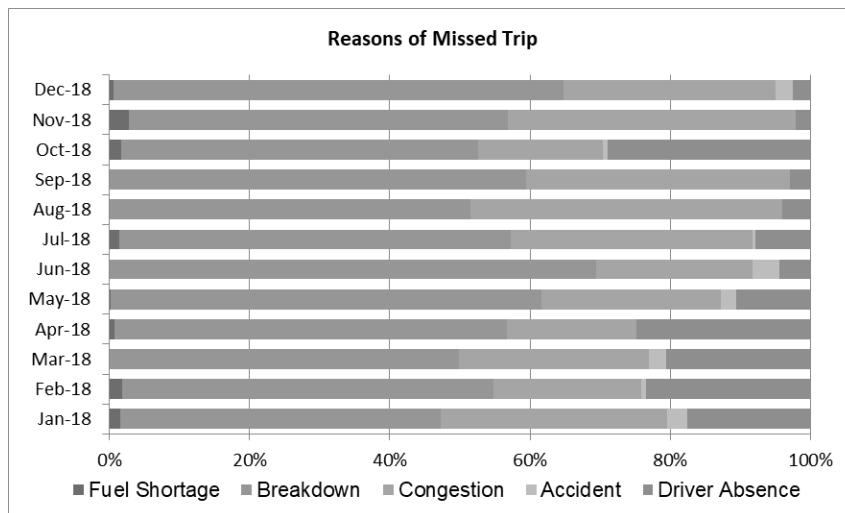
Year 2020



Year 2019



Year 2018



Source: prepared by JICA Expert based on data from CBA

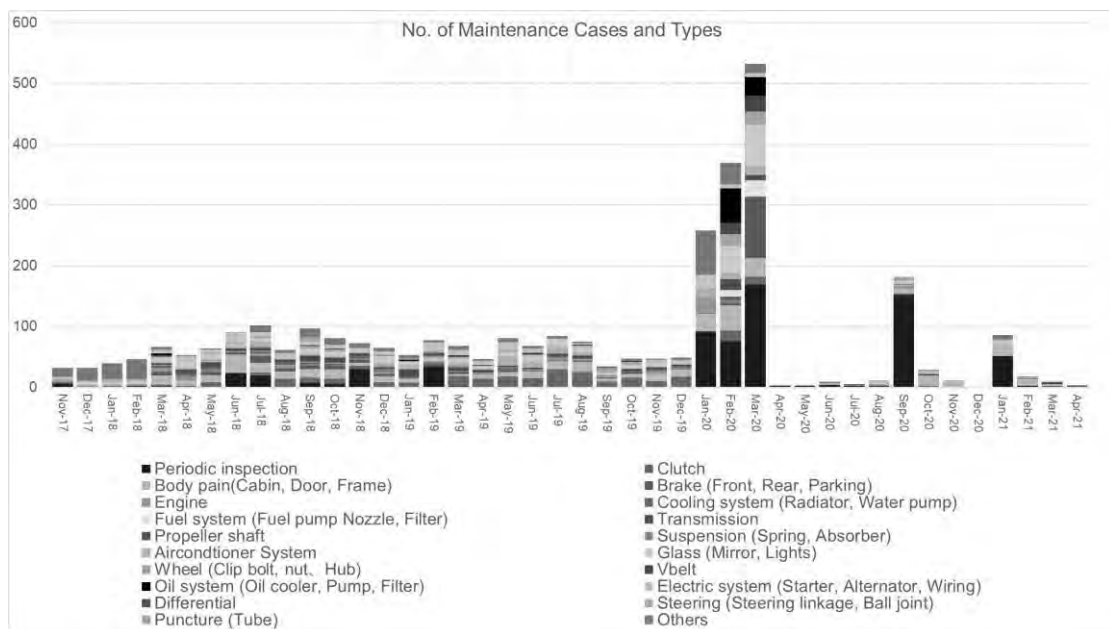
Figure 1.3.1(4) Reason of Missed Trip (2018-2020)

1.3.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

(1) No. of maintenance cases and types

There has been a significant increase in the number of cases both inspection and maintenance since January 2020. As a result, as observed in the previous section, the number of missed trips due to the breakdown of the bus in operation has decreased significantly.

From January to March 2020, the number of inspections increased significantly due to the periodic inspections required when the mileage reaches 100,000 kilometers. The number of inspections increased in September 2020 as well as January 2021, since the CBA planned to resume bus service in October 2020 and March 2021, respectively.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.2(1) Number of Maintenance Cases and Maintenance Type (2017-2020)

1.3.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

There has been a significant improvement in the driving skills and traffic safety since the project started and the number of accidents caused by the drivers dropped drastically from 2018 to 2019. The accident record obtained from CBA implies the drivers maintained the safety of their driving at low rate of the accident cases caused by the drivers.

Table 1.3.3(1) Summary of Accident Statistics (2018-2020)

Traffic Accident				Traffic Accident			
Month	Occurance	Accident rate (all)	CBA driver's mistake	Month	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)		(cases)	(cases/100,000km)	(% of cases)
Jan-20	25	4.60	40.0%	Jan-19	30	3.96	50.0%
Feb-20	23	3.55	26.1%	Feb-19	21	2.73	28.6%
Mar-20	11	1.79	45.5%	Mar-19	23	2.96	30.4%
Total in 2020	59	3.27	37.2%	Apr-19	24	3.45	29.2%
				May-19	18	2.52	16.7%
				Jun-19	18	2.62	27.8%
				Jul-19	24	3.64	41.7%
				Aug-19	23	3.88	34.8%
				Sep-19	18	3.00	27.8%
				Oct-19	28	5.61	25.0%
				Nov-19	33	6.38	30.3%
				Dec-19	27	4.79	25.9%
				Total in 2019	287	3.66	30.7%

Traffic Accident			
Month	Occurance	Accident rate	CBA driver's mistake
	(cases)	ases/100,000k	(% of cases)
Jan-18	17	3.11	-
Feb-18	19	3.37	100%
Mar-18	21	3.70	100%
Apr-18	17	3.03	100%
May-18	16	2.84	100%
Jun-18	23	4.24	100%
Jul-18	25	4.54	75%
Aug-18	21	3.60	100%
Sep-18	29	5.46	40%
Oct-18	23	3.57	100%
Nov-18	43	6.24	33%
Dec-18	47	6.70	75%
Total in 2018	301	4.27	83.9%

Source: prepared by JICA Expert based on data from CBA

1.3.4. Output 4: Improvement of Business Management Capacity of CBA

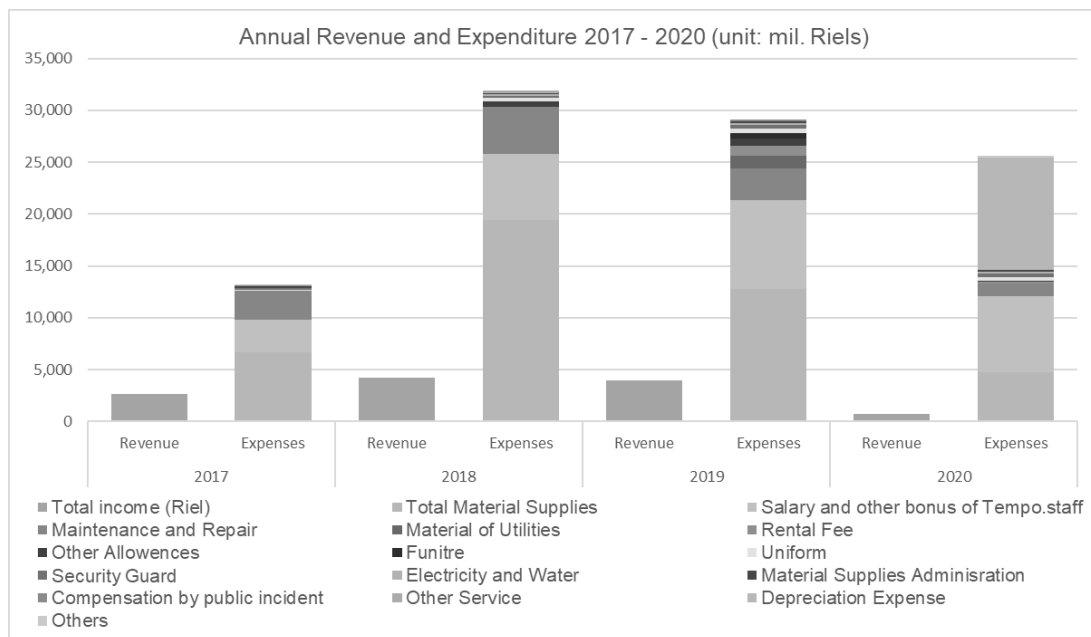
(1) Annual Revenue and Expenditure

The total expenditure has been significantly increased from 2017 to 2018 and 2019 due to the increase of the bus fleets and expansion of the network and service as well as relocation of the office to the new depot. As a result, the expenditure in 2018 reached 32 billion Riel/annum and around 60% of the

expenditure is channeled for material supplies for the new office. In 2019, the amount for material supplies for the office significantly dropped but the expenditure for staff remuneration increases due to an increase in a number of staffs and the total expenditure reached at 29 billion Riel/annum.

On the other hand, the amount of revenue, mainly from fare collection, remained same in 2019 and reached at 4 billion Riel/annum and therefore, the CBA lost 25 billion Riel (6 million USD) in 2019.

In 2020, CBA revenue dropped sharply to 700 million Riel due to the COVID-19 pandemic and suspension of the bus operation from March 26th 2020. In terms of the CBA expenditure, expenditure related to bus service, including material supplies and maintenance and repair cost, decreased significantly in 2020. On the other hand, the CBA maintained to employ the drivers/staffs and retained depreciation expenses for future improvement/replacement of the CBA's assets such as the bus fleets. As a result the CBA spent around 26 billion Riel in 2020.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (1) Annual Revenue and Expenditure (2017-2020)

(2) Summary of monthly revenue/expense in CBA

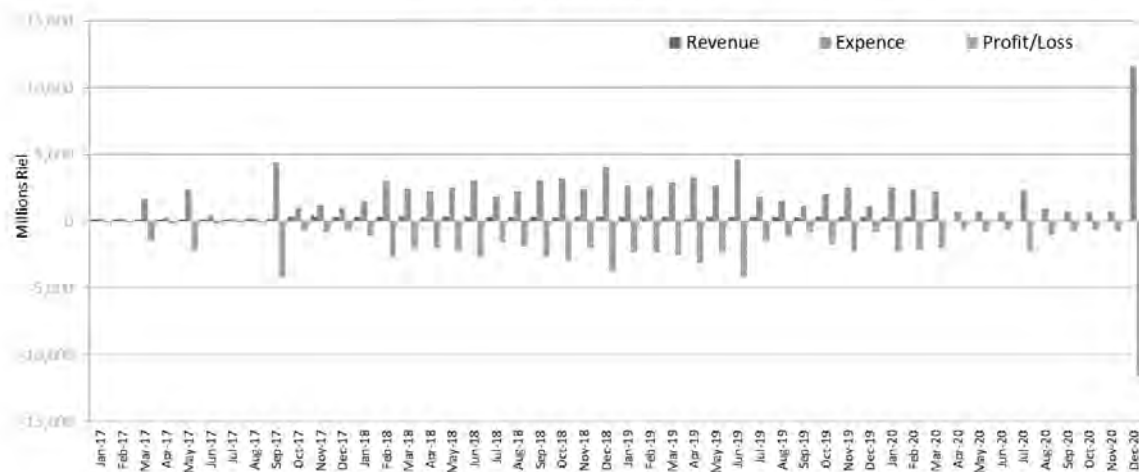
Table 1.3.4 (1) Monthly Revenue and Expense (2017-2020)

(mil.Riels)

Revenue & Cost 2017				Revenue & Cost 2018			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-17	184	211	-27	Jan-18	371	1,441	-1,070
Feb-17	166	195	-30	Feb-18	348	3,018	-2,670
Mar-17	182	1,721	-1,538	Mar-18	397	2,442	-2,045
Apr-17	143	289	-146	Apr-18	275	2,264	-1,989
May-17	175	2,387	-2,212	May-18	356	2,527	-2,171
Jun-17	165	376	-211	Jun-18	357	3,069	-2,712
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689
Oct-17	313	996	-683	Oct-18	300	3,262	-2,962
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712
Total 2017	2,638	13,171	-10,532	Total 2018	4,202	31,677	-27,474

Revenue & Cost 2019				Revenue & Cost 2020			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-19	347	2,662	-2,316	Jan-20	278	2,540	-2,262
Feb-19	309	2,599	-2,291	Feb-20	251	2,386	-2,135
Mar-19	358	2,940	-2,582	Mar-20	171	2,186	-2,015
Apr-19	247	3,334	-3,087	Apr-20	-	731	-731
May-19	324	2,713	-2,389	May-20	-	798	-798
Jun-19	359	4,583	-4,224	Jun-20	-	668	-668
Jul-19	354	1,872	-1,518	Jul-20	-	2,316	-2,316
Aug-19	338	1,505	-1,167	Aug-20	-	988	-988
Sep-19	285	1,156	-871	Sep-20	-	691	-691
Oct-19	364	2,043	-1,679	Oct-20	-	657	-657
Nov-19	336	2,580	-2,244	Nov-20	-	727	-727
Dec-19	340	1,174	-834	Dec-20	-	11,628	-11,628
Total 2019	3,960	29,162	-25,202	Total 2020	701	26,316	-25,616

Monthly Revenue and Expense



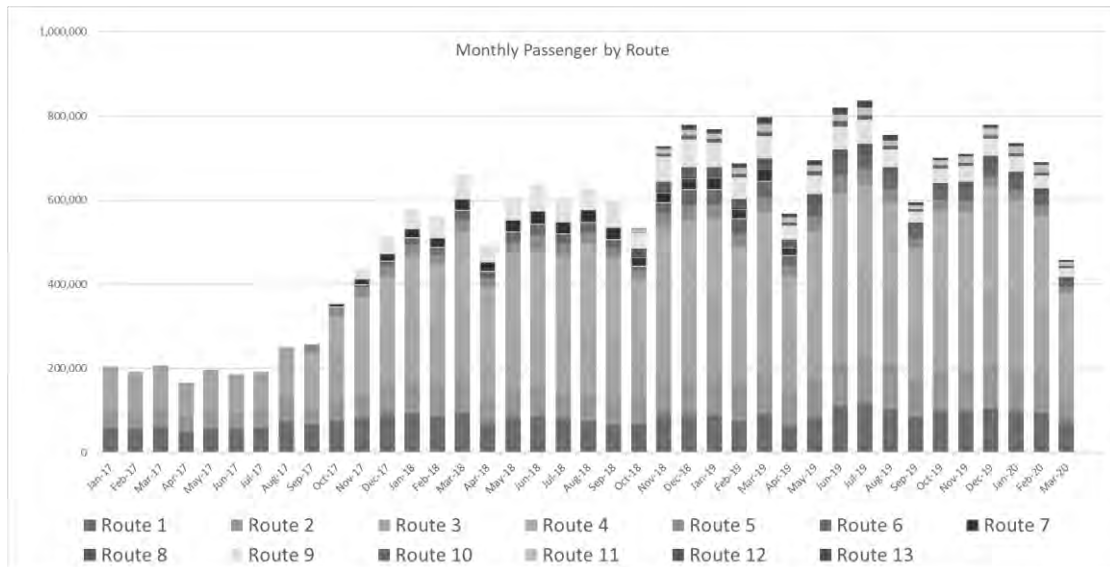
Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (2) Monthly Revenue and Expense 2017-2020

(3) No. of passengers by route

The Routes 1 to 4 run along the radial and trunk road network and collect more

than 70% of the total passengers and this tendency remains same from when the CBA expanded the network from 8 to 13 routes. Due to restriction in social and economic activities and travel caused by the COVID-19 pandemic as well as the temporary termination of City bus service, the number of passengers significantly reduced in March 2020.

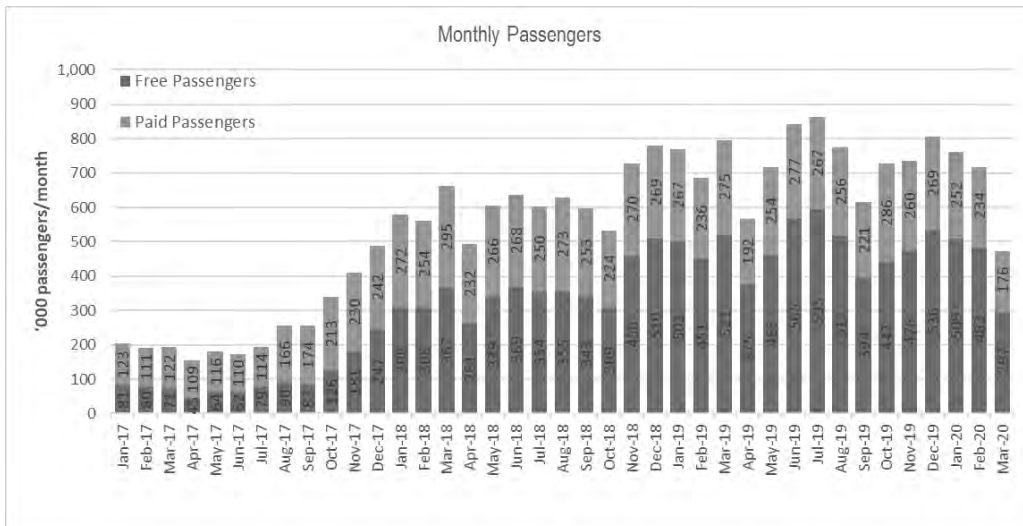


Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (3) Monthly Passengers by Routes 2017-2020

(4) No. of free/paid passenger

As PM announced free buses for factory workers in the public meeting in May 2017, the CBA has been providing free service for elderly people, students and factory workers. Though the number of paid passengers remains nearly same since the bus network was expanded from 3 lines to 8 line and from 8 lines to 13 lines, the number of free riders continue to increase and 65% of the bus users are free riders.



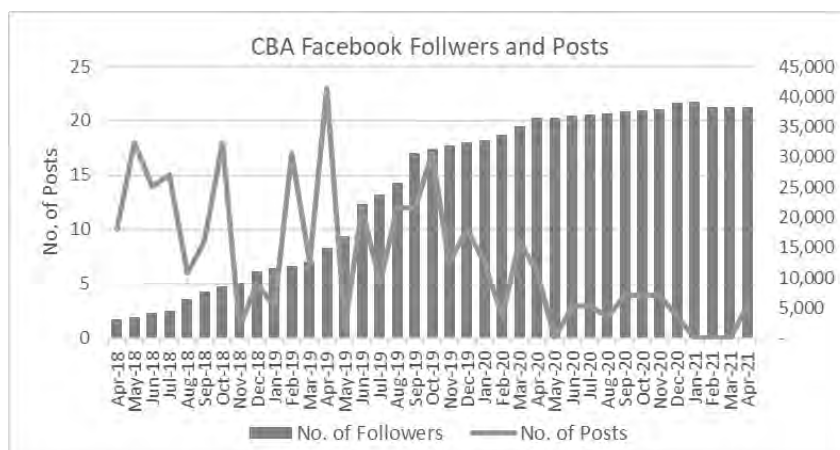
Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (4) Monthly Passenger by Type (Free/ Paid)

1.3.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

(1) CBA's Facebook

CBA uses Facebook as part of its public relations activities to communicate with bus users and stakeholders. The CBA Facebook has more than 39,000 followers and is rated 5⁽¹⁾ out of 5 as of May 2021. On Facebook, CBA published a PR video to improve the understanding of the CBA bus services, which was the most-watched on CBA's Facebook page and earned more than 78,000 views by May 2021. Even after bus operation was suspended in March 2020, CBA's Facebook regularly updated and maintains the number of followers.

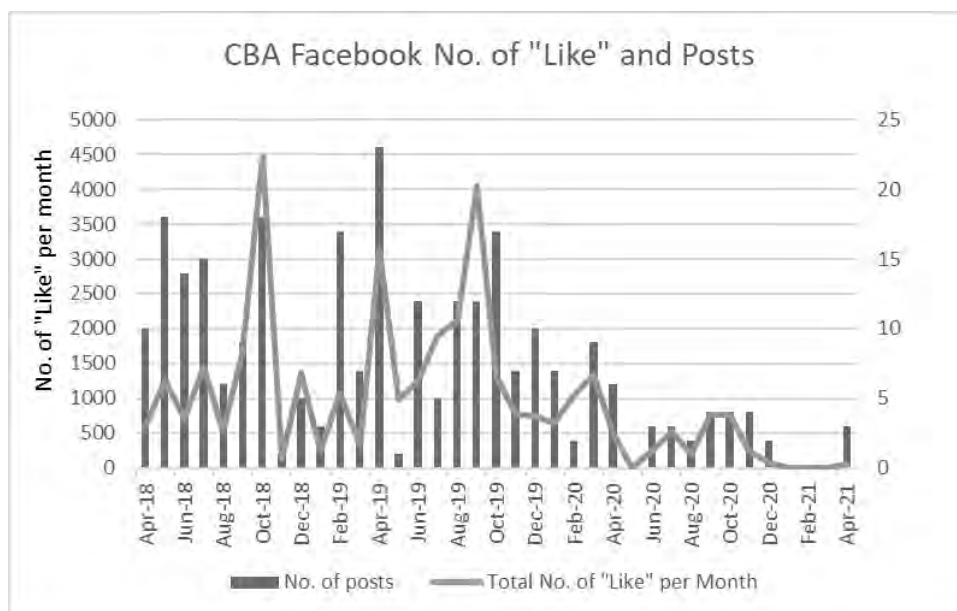


Source: prepared by JICA Expert based on data from CBA

Figure 1.3.5 (1) No. of Followers and Posts

(1) The rating is based on how many people recommend or do not recommend the page

Many “Likes” are observed when CBA provided the special inter-regional shuttle bus service during the holidays of Khmer New Year (April) and Pchum Ben Days Sep/Oct). A number of “Likes” are also given to the useful and attractive information for the passengers such as “Bus Map” as well as “Female Drivers”.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.5 (2) No. of “Like” and Posts of CBA Facebook Page

Table 1.3.5 (1) List of Popular Posts in CBA Facebook Page

Date	Title	No. of Like
25 Sep. 2019	On the Pchum Ben Days, CBA is ready to transportation the peoples to homeland From 26 to 30 September 2019	1700
6 Jul. 2019	Currently, CBA has cooperated with JICA to train two female drivers	1600
9 Dec. 2018	Students are happy to ride CBA bus to/ from school safely	620
11 Apr. 2019	Ready for transportation tomorrow, travel safely!	605
30 Oct. 2018	Bus Map of the 13 bus lanes of the CBA	589
6 Oct. 2018	Activities to transport people to provinces on October 06, 2018	570
4 Oct. 2020	All of CBA leader and staffs are are shocked to learn that Ms. Hay Sopheak, the lady driver was passed away	525
7 Aug.2019	CBA shared the news from Khmer Time News on the first lady drive	505

Note: popular posts mean the post marks more than 500 “like” in CBA Facebook page as of 15 Jan. 2021

Source: CBA Facebook page

Table 1.3.5 (2) List of Popular Videos in CBA Facebook Page

Date	Title	No. of Views
13 Sep. 2019	Progress of public bus services	78,000
28 Sep. 2018	Phnom Penh is ready to launch a test run of a new bus, a grant from the Government of Japan on 5 new routes on October 1, 2018	73,000
28 Mar. 2018	How to use the bus service	71,000

Source: CBA Facebook page

1.4. Achievement of Output

Due to COVID-19 pandemic, all CBA bus services have been suspended since 26th March 2020 and JICA Experts have been working remotely with the CBA counterparts to progress the project output and activities. (Note that Bus Vehicle Maintenance Expert was assigned in Cambodia from Jan to March 2021, and assignment of other experts are still pending due to on-going community based COVID-19 pandemic and restriction of the travel of short-term experts)

Through both CBA and JICA Experts have been actively involved in accomplishment of COVID-19 countermeasures and preparation for restoration of City bus operation, these activities do not significantly contribute to making significant progresses to accomplish the project output and activities. The achievement level of each output is summarized below.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA

Objective verifiable indicator of Output 1	Achieved	Activities completed
- Level of skills and knowledge on bus operation of three (3) key CBA staff(s) is improved to trainer's level	66%	<ul style="list-style-type: none"> - A number of workshops/seminars conducted for CBA management and staffs - 1st study trip carried out in Malaysia and Singapore (Feb 2018) - 2nd study trip in Japan (Feb 2019) and network plan and operation scheme studied - 3rd study trip carried out in Vietnam and Singapore (Oct 2019) - CBA developed bus route/fleet deployment plan and implemented Phase 2 network and operation plan. - Capacity assessment survey conducted in June 2019
- Bus operation manual is developed	75%	<ul style="list-style-type: none"> - Bus operation reviewed - Optimum bus network and operation plan developed - Bus network and operation plan (Phase 1) discussed and approved by PPCA Governor - Phase 1 (Line 1-9) implemented by Nov 2017 - Roster plan developed and tested in Line 9. - Phase 1 network and operation practice reviewed

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		<ul style="list-style-type: none"> - Bus network and operation plan (Phase 2) drafted and approved by PPCA Governor - Phase 2 (Line 1-13) implemented by Oct 2018 - Bus network reviewed and revised following suspension of Korean buses in Aug 2019 - In Sep 2020 and Dec 2020, the bus operation plan under COVID-19 pandemic was developed
<p>- Bus operation system/model is established</p>	<p>80%</p>	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - ICT-based Bus Operation and Management System (BOMS) developed by June 2019 and bus location system started official operation in July 2019 - BOMS has been tested and improved for several functions including timetabling, drivers roster planning, inspection and maintenance monitoring and planning.
<p>- Bus operation is reviewed and revised based on data collected</p>	<p>70%</p>	<ul style="list-style-type: none"> - Phase 1 operation reviewed and optimum operation plan (roster plan) developed and tested in Line 9. - Phase 1 network and operation practice reviewed and Bus network and operation plan (Phase 2) developed and implemented - Phase 2 network and operation practice reviewed and bus operation plan revised and implemented, following suspension of Korean buses - Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster by Dec 2019 - Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A in Feb 2020 - Improvement of operational management analysis through BOMS in Feb 2020 - In Sep 2020 and Dec 2020, the bus operation plan (timetable and drivers roster plan) was inputted to BOMS

1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Objective verifiable indicator of Output 2	Achieved	Activities completed
<p>- Level of skills and knowledge on bus maintenance of five (5) key CBA staff(s) is improved to trainer's level</p>	<p>50%</p>	<ul style="list-style-type: none"> - Recruitment plan prepared and approved by PPCA - CBA recruited chief maintenance mechanics by April 2018 - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA maintenance mechanics also carried out maintenance for initial defects for Japanese buses - A number of workshops conducted for CBA management and staffs - A study trip carried out in Malaysia, Singapore, Vietnam and Japan (drivers/fleets management studied) - Capacity evaluation survey conducted in June 2019
<p>- Bus vehicle maintenance manual is developed</p>	<p>75%</p>	<ul style="list-style-type: none"> - Bus operation and maintenance manual for Korean and Chinese bus reviewed - Operation and maintenance manual to prepared by bus fleet suppliers - Bus maintenance plan, including preliminary running cost estimates, prepared - A number of workshops conducted for CBA maintenance mechanics - Training video for bus inspection and maintenance prepared in Oct 2019 - Training video for heavy duty maintenance/repair works under preparation
<p>- Bus inspection is routinely conducted, following maintenance manual</p>	<p>85%</p>	<ul style="list-style-type: none"> - Bus operation and maintenance for Korean and Chinese bus reviewed - CBA maintenance mechanics carried out initial regular maintenance for Japanese buses (5000 km) - CBA regularly carried out periodic inspection and maintenance for Chinese and Japanese buses - CBA also carried out maintenance for initial defects for Japanese buses - CBA started inspection and maintenance

		<p>for Chinese buses</p> <ul style="list-style-type: none"> - Improvement of fleet management analysis through BOMS by Feb 2020 - During suspension of the City bus operation caused by COVID-19 pandemic, all the Japanese and Chinese buses were inspected intensively. - Additional tools/equipment for inspection and maintenance possibly to be procured as part of enhancement capacity development plan through coordination with NPIC/JVC and/or COVID-19 countermeasure
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1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Objective verifiable indicator of Output 3	Achieved	Activities completed
- Bus driver training manual is developed	70%	<ul style="list-style-type: none"> - Bus driver manual collected and reviewed - Traffic accident data collected and analyzed - Safety driving manual drafted and submitted to CBA management - Driver's operation manual developed by bus fleet suppliers - Training video for safety driving developed - A number of workshops conducted for CBA management and staffs - Improvement of driver's management system (based on scheduled bus and drivers roster) through BOMS in Feb 2020 - Bus driver manual under COVID-19 pandemic developed in Aug 2020 - Bus driver operation video under COVID-19 developed in Aug 2020
- Conductor work manual is developed	NA	NA
- Level of skills and knowledge on bus driving of 20 key CBA staff(s) is improved to trainer's level	50%	<ul style="list-style-type: none"> - 16 AM/PM chief drivers involved in a series of workshops - A number of workshops conducted by chief drivers - Capacity assessment survey conducted in June 2019
- All drivers have completed the driver training and passed	80%	<ul style="list-style-type: none"> - Drivers driving record collected and analyzed

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training		<ul style="list-style-type: none"> - Drivers paper and practical tests were conducted during recruitment for Japanese buses - Only drivers who passed paper and practical tests employed by CBA - The CBA conducted Hygiene and Prevention training against COVID-19 in May 2020 - During suspension of City bus operation, the CBA conducted intensive training and driving test under the COVID-19 pandemic in Aug 2020
- Level of knowledge on bus conductor of 20 key CBA staff(s) is improved to trainer's level	NA	NA
- All conductors have completed the conductor training and passed training	NA	NA
- Safety management system is developed	20%	<ul style="list-style-type: none"> - Traffic accident data collected and analyzed - System supplier for safety driving system surveyed to study a business model

1.4.4. Output 4: Improvement of Business Management Capacity of CBA

Objective verifiable indicator of Output 4	Achieved	Activities completed
- Level of skills and knowledge on financial and management accounting of three (3) key CBA staff(s) is improved to trainer's level	80%	<ul style="list-style-type: none"> - A number of workshops conducted for CBA management and staffs - CBA regularly prepared budget plan as well as revenue/cost reports - Capacity assessment survey conducted in June 2019
- Financial statements are prepared	80%	<ul style="list-style-type: none"> - Financial statement of CBA collected and analyzed - CBA confirmed competent in preparing financial statement - CBA regularly prepared budget plan as well as revenue/cost reports
- Operation cost model and passenger database are developed	70%	<ul style="list-style-type: none"> - BOM model prepared and tested to develop Phase 1 network and operation plan - Passenger information collected updated
- Potential needs in bus operation are assessed	60%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted in Aug 2017 - Needs in bus operation assessed

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		<ul style="list-style-type: none"> - Monitoring survey for bus and non-bus passenger conducted in May 2018 and May 2019 - Needs survey conducted at factories in Phnom Penh SEZ - Needs survey conducted to private airport shuttle service provider - CBA carried out dissemination workshops involving all Districts in Phnom Penh in June 2018 and June 2019
- Business plan is formulated and reflects on budget plan	40%	<ul style="list-style-type: none"> - Business plan of other public enterprises collected and analyzed - Company bus service assessed and business model prepared - CBA's new legislation drafted to upgrade to Public Administration Enterprise - PPCA assigned private advertisement company, initiated advertisement, wrapping Chinese/Korean buses and developed nearly 170 sheltered bus stops
- Policies on bus fare and subsidy are drafted and agreed with PPCA	30%	<ul style="list-style-type: none"> - BOM model developed - PPCA provides subsidy for improvement and operation of the bus as planned.
- Cashless ticketing system is developed	80%	<ul style="list-style-type: none"> - CBA introduced Wing's NFC card - CBA introduced ACLEDA's QR code - JICA introduced smart phone based ticketing system - Expert Team assists integration of bus location and e-payment system

1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA (* to be revised following the result of Capacity evaluation survey.)

Objective verifiable indicator of Output 5	Achieved	Activities completed
- Level of skills and knowledge on traffic and mobility management of three (3) key CBA/DPWT/PPCA staff(s) is improved to trainer's level	30%	<ul style="list-style-type: none"> - A number of workshops conducted for CBA and DPWT - A study trip carried out in Malaysia and Singapore and in Japan bus priority measures studied - Capacity assessment survey conducted in June 2019 - A study trip carried out in Malaysia, Singapore, Vietnam and in Japan (improved efficiency in bus operation and

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		business)
- A series of traffic and mobility improvement strategies/plans, including traffic management and para-transit improvement plans, are prepared	60%	<ul style="list-style-type: none"> - Concept plan for public transport priority measures and mobility management scheme prepared - Implementation plan for mobility management workshop prepared and discussed with CBA management - Implementation plan for public transport priority measures prepared and discussed by JCC members - CBA submitted a concept plan as well as budget plan to PPCA - Action plan for priority measures and mobility management scheme prepared - A planning guidebook for mobility management drafted - JICA Expert Team and ADB consultant team coordinate to draft policy guide and planning toolkit which include public transport priority measures - The Project assists PPCA to implement Rapid Bus (bus dedicated lane) at 5km section of Line 4 and ADB to continue to expand it to entire Line 1-4 - Design standard and specification of the Bus dedicated/priority lane drafted and discussed with DPWT - Integrated public transport plan with e-bike drafted and pilot e-bike sharing at 11 designated bus terminals/stops approved by PPCA - Enhanced signal operation plan drafted and discussed with and approved by DPWT
- Evaluation of the pilot projects and mobility management is conducted	0%	Nil
- Bus related facilities are developed	80%	<ul style="list-style-type: none"> - Bus depot layout plan prepared and approved by PPCA - Construction of bus depot completed - Bus facilities (Bus stops/signs) for Phase 1 designed and installed - Bus facilities (Bus stops/signs) for Phase 2 designed and installed - PPCA assigned private advertisement company and developed nearly 170

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		<p>sheltered bus stops</p> <ul style="list-style-type: none"> - A design guidebook for bus related facilities drafted - Private e-bike operator (Oyika) to test e-bike sharing as pilot project at 11 designated bus terminals/stops - PPCA set aside the budget for plot Bus lane project in 2020. However due to COVID-19 pandemic and excessive budgetary needs against it, this budget was postponed to 2021 - Router to be procured and alternative operation network to be installed to enhance the signal operation
- Bus information and location system is developed	80%	<ul style="list-style-type: none"> - Bidding documents for bus operation and management system completed - GPS installed in all City Buses and bus monitoring and management system developed - Training on bus monitoring and management system implemented

1.5. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below.

Objective verifiable indicator of Project Output	Achieved	Activities completed
- Bus operation lines increase from 3 lines in 2017 to 10 lines in 2020.	100%	<ul style="list-style-type: none"> - Phase 1 bus network and operation plan developed and approved by PPCA - Bus network increased from 3 Lines to 8 lines by Nov 2017 - Phase 2 bus network and operation plan developed and approved by PPCA - Bus network increased from 8 lines to 13 lines
- Bus service rate improved from 67.5% in 2016 to over 90.0% in 2020	70%	<ul style="list-style-type: none"> - Bus service rate* improved from 67.5% in 2016 to 89.6% as of Mar 2018 - Bus service rate dropped 77.8% as of Dec 2018 and 69.4% as of May 2019 due to increased need for maintenance and traffic congestion - Bus service rate remains still low: 77.1% (Jan 2020) <p>Note: A number of reasons contribute to low service rate. First, the daily planned operation bus is estimated based on 4 round trips per bus, which is not practical</p>

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		<p>anymore after extension of the bus route. Secondly, the operation speed is getting lowered due to traffic congestion from 15.0 km/h as baseline in 2017 to 11.3 km/h as of Jan 2020. Thirdly, the rigid AM/PM shift of the driver reduces in-service ratio.</p> <ul style="list-style-type: none"> - Bus service ratio improved to 82.2%. <p>Note: this improved service ratio is considered to achieve by improved operation ratio by planned bus maintenance and improved operational speed due to the traffic impact caused by COVID-19 pandemic.</p>
<ul style="list-style-type: none"> - Bus fleets maintained periodically, following maintenance manual/plan and fatal defaults are maintained and the number of breakdown is decreased 	80%	<ul style="list-style-type: none"> - Japanese buses (80 units) regularly inspected and initial and periodic maintenance carried out at the mileage - Chinese buses (98 units) also regularly inspected and maintained by CBA - During suspension of the City bus operation caused by COVID-19 pandemic, all the Japanese and Chinese buses were inspected and maintained intensively. - Initial defaults of Japanese buses such as peeling of the body paints and cracks in the exhaust pipes, were settled through the discussion with the suppliers and are being or have been fixed.
<ul style="list-style-type: none"> - The number of traffic accidents by bus decreases from 2.68/100,000km in 2016 to 1.34/100,000km in 2020. 	80%	<ul style="list-style-type: none"> - Traffic accident bus involved analyzed - Traffic accident bus caused maintained at 2.01/100,000km (CBA drivers as first party) (5.50/100,000km in total) as of Oct - Dec 2018 - Traffic accident bus caused improved to 1.20/100,000km (CBA drivers as first party), 2.64/100,000km in total accident as of Jan – Apr 2019 - Traffic accident maintained at 1.17/100,000km (CBA drivers as first party), 3.66/100,000km in total accident in Jan – Dec 2019 - Traffic accidents maintain at 1.16/100,000km (CBA drivers as first party), 3.27/100,000km in total accident between Jan – Mar 2020
<ul style="list-style-type: none"> - Level of perception of the bus improves and customer satisfaction of bus users improves. 	80%	<ul style="list-style-type: none"> - Bus passenger and non-bus passenger interview survey conducted and baseline collected to monitor the performance in May 2018 and May 2019 - Overall satisfaction of bus services level

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		<p>significantly improved from 2.81 (Overall service evaluated as Good) to 3.72 (as Excellent)</p> <ul style="list-style-type: none"> - Public comments delivered through Facebook and utilize for raise customer satisfaction level - Dissemination campaign for City Bus held in all Khans in 2018 and 2019 - During the suspension of City bus operation, the CBA continue to post the activities to share the public, including social service, PR videos and information, COVID-19 countermeasures and a series of trainings, and which contributes to maintaining the Facebook subscribers and number of Likes - Online survey was conducted in Nov 2020 and which implied public preference to the restoration of City bus operation at earliest timing.
- Bus operation cost covered by the revenue in 2020.	13%	<ul style="list-style-type: none"> - Bus revenue covers 20 % of bus operation cost between Jan and Sep 2017 - Bus revenue coverage against operation cost remains low: 13 % of total expenses in 2019 - Bus revenue coverage against operation cost improved to 31% between January and March 2020 (Too early to judge the improved financial condition due to fluctuation of the expenditure by month)
- Average operation speed maintained at 15 km/h in 2020	80%	<ul style="list-style-type: none"> - Average operation speed maintained at 14.1km/h between Jan-Oct 2018 - Average operation speed slightly dropped at 13.6km/h between Jan -May 2019. - Average operation speed records at 13.1 km/h in 2019 and tends to continue slowing down at 11.3 km/h in Jan 2020 - Due to the traffic impact caused by COVID-19 pandemic, average operation speed improves and records at 15.6 km/h in March 2020. Average operation speed between January and March 2020 is 13.3 km/h

1.6. Changes of Risks and Actions for Mitigation

Not applicable

1.7. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.8. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.9. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Project assisted to recruit female bus driver(s) and as of Nov 2019, one female driver in a regular bus service and another female driver already got license and started on road training. (Note that one female driver passed away in Nov 2020 and remaining one female driver at work)

1.10. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

The Expert Team was tasked by JICA HQ to conduct a cross country study on countermeasures against COVID-19 for local authority and public transport service providers and has prepared the deliverables including (i) Final Report and (ii) Leaflet to promote the public transport service during COVID-19 pandemic. These deliverables are attached as Annex 10 in Monitoring Sheet ver 8.

2. Delay of Work Schedule and/or Problems (if any)

2.1. Delay of procurement and delivery of Japanese buses

2.1.1. Summary

Due to delayed procurement of Japanese buses (originally delivery of Japanese buses scheduled to be completed by Feb 2018, however, last and actual delivery was completed in Dec 2018), there is a risk that the major maintenance of Japanese bus scheduled every 120,000 km cannot be completed by the end of the Project (by Dec 2020).

2.1.2. Cause

Delayed procurement of Japanese buses

2.1.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Review and development of maintenance manual for the major defects/maintenance by Expert Team
- On-the-job training for major defects/maintenance by Expert Team
- Discussion for extension of the Project, including that on revised PDM/PO between Expert Team and CBA/PPCA
- Negotiation on contract addendum for extension of the Project between Expert Team and JICA

2.1.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for 3 months up to March 2021.

2.2. Suspension of City bus operation from March 2020

2.2.1. Summary

Due to the COVID-19 pandemic in Cambodia, the PPCA imposed a series of countermeasures to prevent COVID-19 infection among public and these countermeasures including suspension of City bus operation. The PPCA/CBA temporarily terminated the bus operation since 26th March 2020 and both CBA and JICA Experts have been facing difficulties to accomplish the pre-set project objectives and activities. There has been an unofficial discussion among PPCA and CBA implying that CBA would restart the City bus operation in March or April 2021 in consideration of expected low ridership due to persistent of public concern over the risk of COVID-19 infection and low revenue which increases the financial burden in time where saving of national budget is vital.

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for additional 9 months up to Feb 2022. However, due to community based outbreak of COVID-19 occurred in Feb 2021 and full and partial lockdown in Phnom Penh, the schedule of restarting bus operation is still unknown as of May 2021 which significantly and adversely impacts the implementation of planned project activities and delivery of expected project outcomes.

2.2.2. Cause

Suspension of City bus operation and budget constraints

2.2.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Development of operational plan under the several budget constraint scenarios (done)

- Preparation of staff and passenger safety plan under COVID-19 pandemic (done)
- Procurement of tools/equipment to prevent infection of COVID-19 for staff and passenger (done)
- Preparation of driver operation manual during COVID-19 pandemic (done)
- Implementation of series of staff and driver training to prevent infection of COVID-19 (done)
- Preparation of PR materials to well inform the bus passengers with restart of the City bus operation (done)
- Dissemination campaign to the bus passengers who used to use the City bus

2.2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Under discussion with JICA HQ as well as PPCA/CBA for variation order

2.3. Enhanced capacity for mechanics under collaboration with NPIC/JVC

2.3.1. Summary

There is on-going JICA project entitled 'Automotive Mechanic e-Learning Program' at NPIC (National Polytechnic Institute of Cambodia), aiming at materializing leaning materials, tools and facilities for the Automotive Mechanics students and hence improving the quality of the teaching program for the Mechanics. There is a growing demand derived from the said project that NPIC (and JVC Technical School and Workshop) would expand the current teaching program which limits to small automobile to include the program for large commercial vehicles such as trucks and buses. The concerned parties, including CBA/NPIC/JVC and JICA/Expert Team identified the CBA as the best venue to provide such training and which also benefits the CBA to improve sustainability of the mechanics training under collaboration with NPIC/JVC.

2.3.2. Cause

Lack of exit strategy to maintain the sustainability of the mechanics capacity building

2.3.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Design concept of collaboration among CBA, NPIC and JVC (done)
- Consensus building on the design concept among decision makers (done)

- Preparation of list of training tools and equipment for large commercial vehicles at CBA, NPIC and JVC (done)
- Preparation of training curriculum for large commercial vehicles (done)
- Procurement of training tools and equipment
- Operation and maintenance of those tools and equipment
- Provision of training courses for large commercial vehicles

2.3.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Under discussion with JICA HQ for variation order

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable

Monitoring Sheet 10

TO Chief Representative of JICA Cambodia Office

Project Monitoring Sheet

Project Title: The project for improvement of public bus operation in Phnom Penh

Version of the Sheet: Ver.10 (Term: May 2021 – Dec 2021)

Name: Ean Sokhim

Title: Governor, CBA

Name: Kiminari TAKAHASHI

Title: Chief Advisor

Submission Date: 28 Feb 2022

I. Summary

1. Progress

1.1. Progress of Inputs

Inputs have been provided by both Cambodian and Japanese side. The summary of inputs provided up to now is as follows. The details are attached as ***Annex 5: Inputs provided***. The list of working conditions of equipment provided is also attached as ***Annex 6: Working Conditions of Equipment Provided***.

<Cambodian Side>

1. Counterpart personnel: Three (3) organizations in total (CBA, DPWT/PPCA, PPCA)
2. Office space: Provided in CBA office
3. Equipment supply: Office space, office furniture, water/ electricity bill
4. Bus depot/facilities: Bus depot, bus stops/shelters, ticketing system
5. Employment of drivers/office staff
6. Local cost: See ***Annex 5: Inputs provided***.

<Japanese Side>

1. Dispatch of Experts: 16 positions and 20 experts
 - 1) Chief Advisor/ Public Transport Policy
 - 2) Deputy Chief Advisor/ Public Transport Policy (2)
 - 3) Bus Operation Planning
 - 4) Bus Vehicle Maintenance
 - 5) Bus Driver Training
 - 6) Business Management
 - 7) Traffic Control and Safety

- 8) Bus Facility Planning (1/2)
 - 9) IT System/Data Management
 - 10) Mobility Management (1/2/3)
 - 11) Stakeholder Management
 - 12) Monitoring and Evaluation
 - 13) Bus Operator Advisory Group (1/2)
 - 14) Preparatory Survey Review (Team Leader):
 - 15) Preparatory Survey Review (Bus Specification and Equipment)
 - 16) Preparatory Survey Review (Procurement Plan)
2. Training of counterpart personnel in Japan or 3rd country:
The 1st study trip was completed in Feb/March 2018 in Malaysia and Singapore. The 2nd study trip was completed in Feb 2019 in Japan. The 3rd study trip was carried out from 6th to 11th October 2019 in Vietnam and Singapore. The 4th and final study trip to Japan was scheduled in May 2020, however due to the COVID-19 pandemic, it is proposed to change to the overseas training and will be confirmed after 5th JCC.
3. Machinery and equipment:
Bus Operation and Management System (BOMS), Computers (2), inkjet printer, multi-purpose photo copier, projector and other office equipment. Materials and equipment related to Covid-19 infection prevention measures were also procured as needed. (See **Annex 5: Inputs Provided**)
4. Local Cost: See **Annex 5: Inputs Provided**

1.2. Progress of Activities

In order to prevent the spread of COVID-19, the CBA suspended bus service from March 26, 2020, but resumed service on November 2, 2021, with limited routes (Route 1A, 2,3,4A and 4B) and service (60 buses in use out of 181 buses in total) as agreed in 4th JCC and follow-up meetings.

From January 2021, JICA Experts resumed activities in Cambodia to the extent possible, but re-suspended work in Cambodia due to the pandemic condition in Phnom Penh. However, under the condition of resumption of bus services, JICA Experts also resumed its activities in Cambodia again in late November 2021.

<Overall Project>

1. Preparation and submission of Draft Work Plan (Jan 2017)
2. Preparation and submission of Work Plan (May 2017)
3. Kick-off meeting (8th Feb 2017)
4. 1st JCC (9th May 2017)

5. 2nd JCC (8th June 2018)
6. 3rd JCC (4th July 2019)
7. 4th Mini JCC (16th July 2021) (See **Annex 7: 4th JCC (Minutes, Materials) and Minutes of Follow-up Meeting**)
8. Other significant progress (relating to external factors of the Project)
 - i. Delivery of 98 Chinese buses (*delivered by Aug 2017*)
 - ii. Delivery of 80 Japanese buses (*delivered between Aug and Nov 2018*)
 - iii. Development of 4-hector depot (*completed by Jan 2019*)
 - iv. Development of bus stops/shelters (*completed by Dec 2018*)
 - v. Employment of mechanics (*occasionally*)
 - vi. Employment of drivers/office staffs (*occasionally*)
9. Other significant progress (COVID-19 countermeasures)
 - i. Implementation of Hygiene and Prevention Training” for “Zero COVID-19 Infections from Bus Drivers and Passengers” (Apr 2020)
 - ii. Procurement of equipment for COVID-19 infection prevention measures
 - iii. Installation of equipment for infection prevention
 - iv. Sanitization for bus vehicles against COVID-19
 - v. COVID-19 measures for bus vehicles during operation
 - vi. COVID-19 campaign for bus users
 - vii. Social contribution using 11 CBA bus fleets (e.g., shuttle transport for international passengers, transport service for essential workers such as doctors and medical staffs)
 - viii. Online survey (PR for COVID-19 countermeasures, bus suspension and impact by COVID-19)
 - ix. Cross country study on countermeasures against COVID-19 for local authority and public transport service providers
 - x. Examination of post-COVID-19 bus operation and proposal of bus operation manual



Seminar on Zero COVID-19 Infections



Handover of equipments for infection prevention measures

< Workshops/Trainings >

Various workshops/trainings were conducted to achieve the following 5 outputs of this Project;

- Output 1 Bus operation capacity of CBA is improved
- Output 2 Maintenance and inspection capacity on bus vehicles of CBA is implemented
- Output 3 Training system of bus drivers and conductors, drivers' management system for safe driving, and labor management system are established in CBA
- Output 4 CBA's business management capacity is improved
- Output 5 Capacity of CBA and DPWT/PPCA on policy planning for the public transport priority measures is improved

List of Workshops/Technical Trainings (up to Dec 2021, Order by date)

No.	Date	Duration	Title of Training	No. of participants	Output related
1	20 Jan 2017	Half Day	Work Plan Outline	10	1
2	24 Feb 2017	Half Day	Establishment Plan for Bus Vehicle Workshop	10	2
3	4 Mar 2017	Half Day	Bus Maintenance Plan and Budget (1)	10	2
4	26 Jun 2017	Half Day	Bus Maintenance Plan and Budget (2)	11	2
5	5 Jul 2017	Half Day	GPS System	13	5
6	11 Jul 2017	Half Day	Introduction Bus License & Others	12	3
7	11 Jul 2017	Half Day	Bus Stop Design Guide	12	1
8	11 Jul 2017	Half Day	Phnom Penh Bus Route Development Plan	12	1
9	6 Sept 2017	Half Day	Public Transport and Traffic Management Plan and Potential Pilot Project	16	1
10	8 Sept 2017	Half Day	1 st Workshop for the Accounting Office in CBA	16	4
11	12 Sept 2017	Half Day	1 st Work Shop Challenges to establish a sound business management system in CBA	13	4
12	18 Oct 2017	Half Day	Matters agreed between CBA, Jica expert and CJEC	9	5
13	31 Oct 2017	Half Day	Scheduling Improvements for CBA Bus Operation in Phnom Penh	15	1
14	7 Nov 2017	Half Day	Bus Maintenance Plan and Budget (3)	13	2
15	22 Nov 2017	Half Day	Implement Bus Operation Management System	14	5
16	7 Dec 2017	Half Day	Second Workshop of Cash Flow Statement	23	4
17	13 Dec 2017	Half Day	Mobility Management	21	5
18	15 Dec 2016	Half Day	Discussion on Bus System Operation in Phnom Penh	16	1
19	13 Dec 2017	Half Day	Bus Stop Design Guide	18	5
20	18 Dec 2017	Half Day	Bus Driving Training (1)	14	3
21	18 Dec 2017	Half Day	3 rd Workshop for the management and the accounting	12	4
22	21 Dec 2017	Half Day	Bus Fare and Economy	20	4
23	19 Jan 2018	Half day	Meeting with the Consultants of PiBo Project (Eagle Bus)	16	1
24	23 Jan 2018	Half Day	Concept Plan of Priority Measures for Public Transportation & Paratransit Management in Proposed Pilot Project	13	5
25	22 Feb 2018	Half Day	Daily Shift Schedule (Route 9: Borey Sontepheap2 to SEZ)	16	1
26	22 Feb 2018	Half Day	The Progress of ITC System	16	4
27	22 Feb 2018	Half Day	Bus Driving Training (2)	16	3

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28	27 Feb 2018	Full Day	Training to Chief Driver and Conductor at CBA for Schedule (Route 9)	11	1
29	3 Mar 2018	Full Day	Training The Daily Shift Schedule to the driver for Route 9: Borey Sontepheap2 to SEZ	34	1
30	9 Mar 2018	Half day	Progress of The Project for Improvement of Public Bus Operation in Phnom Penh	14	1
31	21 May 2018	Half Day	Dissemination Campaign at Khan Daun Penh	118	5
32	22 May 2018	Half Day	Dissemination Campaign at Khan Chamkarmorn	67	5
33	23 May 2018	Half Day	Dissemination Campaign at Khan Toul Kork	109	5
34	24 May 2018	Half Day	Dissemination Campaign at Khan Chbar Ampov	122	5
35	26 May 2018	Half Day	Dissemination Campaign at Khan Dangkor	101	5
36	30 May 2018	Half Day	Dissemination Campaign at Khan Mean Chey	63	5
37	4 Jun 2018	Half Day	Dissemination Campaign at Khan Sen Sok	76	5
38	5 Jun 2018	Half Day	Dissemination Campaign at Khan at Khan 7 Makara	75	5
39	6 Jun 2018	Half Day	Dissemination Campaign at Khan Por Sen Chey	52	5
40	7 Jun 2018	Half Day	Dissemination Campaign at Khan Russey Keo	89	5
41	7 Jun 2018	Half Day	Dissemination Campaign at Khan Chhrouy Chang Va	50	5
42	7 Jun 2018	Half Day	New Bus Stop Design, Mobility Management, and Bus Promotion Measure	12	5
43	20 Jun 2018	Half Day	Bus Operation Training	15	3
44	28 Jun 2018	Full Day	Chief Driver Training	24	3
45	12 Jul 2018	Full Day	Bus Driver Training	14	3
46	13 Jul 2018	Full Day	Bus Driver Training	16	3
47	5 Sep to 07 Oct 2018	33 Days	Bus driving training	No.1: 60, No.2: 60, No.3:40, No.4:40	3
48	12 Oct 2018	Half Day	Bus Stop Sign and Draft schedule for bus stop sign set up	6	5
49	12 Oct 2018	Half Day	Seminar on recommendation for the change of the statute	6	4
50	12 Oct 2018	Half Day	Mobility Management Promotion Measures	6	5
51	27 Nov 2018	8 days	Mechanic training	15	2
51	14 Dec 2018	Half Day	Progress Report	11	3
52	19 Dec 2018	Half Day	Safety Operation	10	3
53	19 Dec 2018	Half Day	Mobility Management Guideline	10	3
54	25 Nov-22 Dec 2018	22 Days	Chief Driver Training, New Driver Training and Mechanic Training	76	5
55	21 Jan 2019	Half Day	Fare Policy	13	4
56	31 Jan 2019	Half Day	Discussion on CBA's Condition and Registration Book	10	4
57	21 Mar 2019	Half Day	Bus Facility Planning Guideline & Recent Issue of Bus Facility	12	5
58	03 Jun 2019	Half Day	Dissemination Campaign at Khan Daun Penh	72	5
59	05 Jun 2019	Half Day	Dissemination Campaign at Khan Toul Kork	73	5
60	06 Jun 2019	Half Day	Dissemination Campaign at Khan Mean Chey	110	5
61	06 Jun 2019	Half Day	Dissemination Campaign at Khan Cham Kar Morn	97	5
62	07 Jun 2019	Half Day	Dissemination Campaign at Khan Chbar Ampov	92	5
63	10 Jun 2019	Half Day	Dissemination Campaign at Khan Dangkor	86	5
64	11 Jun 2019	Half Day	Dissemination Campaign Khan Por Sen Chey	114	5
65	13 Jun 2019	Half Day	Dissemination Campaign Khan 7 Makara	49	5
66	13 Jun 2019	Half Day	Dissemination Campaign Khan Sen Sok	52	5
67	14 Jun 2019	Half Day	Dissemination Campaign Khan Ressey Keo	90	5
68	20 Jun 2019	Half Day	Dissemination Campaign Khan Chhrouey Chang Va	46	5
69	21 Jun 2019	Half Day	Dissemination Campaign Khan Preah Phnov	104	5
70	02 Jul 2019	Half Day	Bus Scheduling improvement for CBA (Training)	25	1
71	05 Jul 2019	Half Day	Bus Maintenance, Explanation (Roll Call & Bus Schedule)	7	2
72	22 Jul 2019	Half Day	MM Action Plan Final, Concept Plan of Priority Measures Route	9	5
73	22 Jul 2019	Half Day	4 th Management Workshop Financial Simulation	11	4

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			and Cost Reduce		
74	10 Jul 2019	Half Day	Roll Call Training	50	3
75	15-19 Jul 2019	5 Days	New Driver Training	18	3
76	30 Jul 2019	Half Day	Driver Training Report, Promotion Video for Phnom Penh City Bus and The Progress of Bus Operation & Management System.	13	3
77	13 Aug 2019	Half Day	Bus Operation Plan and Deployment Plan	9	1
78	22 Aug 2019	Half Day	Scope of Pilot Bus Priority Measures	8	5
79	03 Oct 2019	Half Day	Rapid Bus Project 2019-2010	19	5
80	22 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Toul Kork	108	5
81	24 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan 7 Makara	64	5
82	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Mean Chey	89	5
83	25 Oct 2019	Half Day	Stakeholder Meeting on the Pilot Project at Khan Boeung Keng Kang	115	5
84	05 Nov 2019	Half day	Assembly Meeting (Utilization of Training video for drivers and mechanics)	Appx. 200 (All available staff of CBA)	2
85	07 Nov 2019	Half Day	Bus Maintenance	17	2
86	12 Dec 2019	Half Day	Project Monitoring Sheet and Progress of Bus Operation & Management System	21	4
87	12 Dec 2019	Half Day	E-Motorcycle sharing with City Bus	19	5
88	20 Dec 2019	Half Day	Preliminary Opinion Survey for Mobility Management	22	5
89	06 Jan 2020	Half Day	Summary of Activities of Finance and Management Area	11	4
90	20 Jan 2020	Half Day	Overview of JICA's bus Priority Pilot Project	15	5
91	07 Feb 2020	Half Day	Progress of Bus ICT	15	4
92	11 Mar 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane and Report of Parameter setting for Bus Priority signal control.	10	5
93	17 Mar 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane.	11	5
94	29 Apr 2020	Half Day	NO Corona Infections from CBA and Bus Users	13	1
95	8 May 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane	11	5
96	28 May 2020	Half Day	Zero Corona Infections from Bus Drivers and Passengers	10	2
97	27-28 May 2020	2 Days	Learning Seminar on Hygiene and Prevention against COVID-19	513	1
98	12 Jun 2020	Half Day	Concept Design Policy on JICA's Bus Priority Lane	6	5
99	30 Jun 2020	Half Day	Brief Progress Report to H.E Deputy Governor of PPCA	7	1
100	8 Jul 2020	Half Day	Tracking System for COVID-19 (PIBO)	7	1
101	22 Jul 2020	Half Day	Pandemic Bus Operation and Management Guide and Drivers COVID-19 Counter measures work content	11	3
102	05 Aug 2020	Half Day	Progress on E-bike Sharing	12	5
103	11 Aug 2020	Half Day	Bus vehicle maintenance expert	15	2
104	25 Aug 2020	Half Day	Progressive on E-bike sharing	8	5
105	26 Aug 2020	Half Day	Basic Approval on Installation of 4 Routers	7	4
106	26 Aug to 01 Sep 2020	5 days	Pandemic Bus Operational and Management Guide	465	3
107	02 Sep 2020	1 Day	Bus operation plan and deployment plan	7	1
108	25 Sep 2020	1 Day	Mobility Management "Remote Activity" Draft Plan + MOU	12	5
109	28 Sep 2020	1 Day	Pandemic Bus Operational and Management Guide	58	3
110	29 Sep 2020	1 Day	Preparation for the Reconstruction of the Public Bus	21	1
111	16 Oct 2020	Half Day	Improved sustainability of mechanics training-Coordination with NPIC and JVC	15	2
112	21 Jan 2021	Half Day	Presentation on New Business for E -tok tok and E Van	11	5
113	09 Feb. 2021	Half Day	Bus Maintenance	13	2
114	24 Mar 2021	Half Day	Bus Maintenance	11	2

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115	01 Apr 2021	Half Day	QR Cord Stop Covid 19	7	5
116	22 Apr 2021	Half Day	Router Installation for more redundant OFC NW	16	1
117	06 June 2021	Half Day	Overseas Training for Mechanics	10	2
118	23 June 2021	Half Day	Fiber Optic Core Connection Link	12	4
119	29 June 2021	Half Day	Bakong Payment System and integration with bus ticketing/payment system	17	4
120	08 Aug 2021	Haft Day	Bakong App for CBA	28	4
121	24 Aug 2021	Haft Day	Bus Operation & Deployment Plan	12	1
122	01 Sep 2021	Haft Day	Bakong App for CBA	37	4
123	07 Sep 2021	Half Day	Bakong App for CBA	29	4
124	03 Nov 2021	Half Day	Progress of Switch Installation	12	4
125	10 Nov 2021	Half Day	Amendment of R/D and Minutes of Meeting	14	All
126	08 Dec 2021	Half Day	Approval for Specification of Aerial OFC	11	4
127	16 Dec 2021	Half Day	City Bus Application	9	4
128	22 Dec 2021	Half Day	Progress of Mobility Management	9	5

List of Online Meetings/Technical Trainings (up to Dec 2020, Order by date)

<For Output 2/3/4>

No.	Date	Duration	Title of Training	Target section in CBA	Lecturer (Expert Name)
1	17 Jun 2020	Half day	Progress of maintenance work, Air ventilation test, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
2	09 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
3	16 Jul 2020	Half day	Progress of maintenance work, Improvement of BOMS, Training video	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
4	21 Jul 2020	Half day	Driver training video, Mechanic training video, Progress of maintenance work	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
5	30 Jul 2020	Half day	Driver training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Mechanics training video, Improvement of BOMS	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
6	06 Aug 2020	Half day	Installation of COVID-19 tools/equipment, Driver training video, Monitoring initial defects, Mechanics training video, Improvement of BOMS	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
7	13 Aug 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
8	25 Aug 2020	Half day	Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
9	03 Sep 2020	Half day	Bus operation plan and deployment plan with COVID-19 pandemic, Driver training video, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
10	10 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
11	23 Sep 2020	Half day	Driver training video, Bus inspection, Mechanics training video, Improvement of BOMS, Installation of COVID-19 tools/equipment, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
12	01 Oct 2020	Half day	Driver training video, Driver training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
13	08 Oct 2020	Half day	Driver training video, Driver training, Improvement of BOMS, Mechanics training video, Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
14	14 Oct	Half day	Driver training video, Driver training, Bus inspectio ,	Mechanic	Uzawa/ Murata/

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	2020		Installation of COVID-19 tools/equipment, Mechanics training video, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	section	Takahashi/ Kov
15	22 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
16	28 Oct 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
17	05 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
18	12 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
19	19 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
20	25 Nov 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
21	03 Dec 2020	Half day	Bus inspection, Installation of COVID-19 tools/equipment, Improvement of bus services, Mechanics training video, Improvement of BOMS, Monitoring initial defects, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures, Waste collection truck	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
22	10 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
23	16 Dec 2020	Half day	Improvement of bus services	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
24	25 Dec 2020	Half day	Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Monitoring initial defects, Improvement of bus services, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
25	06 Jan 2021	Half day	Improvement of bus services, Monitoring initial defects, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa/ Murata/ Takahashi/ Kov
26	13 Jan 2021	Half day	Improvement of monitor and display board (Bus stops display on monitor), Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, Enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
27	20 Jan 2021	Half day	Improvement of bus services, Bus inspection, Improvement of BOMS, collaboration with NPIC and COVID-19	Mechanic section	Uzawa

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			countermeasures		
28	27 Jan 2021	Half day	KM9 terminal utilization plan, Parking space arrangement, Drivers training/ inspection for resume bus operation, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
29	03 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Bus inspection, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanics training video, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata
30	10 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Monitoring initial defects, Parking space arrangement, Drivers training/ inspection for resume bus operation, Improvement of BOMS, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Takahashi, Kov
31	18 Feb 2021	Half day	KM9 terminal utilization plan, Improvement of bus services, Monitoring initial defects, Parking space arrangement, Drivers training/ inspection for resume bus operation, collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
32	25 Feb 2021	Half day	Improvement of bus services, Drivers training/ inspection for resume bus operation, Improvement of BOMS, Installation of COVID-19 tools/equipment, Mechanic training video, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Kov
33	04 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Automobile repair and maintenance skills evaluation test, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Murata, Kov
34	11 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Automobile repair and maintenance skills evaluation test, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa
35	18 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures	Mechanic section	Uzawa, Kov
36	25 Mar 2021	Half day	Improvement of bus services, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures, Bus maintenance manual	Mechanic section	Uzawa, Kov
37	01 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Drivers training for resume bus operation, Installation of COVID-19 tools/equipment, Mechanic training video, Selection of OJT Training, Collaboration with NPIC and COVID-19 countermeasures, Bus maintenance manual	Mechanic section	Uzawa, Kov
38	08 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, Drivers training for resume bus operation, Bus maintenance manual	Mechanic section	Uzawa, Kov
39	22 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, Drivers training for resume bus operation, Bus maintenance manual	Mechanic section	Uzawa, Kov
40	28 Apr 2021	Half day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, English lesson for mechanics, Mechanic online training, Bus maintenance manual	Mechanic section	Uzawa, Kov
41	07 May 2021	Half Day	Improvement of bus services, "Stop COVID" QR code, Procurement of equipment and tools, Collaboration with NPIC and JVC, Selection of OJT Training, English lesson for mechanics, Mechanic online training, Bus maintenance manual	Mechanic section	Uzawa, Kov

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42	13 May 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
43	20 May 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
44	27 May 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
45	03 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, 3 OJT candidates 1Substitute, Maintenance section, Procurement of Equipment and tools Bidding preparation, Mechanic online training, Smart glasses, YouTube English lesson for mechanics, Bus maintenance manual, Completion report	Mechanic section	Uzawa, Kov
46	16 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, Smart glass, 3 OJT Candidates 1 Substitute, Procurement of Equipment and tools Bidding preparation, Translation Bus maintenance manual	Mechanic section	Uzawa, Kov
47	24 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, Smart glass, 3 OJT Candidates 1 Substitute, Procurement of Equipment and tools Bidding preparation, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT,	Mechanic section	Uzawa, Kov
48	25 June 2021	Half Day	Improvement of Bus stops display monitor, "Stop COVID"QR Code, Smart glass, , Procurement of Equipment and tools Bidding preparation, 3 OJT Candidates 1 Substitute, Mechanic online training, YouTube English Lesson for mechanics, Maintenance section, Translation Bus maintenance manual, Apprenticeship program, JICA: Internship Program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
49	07 July 2021	Half Day	Improvement of bus stops display monitor, "Stop COVID" QR Code, Smart glasses, Procurement of Equipment and tools Bidding preparation, OJT Candidate 1 Substitute, Mechanic online training, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
50	4 July 2021	Half Day	Improvement of bus stops display monitor, Smart glasses, "Stop COVID"QR Code, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship Program: NPIC, JVC, ICT	Mechanic Section	Uzawa, Kov, Murata
51	22 July 2021	Half Day	Improvement of bus stops display monitor, Smart glasses, "Stop COVID"QR Code, Procurement of Equipment and tools Bidding preparation (MOU: NPIC, JVC), 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Maintenance section, Translation Bus Maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
52	29 July 2021	Half Day	Monitoring for Covid 19 counter measures, Improvement of Bus stops display monitor, Smart glasses, "Stop COVID"QR code, Procurement and tools bidding preparation, 3 OJT candidates 1 Substitute, Mechanic	Mechanic section	Uzawa, Kov

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			online training with smart glasses, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT		
53	5 Aug 2021	Half Day	Improvement of bus stops display monitor, "Stop COVID" QR code, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Maintenance section, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
54	12 Aug 2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Translation Bus maintenance manual, Apprenticeship program, JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa, Kov
55	18 Aug 2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa Murata Kov
56	26 Aug 2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with Smart glasses, Translation Bus maintenance manual, Apprenticeship program JICA: Internship program: NPIC, JVC, ICT	Mechanic section	Uzawa Kov
57	16 Sep 2021	Half Day	CBA COVID 19 Countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with smart glasses, Reporting to higher authority for restoration of the bus operation, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities, Ex-Post Supervision check sheet	Mechanic Section	Uzawa Kov
58	22 Sep 2021	Half Day	CBA COVID 19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with Smart Glass, Reporting to higher authority for restoration of bus operation, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities, Ex-Post supervision check sheet	Mechanic Section	Uzawa
59	01 Oct 2021	Half Day	CBA COVID 19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training with Smart Glass, Reporting to higher authority for restoration of bus operation, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and others facilities	Mechanic Section	Takahashi Uzawa Kov
60	14 Oct 2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation (MOU: NPIC, JVC=Pending), 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities,	Mechanic Section	Takahashi Uzawa Kov
61	21 Oct 2021	Half Day	CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation (MOU: NPIC, JVC=Pending), 3 OJT	Mechanic Section	Takahashi Uzawa Kov

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			<p>candidates 1 Substitute, Mechanic online training With Smart glasses, Bus scheduling/driver roster/fleet assignment under 30% scenario, GPS and other facilities, Traffic signal switch and router.</p>		
62	28 Oct 2021	Half Day	<p>CBA COVID19 countermeasures, Improvement of bus stops display monitor, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute, Mechanic online training With Smart glasses, Bus scheduling/driver roster/fleet assignment under 30% scenario, Driver's training before the resume bus operation, GPS and other facilities, Traffic signal switch and router, City bus app.</p>	Mechanic Section	Takahashi Uzawa Kov
63	04 Nov 2021	Half Day	<p>Bus resumption, Bus scheduling/driver roster/fleet assignment under 30% scenario, Driver's training before the resume bus operation, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute</p>	Mechanic Section	Takahashi Uzawa Kov
64	11 Nov 2021	Half Day	<p>Bus resumption, EOJ video shooting, Bus scheduling/driver roster/fleet assignment under 30% scenario, Driver's training before the resume bus operation, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute</p>	Mechanic Section	Uzawa
65	17 Nov 2021	Half Day	<p>Bus resumption, EOJ video shooting, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training, With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute</p>	Mechanic Section	Uzawa
66	25 Nov 2021	Half Day	<p>Bus resumption, Bus operation, EOJ video shooting, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, City bus app, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Procurement of Equipment and tools Bidding preparation, 3 OJT candidates 1 Substitute</p>	Mechanic Section	Uzawa Kov
67	9 Dec 2021	Half Day	<p>Bus operation, City bus app, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Exhaust pipe</p>	Mechanic Section	Takahashi Uzawa
68	16 Dec 2021	Half Day	<p>Bus operation, City bus app, Improvement of bus stops display monitor, GPS and other facilities, Traffic signal switch and router, CBA COVID19 countermeasures, Mechanic online training With Smart glasses, Exhaust pipe, CBA bus users and non-users survey</p>	Mechanic Section	Uzawa

<For Output 5>

No.	Date	Duration	Title of Training	Target section in CBA
1	09 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (1)	Technical section
2	16 Jul 2020	Half day	Mobility Management "Remote Activity" Draft Plan: outline (2)	Technical section
3	27 Jul 2020	Half day	Ideas for Facebook promotion and promotion videos,	Technical

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			Preparation for bus information provision at major facilities	section
4	04 Aug 2020	Half day	Example script and storyboard for “How-to” videos, Filming of the video, Destination introduction by CBA staff/ drivers	Technical section
5	11 Aug 2020	Half day	Sample format for bus stop information for major facilities (How to prepare and scale-up), Discussion on progress of the video making	Technical section
6	24 Aug 2020	Half day	Overview of Mobility Management Activity of PIBO Project, Promotion Campaign at Schools	Technical section
7	31 Aug 2020	Half day	Discussion on Bus Operation Information, Discussion on COVID-19 Video, Discussion on schedule and how to proceed, targeting bus operation from October	Technical section
8	07 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (1)	Technical section
9	15 Sep 2020	Half day	Discussion on schedule and progress, Discussion on information on bus restart (2)	Technical section
10	25 Sep 2020	Half day	Overview of Mobility Management activities and progress, Items to confirm with regard to bus operation restarts, Activities for the future	Technical section
11	05 Oct 2020	Half day	Bus operation restart information (video, poster, banner, press release)	Technical section
12	19 Oct 2020	Half day	Online survey (How to conduct, How to utilize result) (1)	Technical section
13	10 Oct 2020	Half day	Online questionnaire survey on City Bus's COVID-19 measures	Technical section
14	05 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (2)	Technical section
15	16 Nov 2020	Half day	Online survey (How to conduct, How to utilize result) (3)	Technical section
16	30 Nov 2020	Half day	Online survey (How to increase the number of respondent, How to inform PPCA and motivate PPCA for early operation)	Technical section
17	08 Dec 2020	Half day	Summary of Mobility Management activities done in 2020, Way forward : Preparation for restart	Technical section
18	18 Jan 2021	Half day	Preparation for restart, Mobility management plan for 2021	Technical section
19	1 Feb 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions	Technical section
20	18 Feb 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section
21	9 Mar 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section
22	24 Mar 2021	Half day	Mobility management: Progress on Short Stories Interview, Responding to online questionnaire opinions, Bus Stop Design Contest	Technical section
23	6 Apr 2021	Half day	Mobility management: Comments on Short Stories Interview, Bus Sticker/ wrapping with support message	Technical section
24	27 Apr 2021	Half day	Mobility management: Short Stories Interview schedule confirmation, Discussion on PR material prepared by ADB project team	Technical section
25	7 Jun 2021	Half Day	Mobility management: Short Stories Interview schedule confirmation, Discussion on PR material prepared by ADB project team, Discussion on promotion measures with “Smart technologies”	Technical section

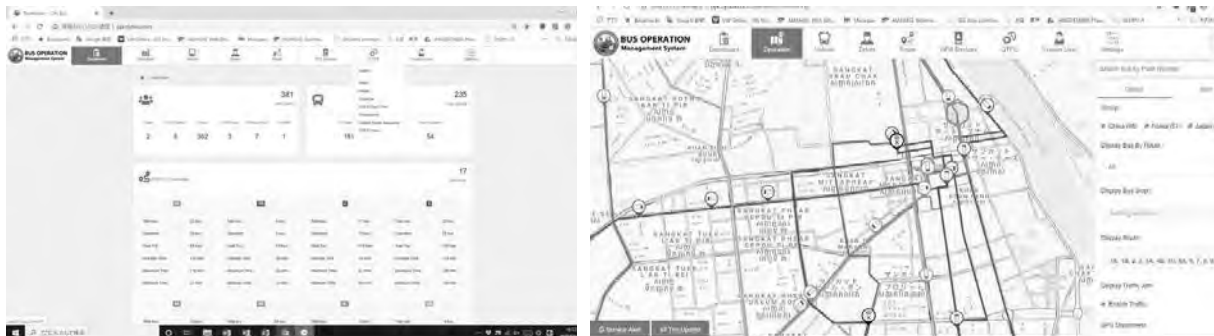
< Progress of Activities by Output >

The activities for **Output 1 “Improvement of Bus Operation Capacity of CBA”** are undergoing.

1. Baseline survey (*Jan 2017- May 2017*)
 - 1) Condition survey of bus routes and bus stops/terminus/facilities.
 - 2) Condition survey of bus operation and system
 - 3) Passenger demand survey
2. Study of necessary bus, size of bus depot and other facilities based on future bus network (*Feb 2017*)
3. Study of bus operation plan and review of bus operation plan prepared by CBA and by JICA plan proposed by previous projects (*Feb – May 2017*)
4. Approval of bus operation plan (Phase 1) totaling 9 bus lines (approved on 8th August 2017 by Governor) (*Aug 2017*)
5. Preparation of stepwise bus operation plan for Phase 1 (*May 2017*)
6. Stepwise implementation of Phase 1 (Line 1-3 replaced by new Chinese buses on 1st Aug, Line 4 and 5 and revised route operation on Line 2 started on 1st Sep, Line 7 on 1st Oct, Line 6 and 9 on 1st Nov) (*Aug – Nov 2017*)
7. Study on optimized bus operation plan and fleet/driver roster plan (Line 1-9) (*Dec 2017 - Feb 2018*)
8. Stepwise implementation of operation plan and monitoring (8 routes) (*Jan - Feb 2018*)
9. Preparation of optimized bus operation plan and fleet/driver roster plan and its implementation for Line 9 as a pilot (*Feb - Mar 2018*)
10. Review of Phase 1 operation plan and preparation of Phase 2 operation plan and bus fleet deployment plan (*April - May 2018*)
11. Approval of bus operation plan (Phase 2) by Governor, totaling 13 bus lines (Sep 2018)
12. Stepwise implementation of Phase 2 (Line 1-13 start operation on 1st Oct 2018, 235 buses are in operation)
13. New bus depot operation (*starting in Feb 2019*) and completion of stepwise implementation of Phase 2 (*Feb 2019*)
14. Monitoring of Phase 2 operation plan (*On-going*)
15. Implementation of Capacity Assessment Survey (*June 2019*)
16. Review/revision of bus operation plan under non-Korean bus assumption (*July 2019*)
17. Confirmation of suspension of Korean buses operation and modification of bus operation plan (*Aug 2019*)
18. Stepwise implementation of revised Phase 2 (181 buses in operation)
19. Start operation of Bus Operation Management System (BOMS) (*July 2019*)

20. Review of Phase 2 operation and optimization of operational plan through scheduling and drivers' roster (Dec 2019)
21. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (Feb 2020)
22. Integration of scheduled bus and drivers roster in BOMS (Feb 2020)
23. Improvement of operational analysis (based on scheduled bus and drivers roster) through BOMS (Feb 2020)
24. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (Apr and May 2020)
25. Review and examination of bus route improvement under COVID-19 (Sep 2020, Dec 2020)
26. Preparation of bus operation plan/bus fleet deployment plan to resume bus service towards Post COVID-19 pandemic (Sep 2020, Dec 2020)
27. Timetable improvement to resume bus service under COVID-19 (Sep 2020, Dec 2020)
28. Improvement of BOMS and development of timetable database (Sep 2020, Dec 2020)
29. Provision of series of workshops/technical trainings (Jan 2017 – onward) (See **Annex 8: Meeting/Workshop Materials**)

Note that remaining tasks of the Project are confirmed during 4th JCC and further progress of these tasks up to date is summarized in the following section.



Screenshot of Bus Operation and Management System (BOMS)

The activities for **Output 2 “Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA”** are undergoing.

1. Baseline survey (Feb – Mar 2017)
 - 1) Interview survey to bus fleet and large vehicle maintenance operators
 - 2) Interview survey to driver/mechanics license and vehicle inspection system
 - 3) Condition survey of bus maintenance and management at existing bus

terminals

2. Review on maintenance plan and maintenance equipment for Japan grant-aid bus (*Mar 2017*)
3. Site visit of proposed bus depot (*Feb and May 2017*)
4. Review on specification of bus fleet and equipment for maintenance of Japan grant-aid bus (*Jun 2017*)
5. Review on maintenance condition of Chinese bus with bus dealer (*Jun 2017*)
6. Study on bus maintenance plan, recruitment of bus maintenance mechanics, training plan for maintenance mechanics of CBA (*Jun 2017*)
7. Monitoring of operation, inspection and maintenance of Chinese bus (*Nov 2017 – Mar 2018*)
8. Assistance for recruitment of bus maintenance mechanics (*Nov 2017 – Mar 2018*)
9. Preparation of daily/weekly/monthly work sheets (*Nov 2017*)
10. Recruitment of Chief Mechanic (*April 2018*)
11. Recruitment of 18 Mechanics (*by May 2018*)
12. Preparation of Bus Inspection and Management Manual (by the supplier under Japan's Grant Aid)
13. Initial inspection of Japanese buses (*Aug – Nov 2018*)
14. Maintenance of initial defects of Japanese buses (*Aug 2018 – onward*)
15. Implementation of periodical inspection and maintenance (5,000km initial inspection and oil change) (*Sep 2018 – onward*)
16. New bus depot operation (*from Feb 2019*) and set-up of inspection and maintenance office/storage
17. Implementation of Capacity Assessment Survey (*June 2019*)
18. Development of training video for bus inspection and maintenance (*Oct 2019*)
19. Dissemination of training video and training for bus inspection and maintenance (*Nov 2019*)
20. Integration of fleet management system into BOMS (*Jan 2020*)
21. Improvement of fleet management analysis through BOMS (*Feb 2020*)
22. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (*Apr and May 2020*)
23. Online monitoring of inspection and maintenance works (*May 2020 onwards*)
24. Development of database on regular inspection and maintenance records (*May 2020 onward*)
25. Improvement of BOMS and development of inspection and maintenance database (*May 2020 onward*)
26. Development of mechanic staff training video under COVID-19 pandemic (*May 2020 onward*)

27. Discussion on enhanced mechanics capacity under collaboration with NPIC and COVID-19 countermeasures (Oct 2020 onward)
28. Preparation of procurement of maintenance tools and equipment for collaboration with NPIC and COVID-19 countermeasures (Dec 2020 onward)
29. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)

Note that remaining tasks of the Project are confirmed during 4th JCC and further progress of these tasks up to date is summarized in the following section.

The activities for **Output 3 “Establishment of Training System of Drivers/Conductors and Management System of Safety Driving and Labour”** are undergoing.

1. Baseline survey (*July 2017*)
 - 1) Interview survey to driver/mechanics license
 - 2) Interview survey to drivers/conductors/dispatchers
 - 3) On-board survey on drivers/conductors and driving skills
 - 4) Site visit to bus terminus and condition survey of terminus facilities
2. Data collection/analysis of accidents of bus by Bus Line (*Sep 2017*)
3. Study of safety management system and drivers/conductors training in Japan (*July 2017*)
4. Participate in intensive training course organized by Eagle Bus Corp. (*Nov 2017*)
5. Recruitment/training to drivers for 98 Chinese buses (*Aug – Nov 2017*)
6. Review of recruitment/training for bus drivers/conductors for Phase 1 (*Nov 2017*)
7. Monitoring on accidents of bus (*Sep 2017 onward*)
8. Preparation of Safety Driving Manual and training on safety driving (*Feb 2018*)
9. Preparation of Driver’s training material (*Aug 2018*) (under cooperation with the supplier under Japan’s Grant Aid)
10. Recruitment/training of bus drivers for 80 Japanese buses (*May to Oct 2018*)
11. Deployment of driver and fleet for Phase 2 operation plan (*Sep 2018*)
12. Intensive training for selected reckless drivers (*Dec 2018*)
13. Recruitment/training for female driver(s) (*on-going*)
14. Implementation of Capacity Assessment Survey (*June 2019*)
15. Revision of drivers’ assignment schedule, following revised operation plan (*Aug 2019*)
16. Retirement recommendation and negotiation for reckless drivers (*Sep - Oct 2019*)
17. Development of training video for safety driving (*Nov 2019*)
18. Dissemination of training video and training for safety driving (*Nov 2019*)
19. Review of Phase 2 operation and optimization of operational plan through

- scheduling and drivers' roster (*Dec 2019*)
20. Pilot implementation of scheduled bus and drivers roster along Line 1B and Line 5A (*Feb 2020*)
 21. Improvement of driver's management system (based on scheduled bus and drivers roster) through BOMS (*Suspended due to temporary termination of City bus operation*)
 22. Procurement of Alcohol Detector (*Ditto*)
 23. Monitoring of fleet and driver deployment plan and operation (*Ditto*)
 24. Preparation of staff and passenger safety plan under COVID-19 pandemic and technical coordination with MOH/ILO Experts (Apr and May 2020)
 25. Seminar on Hygiene and Prevention against COVID-19 (May 2020)
 26. Development of drivers and staffs training video under COVID-19 pandemic (August 2020)
 27. Training for Pandemic Bus Operational and Management Guide (Aug 2020)
 28. Procurement of tools and equipment for COVID-19 countermeasures including Hypochlorous acid water generator (Sep 2020)
 29. Handover ceremony of tools and equipment for COVID-19 countermeasures (Sep 2020)
 30. Installation of driver's protection shield (completed in Nov 2020)
 31. Development of time table and driver's roster database under COVID-19 (Sep 2020, Dec 2020)
 32. Improvement of BOMS and development of driver's roster database (Sep 2020, Dec 2020)
 33. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See ***Annex 8: Meeting/Workshop Materials***)

Note that remaining tasks of the Project are confirmed during 4th JCC and further progress of these tasks up to date is summarized in the following section.

The activities for **Output 4 "Improvement of Business Management Capacity of CBA"** are undergoing.

1. Baseline survey (*Sep and Dec 2017*)
 - 1) Data collection of CBA's financial statement
 - 2) Data collection of PPCA's financial statement
 - 3) Interview survey to public enterprises (electricity and water companies)
 - 4) Interview survey to CBA's accounting office
 - 5) Input data collection for BOM model
2. Bus business management (*Sep 2017 to onward*):
 - 1) Data analysis of CBA and PPCA's financial statement
 - 2) Development of BOM model and forecast of revenue/expense/loss

- 3) Cross country study on public bus authority/operator in Asian countries
 - 4) Preliminary study on revenue generation schemes
 - 5) Examination on business plan of company bus
 - 6) Preliminary study on fare policy and subsidy policy
 - 7) Draft decree for fare and subsidy structure
 - 8) Study and refine of BOM model
3. ICT-based management (*May 2017 to onward*):
- 1) Interview to ICT system suppliers/system integrators
 - 2) Preparation of ICT concept plan for bus operation and management
 - 3) Preparation of bidding documents for bus operation and management system (*Nov 2017 – Mar 2018*)
 - 4) Procurement of ICT equipment (Phase 1: GPS and Server) (*Sep 2018*)
 - 5) Procurement of AEON mobile payment system (*Sep 2018*)
 - 6) Official launching ceremony for Bus Location System (*July 2019*)
 - 7) Procurement of ICT equipment/software (Phase 2: Bus Operation Management System: BOMS) (*Dec 2018 – ongoing*)
 - 8) Assistance to integration of bus location system and e-payment system (*Nov 2019*)
 - 9) Improvement of BOMS, including development of KPI, design of Dashboard and reporting system (*Suspended due to temporary termination of City bus operation*)
 - 10) Support CBA to register on Google as public transport operator (registered in July 2020)
 - 11) Update information of bus stop location (May 2020, Nov 2020)
 - 12) Preparation of system design for Google based bus location system (June 2020 onward)
 - 13) Support to develop GTFS data and submit data to Google (Bus facility and operation data) (May 2020 onward)
4. Strengthening of City Bus Authority (*May 2018 to onward*):
- 1) Official request to upgrade the Authority to Public Enterprise by MEF (*May 2018*)
 - 2) Review of existing legislation for State Enterprise and Public Administration Enterprise (*Oct 2018*)
 - 3) Draft legislation for upgrading Public Administration Enterprise (*Jan 2019*)
 - 4) Implementation of Capacity Assessment Survey (June 2019)
5. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)

Note that remaining tasks of the Project are confirmed during 4th JCC and further progress of these tasks up to date is summarized in the following section.

The activities for **Output 5 “Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA”** are undergoing.

1. Baseline survey (*July and Aug 2017*)
 - 1) Data collection of traffic and passenger information
 - 2) Passenger and non-passenger interview survey
2. Review of planned and on-going urban transport projects (*July 2017*)
3. Review of 2014 Urban Transport Master Plan (*July 2017*)
4. Preparation of a concept plan of public transport priority measures (*July 2017*)
5. Preparation of a concept mobility management plan (*Dec 2017*)
6. Preparation of bus depot layout plan (*May – Aug 2017*)
7. Approval of bus depot design by Governor (*Dec 2017*)
8. Preparation of bus color design (*Dec 2017*)
9. Technical advice on bus depot design (*Jan - Feb 2018*)
10. Examination and discussion on Public transport priority measures (*Jan - Feb 2018*)
11. Implementation plan on mobility management workshop (*Mar 2018*)
12. Implementation plan on public transport priority measures (*Mar 2018*)
13. Implementation of series of dissemination campaign (*May – June 2018*)
14. Monitoring of bus depot development (*Aug 2018 – Jan 2019*)
15. Monitoring of bus facility development (*Aug 2018 – Jan 2019*)
16. Preparation of Design Guides (*Dec 2017 – onward*)
 - i. Bus Facility Planning and Design Guideline (1st Draft)
 - ii. Mobility Management Planning Guide (1st Draft)
 - iii. Draft Bus Priority Measure Planning Guide (to be drafted)
17. Coordination meetings with ADB project (TA 9503-CAM Supporting Sustainable Integrated Urban Public Transport Development) (*Nov 2018 – onward*)
18. Implementation of bus user/ non-bus user survey (*May 2019*)
19. Action plan on mobility management (*On-going*)
 - i. Bus map review and revision (*Feb 2019*)
 - ii. Monitoring bus facilities condition (*Feb 2019 – onward*)
 - iii. Preparation of mobility management action plan (*Feb 2019 – onward*)
 - iv. Provision of bus trial/special shuttle service as part of bus dissemination campaign (e.g., Tanabata Festival, Japan Movie Festival, Japan Scholarship Event) (*Feb 2019 – onward*)
 - v. Coordination with Tsukuba Univ for mobility management (*Sep 2019 – onward*)
 - vi. Mobility Management Survey with Tsukuba Univ (*Dec 2019*)
 - vii. Preparation of dissemination campaign for school (*Jan 2020*)
 - viii. Preparation of test user and dissemination campaign for the pilot project (*Jan*)

2020)

- ix. Bus map review and revision (*Jan 2020*)
 - x. Revision of mobility management plan as part of COVID-19 countermeasures (*July 2020*)
 - xi. Preparation of public announcement materials for restoration of City bus (*July to Sep 2020*)
 - xii. Development of PR videos for COVID-19 countermeasures as well as restoration of City bus (*July to Nov 2020*)
 - xiii. Online public opinion survey (*Nov 2020*)
 - xiv. Development of PR material (Human story) as COVID-19 countermeasures (*Dec 2020 onwards*)
 - xv. Examination of introduction of “Smart bus shelter” under SMART JUMP scheme by MLIT (*On-going*)
 - xvi. Preparation of COVID-19 infection prevention measures using QR codes
 - xvii. Social contribution at the time of the spread of Covid-19 infection using bus fleets (medical personnel, airport passenger transportation)
- 20. Action plan on public transport priority measures (*On-going*)**
- i. Coordination meeting with a traffic control supplier on PTPS (*April 2019*)
 - ii. Set-up WG (Working Group) for Pilot Project (*July 2019*)
 - iii. Organize a series of WGs (*July 2019 – onwards*)
 - iv. Planning action plan on bus priority measures and Pilot Project (*July 2019*)
 - v. Approval of contents and scheduled of Pilot Project by Governor of PPCA (*July 2019*)
 - vi. Planning stakeholder management plan for Pilot Project (*Sep 2019*)
 - vii. Organize a dissemination campaign for Pilot Project at 4 Khans (*Oct 2019*)
 - viii. Preparation of concept design of the Rapid Bus (*Jan 2020*)
 - ix. Preparation of the pilot Bus Priority Signal (*Jan 2020*)
 - x. Preparation of the pilot e-Bike Sharing (Suspended due to temporary termination of City bus operation)
 - xi. Implementation of dissemination campaign for pilot projects (Suspended due to temporary termination of City bus operation)
 - xii. Preparation of design standard for bus priority lane (*March to July 2020*)
 - xiii. Examination of BOQ and cost estimate for bus priority lane (*July 2020*)
 - xiv. Preparation of enhanced signal operation plan (*May 2020*)
 - xv. Procurement of router for enhanced operational network (*Ongoing*)
 - xvi. Coordination with “SMART JUMP” by MLIT (*Jan. 2021 onward*)
- 21. Implementation of Capacity Assessment Survey (*June 2019*)**
- 22. Provision of series of workshops/technical trainings (*Jan 2017 – onward*) (See **Annex 8: Meeting/Workshop Materials**)**

Note that remaining tasks of the Project are confirmed during 4th JCC and further progress of these tasks up to date is summarized in the following section.



Screenshot of Mobile Application for bus location System

1.3. Remaining Tasks and Progress of these Tasks

Output	Activities	Remaining Sub-activities	Progress made during May 2021 and Dec 2021
<p>1. Improvement of Bus Operation Capacity of CBA</p>	<p>1.1 To implement training for bus operation</p>	<p>I. (OJT) M. (Capacity assessment)</p>	<p>I. Preparation/implementation of bus scheduling/bus deployment/driver roster under 30% operation scenario (Done)</p>
	<p>1.2 To develop bus operation manual and implement OJT for practice</p>	<p>I5. Finalization of Operation Manual</p>	<p>Nil</p>
	<p>1.3 To establish bus operation system and develop the operation plan</p>	<p>I6. Completion of development of BOMS M3. Review of operation of BOMS and its design improvement on scheduling</p>	<p>I6. Follow up meeting with BOMS supplier for development of GTFIS data (On-going) I6. Follow up meeting with City Bus App supplier for O&M of App (Done) I6. Input operation data (bus scheduling/bus deployment/driver roster) into BOMS (Awaiting for approval)</p>
<p>1.4 To analyze the bus operation data and improve the operation plan</p>	<p>P1. Bus operation plan/bus fleet deployment plan under COVID-19 pandemic P2 Improved bus operation plan/bus fleet deployment plan under post-COVID 19 P3 3-5 year bus operation plan/bus fleet deployment plan under mid-term business plan I1. Approval of operation plan/bus fleet deployment plan under COVID-19 I2. Stepwise operation under COVID-19 I3. Approval of operation plan/bus fleet deployment plan under post COVID-19 I4. Full scale and stepwise operation after COVID-19 M1. Review of operation under COVID-19 and optimized operational plan/timetable thru operation of BOMS M2. Review of full scale operation and optimized operation plan//timetable thru operation of BOMS</p>	<p>P1. Preparation of bus operation plan under different operation scenarios in COVID-19 pandemic (Done) P1. Follow up meeting with Deputy Governor to discuss operational scenarios under COVID-19 (Done) I1. Confirmation of 30% bus operation scenario (60 buses) as optimum plan by Deputy Governor (Done) I2. Resumption of operation under 30% scenario (60 buses) along Line 1A/2/3/4A/4B on 2nd Nov (Done)</p>	

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The Project for Improvement of Public Bus Operation in Phnom Penh

Output	Activities	Remaining Sub-activities	Progress made during May 2021 and Dec 2021
2. Improvement of Bus Vehicle Inspection/Main tenance Capacity of CBA	<p>2.1 To develop bus vehicle inspection and maintenance manual</p> <p>2.2 To implement training for bus vehicle inspection/maintenance and OJT for practice</p>	<p>P1. Finalization of Bus Inspection and Management Manual</p> <p>P2. Finalization of mechanics training materials</p> <p>P3. 3-5 year bus fleet operation and management plan under mid-term business plan</p> <p>I1. Implementation of periodical inspection and maintenance</p> <p>I2. Development of database on periodic inspection and maintenance records</p> <p>I3. Improvement of BOMS on bus fleet management</p> <p>M1. Review of operation of BOMS and its design improvement on fleet management</p> <p>M2. Evaluation on intensive and short-term trainings</p> <p>I. (OJT)</p> <p>M. (Capacity Assessment)</p>	<p>Nil</p> <p>I1. Monitoring of periodic inspection and maintenance (On-going)</p> <p>I2. Monitoring of database development on periodic maintenance (On-going)</p> <p>I. Monitoring of inspection and maintenance works (On-going)</p> <p>I. Preparation/implementation of bus scheduling/bus deployment/driver roster under 30% operation scenario (Done)</p>
3. Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labour	<p>3.1 To develop driver training manual</p> <p>3.3 To implement TOT of drivers</p> <p>3.4 To implement training for existing and newly employed drivers</p>	<p>P1. Finalization of Drivers Management Manual</p> <p>I1. Finalization of Driver Training Materials</p> <p>I. (OJT)</p> <p>M. (Capacity Assessment)</p> <p>I2. Intensive training for safety driving and procedures during COVID-19</p> <p>I3. Full scale intensive training for safety driving during post COVID-19</p>	<p>I1. Review and revision of drivers training materials under COVID-19 (Done)</p> <p>I. TOT for safety driving and procedures during COVID-19 (Done)</p> <p>I2. Half-day intensive training for safety driving and procedures during COVID-19 (Done)</p>

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Output	Activities	Remaining Sub-activities	Progress made during May 2021 and Dec 2021
	<p>3.7 To establish the safety management system for the drivers and conductors and implement OJT for practice</p>	<p>P2. Driver/staff deployment plan under bus operation plan during COVID-19 pandemic P3. Roster development to resume bus service under COVID-19 P4 Driver/staff deployment plan under improved bus operation plan during port-COVID 19 P5 3-5 year driver/staff deployment plan under mid-term business plan I4. Deployment of drivers/staffs under COVID-19 bus operation I5. Deployment of drivers/staffs for post COVID-19 operation M1. Monitoring on accidents of bus during COVID-19/post COVID-19 M2. Monitoring on driver/staff deployment and optimized development plan thru operation of BOMS M3. Review of operation of BOMS and its design improvement on driver/staff roster</p>	<p>P2/P3. Preparation of bus scheduling/bus deployment/driver roster under 30% operation scenario (Done) I4. Operation for essential needs (e.g., transporting international passengers and COVID-19 patients) (On-going) I4. Preparation of driver deployment plan under 30% operation scenarios (Done) I4. Implementation of bus scheduling/bus deployment/driver roster under 30% operation scenario (Done) M1. Monitoring of bus related accidents (On-going) M2. Input data of bus scheduling/bus deployment/driver roster under 30% operation scenario into BOMS (Awaiting for approval)</p>
<p>4. Improvement of Business Management Capacity of CBA</p>	<p>4.1 To implement training for financial accounting and management accounting 4.2 To collect and analyze operation cost/expenses and passenger data</p>	<p>I (OJT) M (Capacity assessment)</p> <p>I1. Finalization of BOM model M1. Review of expense/revenue of bus operation during COVID-19 and post COVID-19</p>	<p>Nil</p> <p>M1. Review of daily passengers under 30% operation scenario (On-going)</p>
	<p>4.3 To implement market research in bus operation area Plan</p>	<p>P1. Online passenger and non-passenger survey P2. Preparation of revenue generation plan I2. Implementation of pilot revenue generation scheme M2. Monitoring and evaluation of revenue generation</p>	<p>P1. Preparation of passenger and non-passenger survey (Done)</p>

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The Project for Improvement of Public Bus Operation in Phnom Penh

Output	Activities	Remaining Sub-activities	Progress made during May 2021 and Dec 2021
		scheme	
5. Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA	4.4 To formulate a business plan including budget and accounting management	P3. Preparation of 3-5 year mid-term business plan I3. Finalization and approval of mid-term business plan	P3. Preparation of sub-decree for transforming CBA into Public Administration Enterprise (On-going)
	4.5 To review and examine the bus fare system and subsidy policy Plan	I4. Finalization and approval of fare/subsidy policy and related decree	Nil
	4.6 To provide technical support for introduction of cashless ticketing system for fare collection	P4. Assist to introduce Bakong as part of e-ticketing system I5. Assist to implement pilot project of Bakong	P4. Discussion with JICA Study Team (Done)
	5.1 To implement training for traffic management	I (OJT) M (Capacity Assessment)	Nil
	5.2 To examine traffic management and safety measures on the bus routes	P1. Finalization of Bus Priority Measure Planning Guide P2. Finalization of design of pilot project: i) Rapid Bus Project, ii) Shared e-bike Project, iii) Smart Bus Shelter Project M1. Monitoring and evaluation of pilot project(s)	P2. Assist for approval on design of Shared e-bike Project (Done) P2. Design of Smart Bus Shelter under MLIT (On-going)
	5.4 To implement pilot projects and social experiments for the proposed traffic management	P3. Preparation of IP of pilot project: i) Rapid Bus Project, ii) Shared e-bike Project, iii) Smart Bus Shelter Project I1. Implementation of pilot project: i) Bus Priority Signal Project, ii) Rapid Bus Project, iii) Shared e-bike Project, iv) Smart Bus Shelter Project	P3. Coordination with Shared e-bike Project under private fund initiative (On-going) P3. Coordination with Smart Bus Shelter Project under MLIT (On-going) P3. Finalization of F/S on Rapid Bus Project under ADB

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The Project for Improvement of Public Bus Operation in Phnom Penh

Output	Activities	Remaining Sub-activities	Progress made during May 2021 and Dec 2021
	measures		(Done) I1. Preparation and implementation of pilot Shared e-bike Project at selected bus stops (On-going)
	5.5 To provide technical support on development of bus-related facilities	P4. Finalization of Bus Facility Planning and Design Guide I2. Improvement of Bus facilities (e.g., Bus shelter)	P4. Study on procurement plan and assistance to preparation on procurement documents for Bus Priority Lane (On-going) I2. Improvement of sheltered bus stops (On-going)
	5.6 To introduce bus information and location system	P5. Development of Google-based GTFS data I3. Upgrading Location System to Google Search	P5. Follow up meeting with BOMS supplier for development of GTFS data (On-going) P5. Design of Bus Location System under MLIT's Smart Bus Shelter Project (On-going)
	5.7 To implement workshops for mobility management to promote modal shift	P6. Finalization of Mobility Management Planning Guide P7. Finalization of Mobility Management materials I4. Implementation of pilot project: i) Bus map/Bus information, ii) PR activities (poster, banner, radio, PR video), iii) Workshop/Campaign (School dissemination, travel blending)	I4. Preparation and implementation of pilot PR activities (poster, banner, radio, PR video) (Done) I4. Preparation of workshop/PR campaign (school dissemination) (Done)

Note 1: P: Planning tasks, I: Implementing tasks, M: Monitoring tasks

Note 2: Tasks in red highlights are those cannot be completed without resumption of the bus operation

1.4. Monitoring Indicators

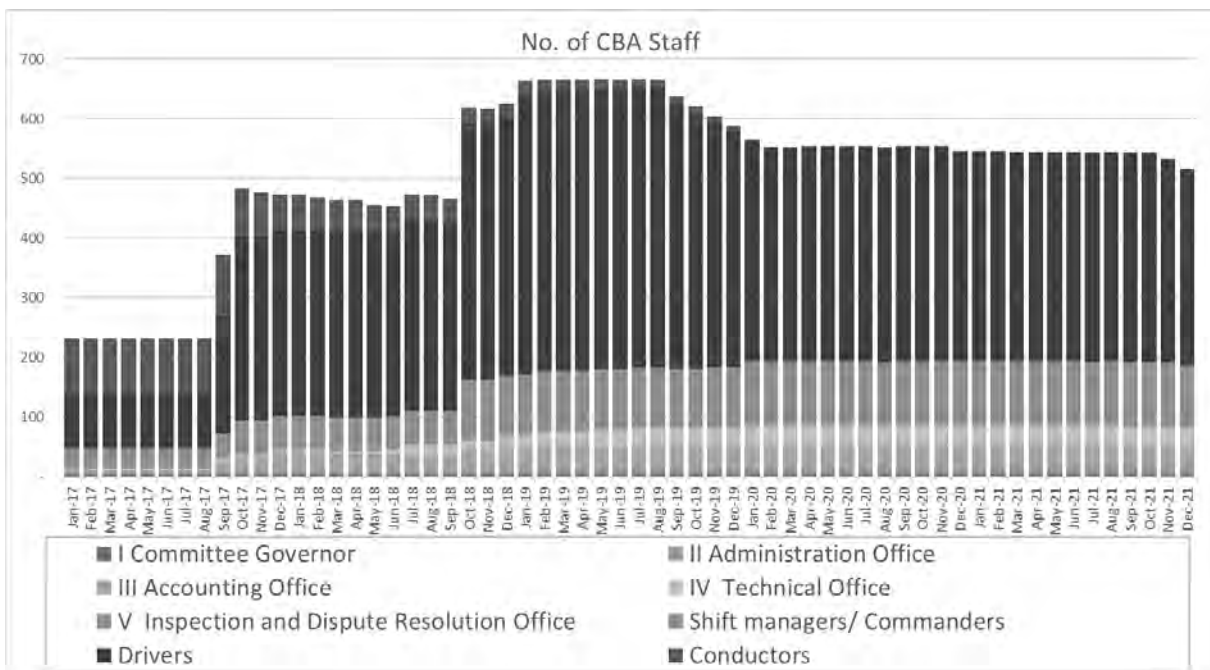
The part of monitoring indicators to evaluate the performance of the Project is tabulated/figured from next section.

1.4.1. Output 1: Improvement of Bus Operation Capacity of CBA

(1) No. of CBA staff by section

Looking at the overall situation, the number of drivers has been decreased since August 2019, due to the demolition of 54 second-hand Korean buses and accordingly, CBA optimized the number of drivers/conductors. The CBA has been reducing the number of conductors and by January 2020 all the conductors are either dismissed or transferred to other sections in CBA.

As of Dec 2021, the total number of employees of CBA is 516, including 329 bus drivers. Although bus operation was suspended between March 2020 and October 2021, the number of CBA staff was adequately secured for preparation for the resumption of bus service. As a result, bus service resumed on November 2, 2021 with limited 4 routes and 60 buses in operation. Both preparation works for the bus operation resumption and the sufficient number of staffs in employment contribute to allowing CBA for a prompt action even the instruction of bus operation resumption was given by the Governor on November 1.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1(1) Number of CBA Staff

Table 1.3.1 (1) Number of CBA Staff by Section

	Committee Governor	Administration Office	Accounting Office	Technical Office	Inspection and Dispute Resolution Office	Shift managers/ Commanders	Drivers	Conductors	Total
Jan-19	3	6	37	24	6	95	470	22	663
Feb-19	3	10	38	25	6	95	470	18	665
Mar-19	3	11	38	25	6	95	469	18	665
Apr-19	3	11	38	25	6	95	469	18	665
May-19	3	13	34	29	6	95	470	16	666
Jun-19	3	13	34	29	6	95	470	15	665
Jul-19	3	13	34	32	6	95	470	13	666
Aug-19	3	13	34	32	6	95	470	12	665
Sep-19	3	13	34	33	6	92	444	12	637
Oct-19	3	13	34	33	6	92	428	12	621
Nov-19	3	13	33	34	6	95	409	11	604
Dec-19	3	13	33	34	6	95	395	8	587
Jan-20	3	13	33	36	13	95	372	0	565
Feb-20	3	14	33	35	13	95	359	0	552
Mar-20	3	14	33	35	13	95	358	0	551
Apr-20	3	14	33	35	13	95	361	0	554
May-20	3	14	33	35	13	95	361	0	554
Jun-20	3	14	33	35	13	95	360	0	553
Jul-20	3	14	33	35	13	95	360	0	553
Aug-20	3	14	33	35	13	93	360	0	551
Sep-20	3	14	33	35	13	95	360	0	553
Oct-20	3	14	33	35	13	95	360	0	553
Nov-20	3	14	33	35	13	95	360	0	553
Dec-20	3	14	33	35	13	95	352	0	545
Jan-21	3	14	33	35	13	95	352	0	545
Feb-21	3	15	33	35	13	95	351	0	545
Mar-21	3	15	32	35	13	95	351	0	544
Apr-21	3	15	32	35	13	95	351	0	544
May-21	3	15	32	35	13	95	351	0	544
Jun-21	3	15	32	35	13	95	351	0	544
Jul-21	3	15	32	35	13	94	351	0	543
Aug-21	3	15	32	35	13	95	351	0	544
Sep-21	3	15	32	34	13	95	351	0	543
Oct-21	3	15	32	34	13	95	351	0	543
Nov-21	3	15	32	34	13	94	342	0	533
Dec-21	3	15	32	34	13	90	329	0	516

Source: prepared by JICA Expert based on data from CBA

(2) No of bus lines and fleets

The number of bus routes operated by CBA was 3 at the beginning of the project. Since then, the bus route has been steadily expanded to 5 routes in September 2017, 8 routes in November 2017, and 13 routes in October 2018. The number of buses owned by CBA was once 57 Korean buses at the beginning of the project. Since then, the number of buses has increased to 235 in March 2019, including 98 Chinese buses and 80 Japanese buses. In September 2019, CBA decided to suspend the use of 54 second-hand Korean buses, due to the high operation and maintenance cost of these Korean buses and CBA owns 181 buses as of December 2020 (Note that around 10 buses are used for essential workers and needs for COVID-19 and which are excluded from the below figure).

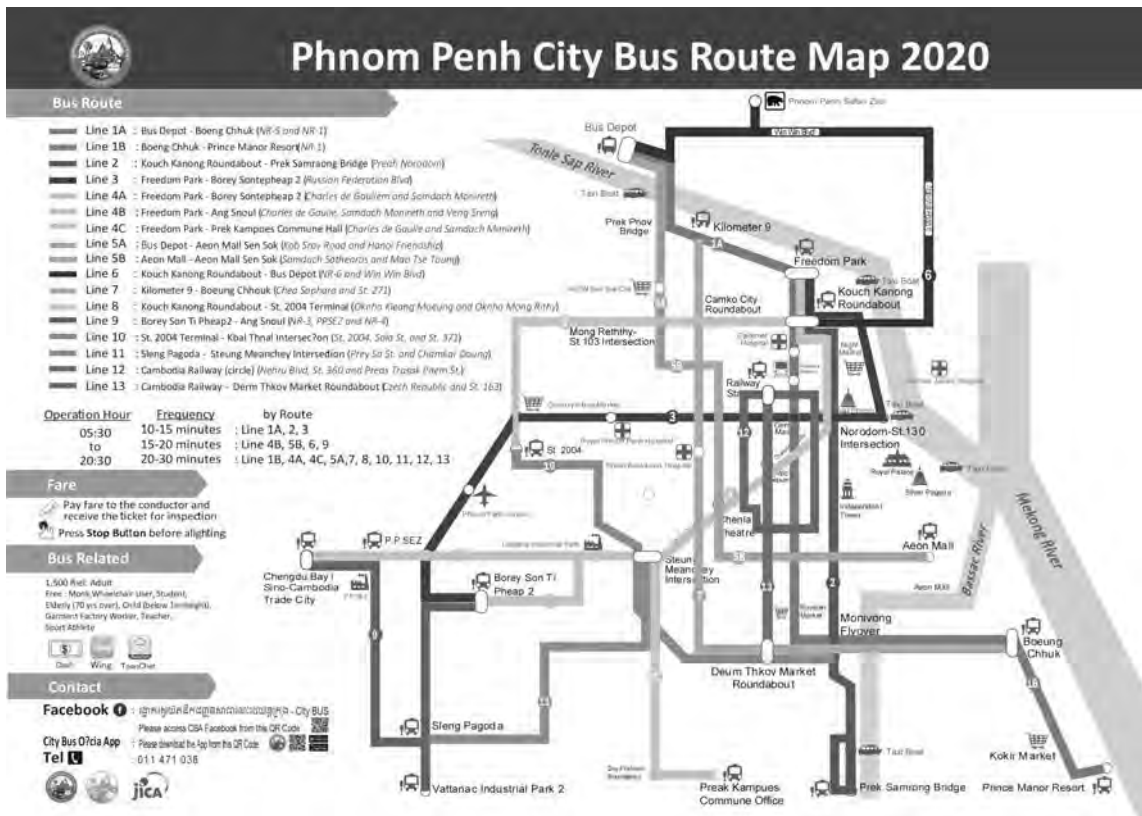


Figure 1.3.1 (2) CBA Bus Operation Route 2020

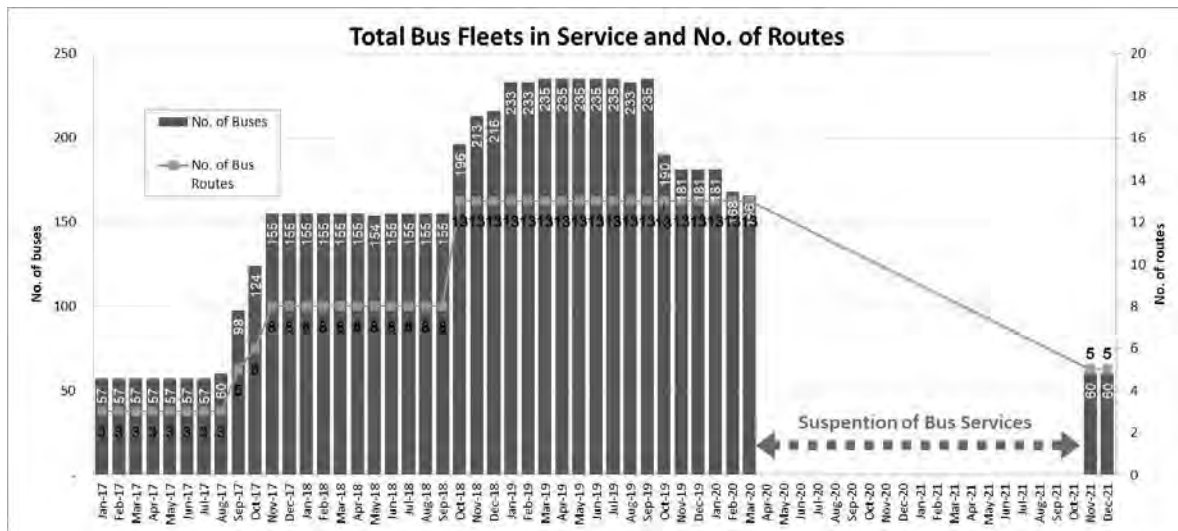


Figure 1.3.1 (3) CBA Bus Operation Route 2021

Bus service was resumed on November 2, 2021, and as of December 2021, 4 routes (Line 1A, 2, 3, 4A/B) of the 13 routes are in operation with 60 buses in service. Separately, to meet the travel needs for essential workers, CBA also operates 12 buses for medical professionals.

Table 1.3.1 (2) Number of Buses in Service (as of Dec 2021)

	Total Bus fleet by type (based on BOMS)	Bus used for CBA regular operation	Bus used for essential workers
Japanese bus	80	33	0
Korea	3	0	0
China	98	27	12
Total	181	60	12



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1 (3) Number of CBA Buses and Routes

(3) Summary of bus operation service level

The missed trip rate has significantly improved from an average of 30% in 2019 to below 20% in January to March 2020. The main contributor to this improved missed trip rate is the planned repair and maintenance (which increases operational rate of the bus fleets) as discussed in the next section.

Since bus service resumed on November 2, 2021, minus bus operation ratio is recorded since actual number of bus trips exceeds proposed number of trips estimated based on the scheduled operational plan. One of the reasons for this is improved travel speed due to lowered number of traffic caused by COVID-19 and another reason is termination of one of the terminals which contributes to reducing the idol time of the bus operation.

Table 1.3.1 (3) Bus Service Level (2018-2021)

Year 2021

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-21	-	-	-	-	-	-	-	-
Feb-21	-	-	-	-	-	-	-	-
Mar-21	-	-	-	-	-	-	-	-
Apr-21	-	-	-	-	-	-	-	-
May-21	-	-	-	-	-	-	-	-
Jun-21	-	-	-	-	-	-	-	-
Jul-21	-	-	-	-	-	-	-	-
Aug-21	-	-	-	-	-	-	-	-
Sep-21	-	-	-	-	-	-	-	-
Oct-21	-	-	-	-	-	-	-	-
Nov-21	5	60	147	199.0	-35.4%	9,068	272,049	16.9
Dec-21	5	60	147	195.0	-32.7%	8,907	267,210	16.9
Total in 2021	5	60	147	197	-34.0%	8,988	539,259	16.9

Source: prepared by JICA Expert based on data from CBA

Note: CBA bus operation during November under trial due to COVID-19 pandemic

Year 2020

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-20	13	181	588	480.0	18.4%	18,105	543,162	11.3
Feb-20	13	168	662	556.5	15.9%	21,602	648,060	12.9
Mar-20	13	166	644	529.0	17.8%	20,471	614,136	15.6
Apr-20	13	-	-	-	-	-	-	-
May-20	13	-	-	-	-	-	-	-
Jun-20	13	-	-	-	-	-	-	-
Jul-20	13	-	-	-	-	-	-	-
Aug-20	13	-	-	-	-	-	-	-
Sep-20	13	-	-	-	-	-	-	-
Oct-20	13	-	-	-	-	-	-	-
Nov-20	13	-	-	-	-	-	-	-
Dec-20	13	-	-	-	-	-	-	-
Total in 2020	13	-	631	522	17.3%	20,060	1,805,358	13.3

Source: prepared by JICA Expert based on data from CBA

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Year 2019

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-19	13	233	839	652.5	22.2%	25,272	758,163	13.7
Feb-19	13	233	870	675.0	22.4%	25,681	770,418	13.7
Mar-19	13	235	889	672.5	24.3%	25,907	777,198	13.8
Apr-19	13	235	853	604.5	29.1%	23,167	695,001	13.7
May-19	13	235	902	626.0	30.6%	23,849	715,464	13.0
Jun-19	13	235	878	605.5	31.0%	22,878	686,337	13.3
Jul-19	13	235	860	573.5	33.3%	21,961	658,839	12.0
Aug-19	13	233	865	524.0	39.4%	19,750	592,488	10.8
Sep-19	13	235	867	519.0	40.1%	20,033	600,993	11.2
Oct-19	13	190	717	452.0	37.0%	16,644	499,326	11.9
Nov-19	13	181	644	482.4	28.0%	17,243	517,293	14.6
Dec-19	13	181	664	500.5	24.6%	18,804	564,123	15.5
Total in 2019	13	181	820	574	30.0%	21,766	7,835,643	13.1

Source: prepared by JICA Expert based on data from CBA and BOMS

Year 2018

Month	Operation							
	No. of Route	Bus Fleet	Expected Trip	Actual Trip	Missed Trip	Bus km per day	Bus km per month	Operation Speed
	(route)	(veh.)	(round-trip/day)	(round-trip/day)	(%)	(km)	(km)	(km/h)
Jan-18	8	155	546	494.5	9.3%	18,235	547,050	14.2
Feb-18	8	155	568	509.0	10.4%	18,818	564,549	14.2
Mar-18	8	155	570	512.5	10.1%	18,928	567,828	14.0
Apr-18	8	155	556	501.5	9.7%	18,678	560,334	15.0
May-18	8	154	545	506.5	7.1%	18,749	562,470	14.1
Jun-18	8	155	549	488.0	11.0%	18,102	543,072	14.2
Jul-18	8	155	557	487.0	12.6%	18,344	550,320	15.0
Aug-18	8	155	592	517.0	12.7%	19,426	582,768	14.1
Sep-18	8	155	572	471.0	17.7%	17,703	531,102	13.5
Oct-18	13	196	740	553.0	25.2%	21,498	644,940	13.8
Nov-18	13	213	755	599.5	20.5%	22,966	688,977	13.3
Dec-18	13	216	777	604.5	22.2%	23,377	701,307	13.7
Total in 2018			610	520	14.8%	19,569	704,471	14.1

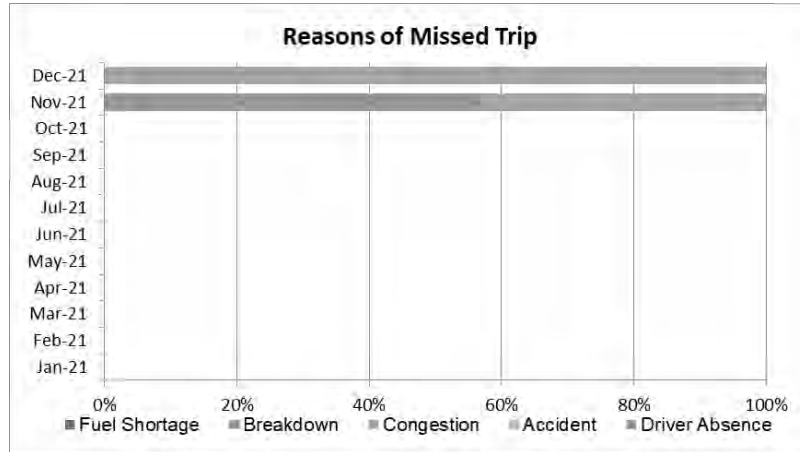
Source: prepared by JICA Expert based on data from CBA

(4) Reasons of missed trip

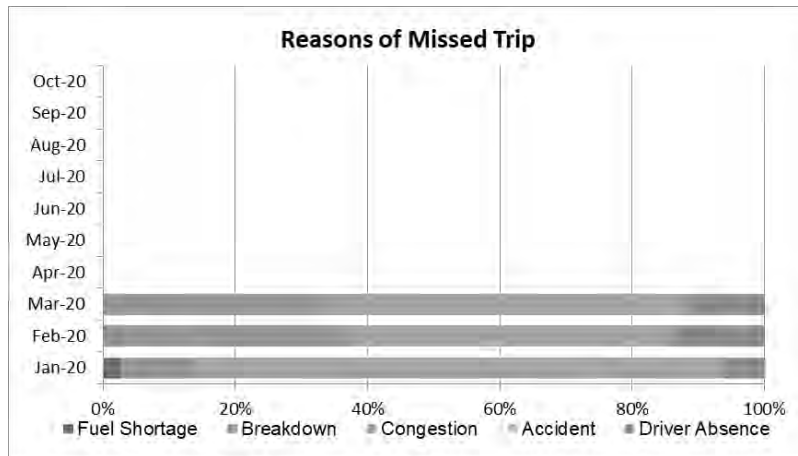
In case of 2020, the most common reason for missed trips recorded by traffic congestion, followed by bus breakdowns/repairs and 80% of missed trips caused by these two reasons. The bus breakdowns/repairs are the top reason for missed trip since the project started and improved and/or planned inspection and maintenance may contribute to reducing the missed trip in 2020.

As observed in the above bus operation ratio, the actual number of bus trips exceeds the proposed number of trips. However, the actual number of bus trips along Line 2 went under the proposed number of trips (at 9% down) and which is caused by traffic congestion and regular repair works.

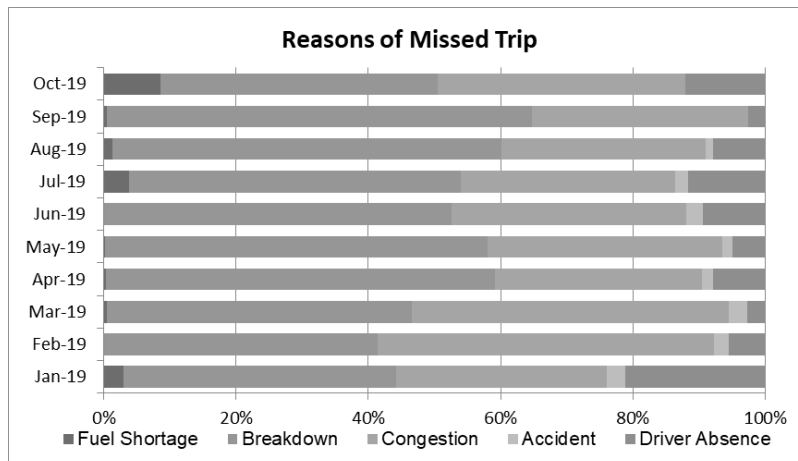
Year 2021



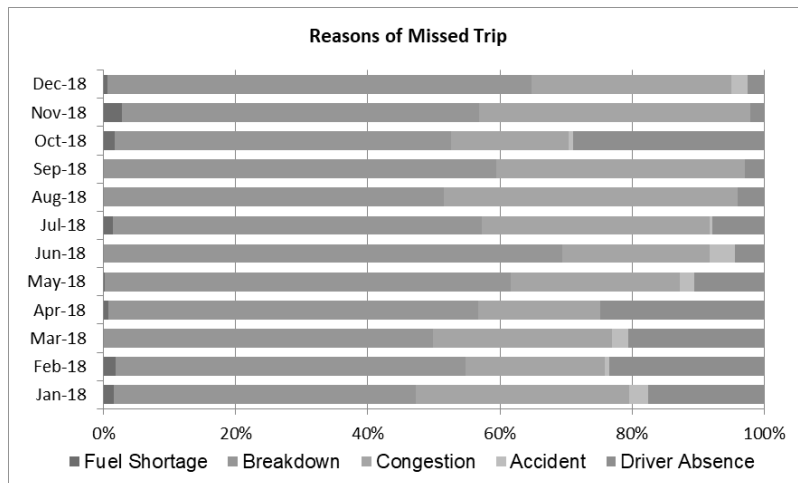
Year 2020



Year 2019



Year 2018



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.1(4) Reason of Missed Trip (2018-2021)

1.4.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

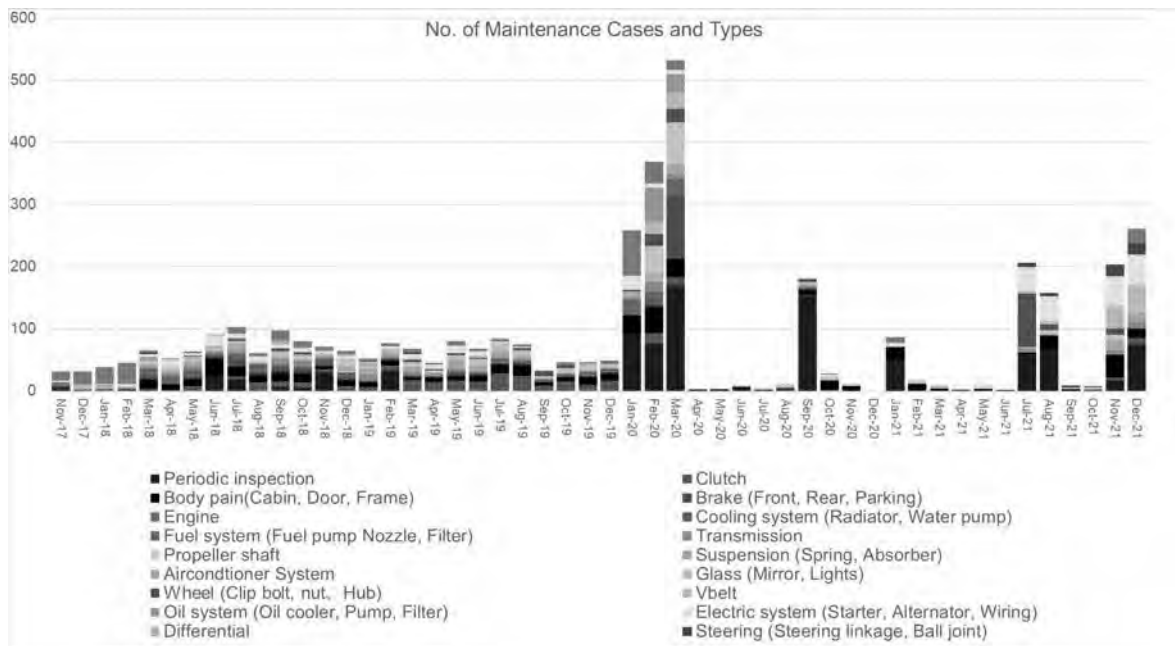
(1) No. of maintenance cases and types

There has been significant increase in the number of cases both inspection and maintenance between January and March 2020. As a result, as observed in the previous section, the number of missed trips due to the breakdown of the bus in operation has decreased significantly in the same period.

From January to March 2020, the number of inspections has increased significantly due to the periodic inspections that are carried out when the mileage reaches 10,000 kilometers. In addition, the reason for the increase in the number of inspections in March 2020 is that it was scheduled to operate as a homecoming bus for Khmer New Year, and a lot of maintenance was carried out as a preliminary preparation.

The number of inspections increased in September 2020 as well, because the CBA was aiming to resume bus service from October 2020, and as a preparation, many inspections and maintenance were carried out.

During the period when the buses are out of service, necessary bus maintenance, such as the six-month regular inspection, has been carried out, and as a result, in January, July and August 2021, there are many regular inspections, and maintenance works derived from the results of regular inspections are carried out. The majority of reasons for “missed trips” in November and December 2021 were due to regular repair works.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.2(1) Number of Maintenance Cases and Maintenance Type (2017-2021)

1.4.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Since March 26, 2020, no new accident-related data is available because all bus operation is suspended due to COVID-19 pandemic until November 1, 2021.

Looking at the overall trend, the number of accidents has been steadily decreasing since 2018. The accident rate per 100,000 km has also decreased to 4.27 in 2018, 3.66 in 2019, and 3.27 in 2020, although there are only data for the three months prior to the suspension of bus service. This may reflect the effect of driver training. However, it should be noted that the accident rate increased to 6.62 in November 2021 when bus service resumed.

Table 1.3.3(1) Summary of Accident Statistics (2018-2021)

Traffic Accident			
Month	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)
Jan-21	-	-	-
Feb-21	-	-	-
Mar-21	-	-	-
Apr-21	-	-	-
May-21	-	-	-
Jun-21	-	-	-
Jul-21	-	-	-
Aug-21	-	-	-
Sep-21	-	-	-
Oct-21	-	-	-
Nov-21	18	6.62	66.7%
Dec-21	14	5.24	21.4%
Total in 2021	32	5.93	44.0%

Monthly average No. off accidents: 16

Traffic Accident			
Month	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)
Jan-20	25	4.60	40.0%
Feb-20	23	3.55	26.1%
Mar-20	11	1.79	45.5%
Total in 2020	59	3.27	37.2%

Monthly average No. off accidents: 19.6

Traffic Accident			
Month	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)
Jan-19	30	3.96	50.0%
Feb-19	21	2.73	28.6%
Mar-19	23	2.96	30.4%
Apr-19	24	3.45	29.2%
May-19	18	2.52	16.7%
Jun-19	18	2.62	27.8%
Jul-19	24	3.64	41.7%
Aug-19	23	3.88	34.8%
Sep-19	18	3.00	27.8%
Oct-19	28	5.61	25.0%
Nov-19	33	6.38	30.3%
Dec-19	27	4.79	25.9%
Total in 2019	287	3.66	30.7%

Monthly average No. off accidents: 23.9

Traffic Accident			
Month	Occurance	Accident rate (all)	CBA driver's mistake
	(cases)	(cases/100,000km)	(% of cases)
Jan-18	17	3.11	-
Feb-18	19	3.37	100%
Mar-18	21	3.70	100%
Apr-18	17	3.03	100%
May-18	16	2.84	100%
Jun-18	23	4.24	100%
Jul-18	25	4.54	75%
Aug-18	21	3.60	100%
Sep-18	29	5.46	40%
Oct-18	23	3.57	100%
Nov-18	43	6.24	33%
Dec-18	47	6.70	75%
Total in 2018	301	4.27	83.9%

Monthly average No. off accidents: 25.0

Source: prepared by JICA Expert based on data from CBA

1.4.4. Output 4: Improvement of Business Management Capacity of CBA

(1) Annual Revenue and Expenditure

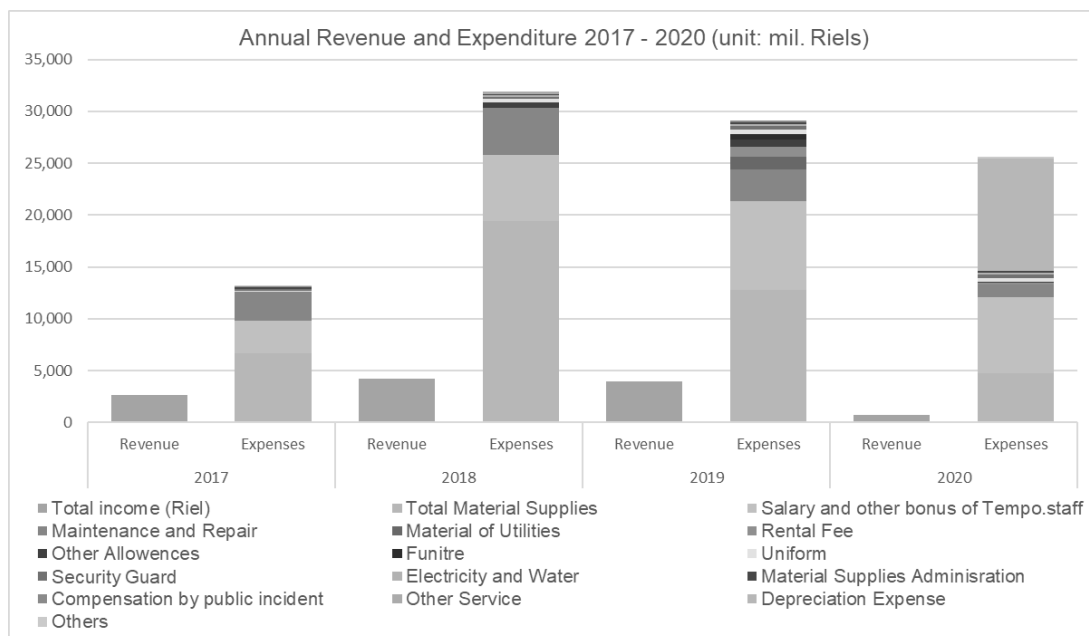
The total expenditure has been significantly increased from 2017 to 2018 and 2019 due to the increase of the bus fleets and expansion of the network and service as well as relocation of the office to the new depot. As a result, the expenditure in 2018 reached 32 billion Riel/annum and around 60% of the

expenditure is channeled for material supplies for the new office. In 2019, the amount for material supplies for the office significantly dropped but the expenditure for staff remuneration increases due to an increase in a number of staffs and the total expenditure reached at 29 billion Riel/annum.

On the other hand, the amount of revenue, mainly from fare collection, remained same in 2019 and reached at 4 billion Riel/annum and therefore, the CBA lost 25 billion Riel (6 million USD) in 2019.

In 2020, CBA revenue dropped sharply to 700 million Riel due to the COVID-19 pandemic stopped all bus services from March 26th 2020. The period from January to March in 2020, when the bus was operating, also decreased compared to the previous year, which is also considered to be the effect of the COVID-19 pandemic. In terms of the CBA expenditure, most of the bus service was suspended in 2020, so expenditure related to bus service decreased significantly. However, due to the recording of depreciation expenses of 11 billion Riel, the total annual expenditure marked 26 billion Riel and does not decrease significantly from the previous year. As a result, the CBA lost 25 billion Riel in 2020.

The overall Revenue and Expenditure data in 2021 will be confirmed in the next Monitoring Sheet as the revenue and expenditure data are available up to October 2021.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (1) Annual Revenue and Expenditure (2017-2020)

(2) Summary of monthly revenue/expense in CBA

Table 1.3.4 (1) Monthly Revenue and Expense (2017-2021)

(mil.Riels)

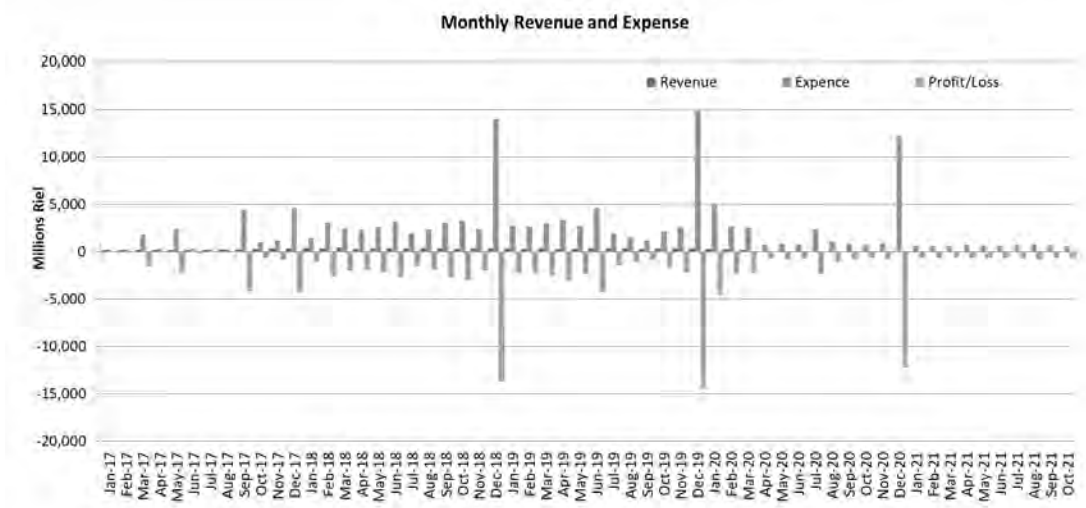
Revenue & Cost 2017				Revenue & Cost 2018			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-17	184	211	-27	Jan-18	371	1,441	-1,070
Feb-17	166	195	-30	Feb-18	348	3,018	-2,670
Mar-17	182	1,721	-1,538	Mar-18	397	2,442	-2,045
Apr-17	143	289	-146	Apr-18	275	2,264	-1,989
May-17	175	2,387	-2,212	May-18	356	2,527	-2,171
Jun-17	165	376	-211	Jun-18	357	3,069	-2,712
Jul-17	167	198	-31	Jul-18	351	1,897	-1,546
Aug-17	229	234	-4	Aug-18	368	2,266	-1,898
Sep-17	242	4,421	-4,179	Sep-18	344	3,033	-2,689
Oct-17	313	996	-683	Oct-18	300	3,262	-2,962
Nov-17	337	1,189	-852	Nov-18	368	2,377	-2,008
Dec-17	335	955	-620	Dec-18	368	4,080	-3,712
Total 2017	2,638	13,171	-10,532	Total 2018	4,202	31,677	-27,474

Revenue & Cost 2019				Revenue & Cost 2020			
Month	Revenue	Expense	Profit/Loss	Month	Revenue	Expense	Profit/Loss
Jan-19	347	2,662	-2,316	Jan-20	278	2,540	-2,262
Feb-19	309	2,599	-2,291	Feb-20	251	2,386	-2,135
Mar-19	358	2,940	-2,582	Mar-20	171	2,186	-2,015
Apr-19	247	3,334	-3,087	Apr-20	-	731	-731
May-19	324	2,713	-2,389	May-20	-	798	-798
Jun-19	359	4,583	-4,224	Jun-20	-	668	-668
Jul-19	354	1,872	-1,518	Jul-20	-	2,316	-2,316
Aug-19	338	1,505	-1,167	Aug-20	-	988	-988
Sep-19	285	1,156	-871	Sep-20	-	691	-691
Oct-19	364	2,043	-1,679	Oct-20	-	657	-657
Nov-19	336	2,580	-2,244	Nov-20	-	727	-727
Dec-19	340	1,174	-834	Dec-20	-	11,628	-11,628
Total 2019	3,960	29,162	-25,202	Total 2020	701	26,316	-25,616

Revenue & Cost 2021			
Month	Revenue	Expense	Profit/Loss
Jan-21	-	658	-658
Feb-21	-	655	-655
Mar-21	-	655	-655
Apr-21	-	672	-672
May-21	-	644	-644
Jun-21	-	645	-645
Jul-21	-	713	-713
Aug-21	-	802	-802
Sep-21	-	671	-671
Oct-21	-	642	-642
Nov-21	28	N/A	N/A
Dec-21	27	N/A	N/A
Total 2021	55	6757	N/A

Note: Revenue and Expenditure data for 2021 is tentative numbers as of 15 Jan. 2022

Source: prepared by JICA Expert based on data from CBA



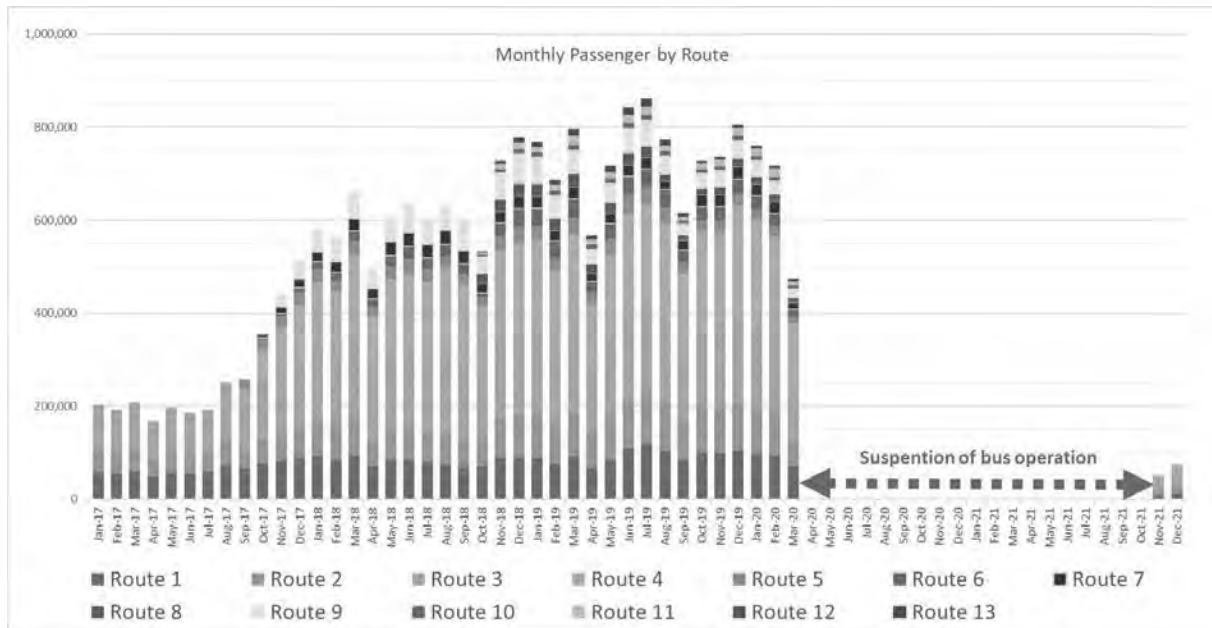
Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (2) Monthly Revenue and Expense 2017- Oct. 2021

(3) No. of passengers by route

The Routes 1 to 4 run along the radial and trunk road network and collect more than 70% of the total passengers and this tendency remains same from when the CBA expanded the network from 8 to 13 routes. Due to restriction in social and economic activities and travel caused by the COVID-19 pandemic as well as the temporary termination of City bus service, the number of passengers significantly reduced in March 2020.

CBA resumed bus service on November 2, 2021. Due to the limited number of routes and buses, the number of passengers in November 2021 was much lower than before the pandemic. Comparing the number of passengers on Line 1 to 4, the number of passengers in February 2020 was 563,889, while the number of passengers in November 2021 was 50,899 and December 2021 was 76,264. The rate of change between Before COVID-19 pandemic and after resume bus operation is -91% in November 2021 and -86% in December 2021.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (3) Monthly Passengers by Routes 2017-2021

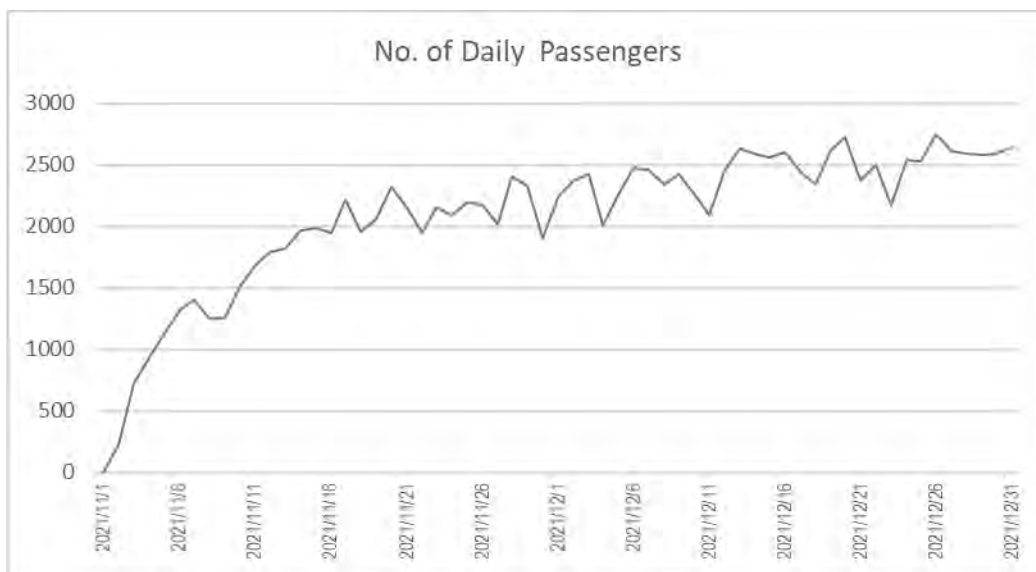
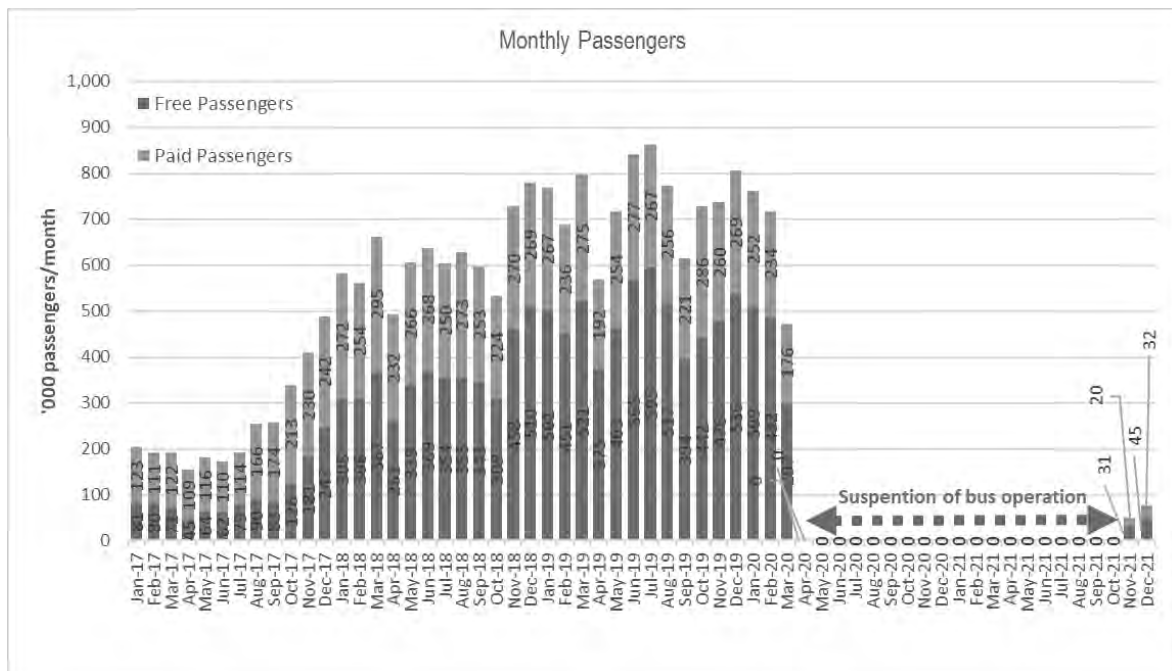


Figure 1.3.4 (4) Daily Passengers since Bus Operation Resumed

(4) No. of free/paid passenger

As PM announced free buses for factory workers in the public meeting in May 2017, the CBA has been providing free service for elderly people, students and factory workers. Though the number of paid passengers remains nearly same since the bus network was expanded from 3 lines to 8 line and from 8 lines to 13 lines, the number of free riders continue to increase and 60 - 70% of the bus users are free riders in general. This trend also remains same in November 2021 and December 2022 when bus service resumed.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.4 (4) Monthly Passenger by Type (Free/ Paid)

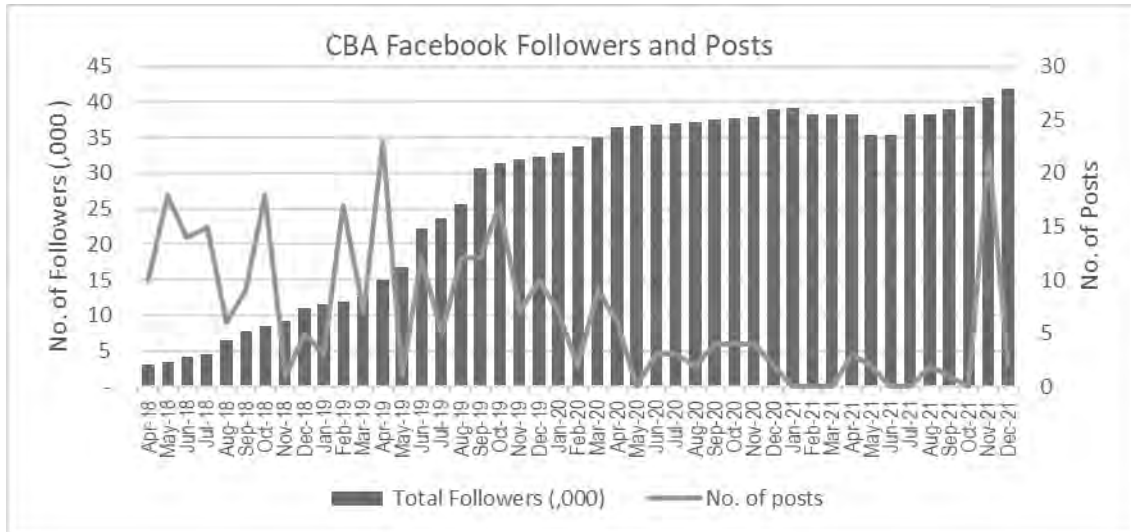
1.4.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA

(1) CBA's Facebook

CBA uses Facebook as part of its public relations activities to communicate with bus users and stakeholders. The CBA Facebook page has more than 41,000 followers and is rated 4⁽¹⁾ out of 5 as of December 2021. On Facebook, CBA published a video of the CBA bus services, which was the most-watched on CBA's Facebook page and earned more than 78,000 views by May 2021. Even after bus operation was suspended in March 2020, CBA's Facebook regularly updated and gradually increases the number of followers.

When the CBA resumed its bus service, CBA continuously shared information on the resumption of its bus service to the public on Facebook, and posted the CBA's COVID-19 counter measure and the CBA bus promotion video created by the Project to encourage people to use the bus. Accordingly, the number of posts significantly increased in Nov 2021 and reached to 24 posts.

(1) The rating is based on how many people recommend or do not recommend the page

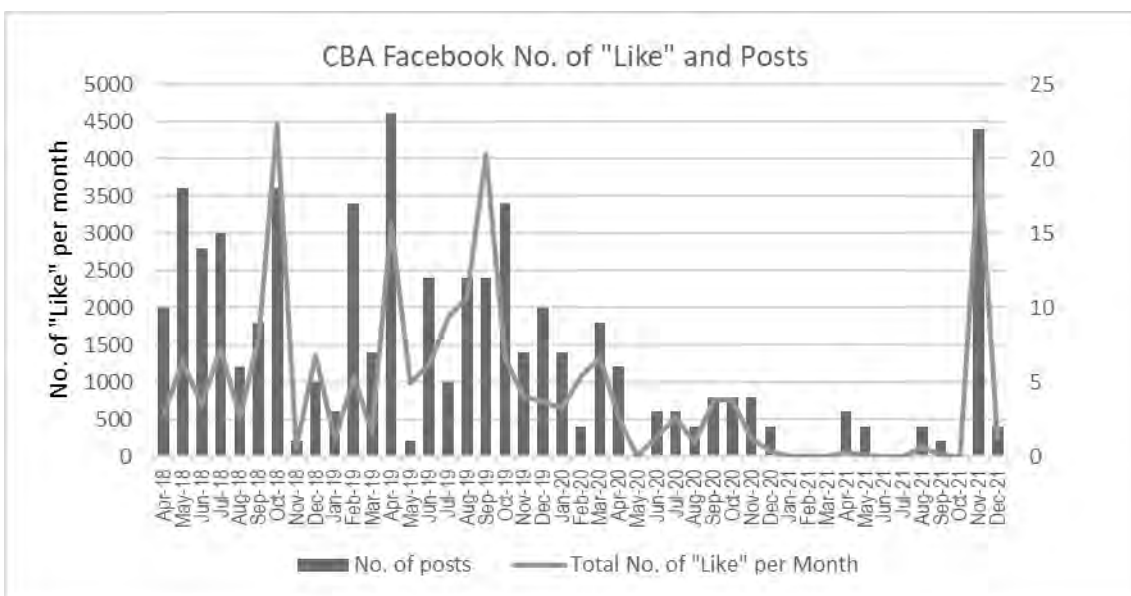


Source: prepared by JICA Expert based on data from CBA facebook page

Figure 1.3.5 (1) No. of Followers and Posts

Many “Likes” are observed when CBA provided the special inter-regional shuttle bus service during the holidays of Khmer New Year (April) and Pchum Ben Days Sep/Oct). A number of “Likes” are also given to the useful and attractive information for the passengers such as “Bus Map” as well as “Female Drivers”.

When the CBA posted the resumption of bus service on November 1 2021, the CBA Facebook received more than 12,000 "Likes," the highest record in CBA Facebook, indicating the high expectations of the public for the resumption of bus service. Facebook can be used as a communication tool for users and potential users.



Source: prepared by JICA Expert based on data from CBA

Figure 1.3.5 (2) No. of “Like” and Posts of CBA Facebook Page

Table 1.3.5 (1) List of Popular Posts in CBA Facebook Page

Date	Title	No. of Like
1 Nov 2021	CBA announce to restart bus operation	Over 12,000
4 Oct 2020	All of CBA leader and staffs are are shocked to learn that Ms. Hay Sopheak, the lady driver was passed away	525
25 Sep 2019	On the Pchum Ben Days, CBA is ready to transportation the peoples to homeland From 26 to 30 September 2019	1700
6 Jul 2019	Currently, CBA has cooperated with JICA to train two female drivers	1600
9 Dec 2018	Students are happy to ride CBA bus to/ from school safely	620
11 Apr 2019	Ready for transportation tomorrow, travel safely!	605
30 Oct 2018	Bus Map of the 13 bus lanes of the CBA	589
6 Oct 2018	Activities to transport people to provinces on October 06, 2018	570
4 Oct 2020	All of CBA leader and staffs are are shocked to learn that Ms. Hay Sopheak, the lady driver was passed away	525
7 Aug 2019	CBA shared the news from Khmer Time News on the first lady drive	505

Note: popular posts mean the post marks more than 500 “like” in CBA Facebook page as of 28 Dec. 2021
 Source: CBA Facebook page

Table 1.3.5 (2) List of Popular Videos in CBA Facebook Page

Date	Title	No. of Views
13 Sep 2019	Progress of public bus services	8,000
28 Sep 2018	Phnom Penh is ready to launch a test run of a new bus, a grant from the Government of Japan on 5 new routes on October 1, 2018	7,400
28 Mar 2018	How to use the bus service	7,200

Source: CBA Facebook page

1.5. Achievement of Output

Due to COVID-19 pandemic, all CBA bus services have been suspended since 26th March 2020 and JICA Experts have been working remotely with the CBA counterparts to progress the project output and activities until the end of 2020. Since the beginning of 2021, JICA Experts resumed activities in Cambodia to the extent possible while continuing remote activities. However, as of April 2021, all JICA Expert’s activities returned remotely, as lockdown began due to the spread of COVID-19 in Phnom Penh.

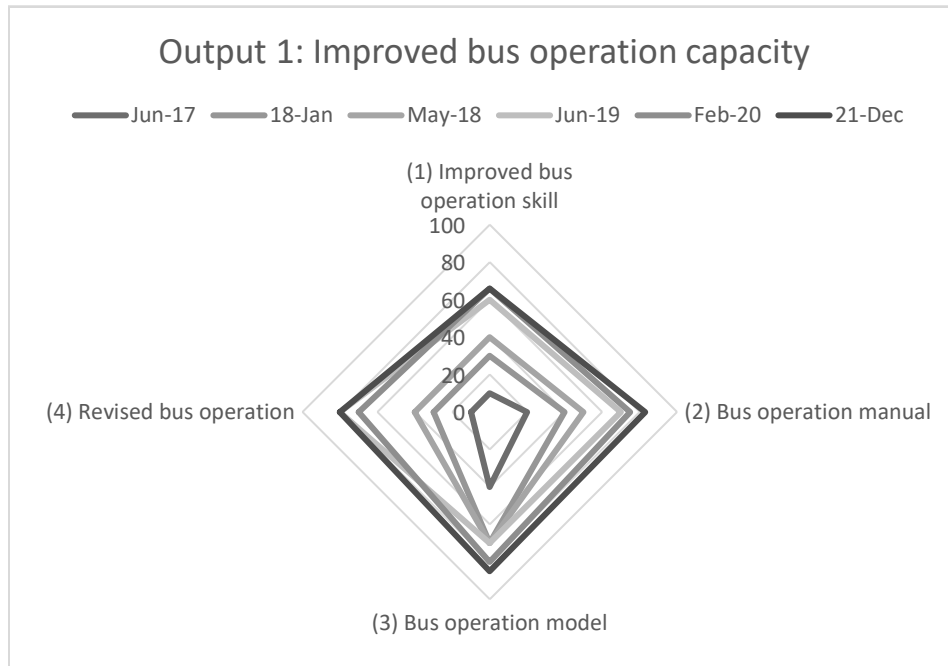
Through both CBA and JICA Experts have been actively involved in accomplishment of COVID-19 countermeasures and preparation for restoration of City bus operation, these activities do not significantly contribute to making significant progresses to accomplish the project output and activities.

On November 1, 2021, it was officially announced that the CBA bus service would resume, and in fact The bus service was resumed on November 2. In response to this, JICA experts were able to resume their activities in Phnom Penh again from late November.

The achievement level of each output is summarized below.

1.5.1. Output 1: Improvement of Bus Operation Capacity of CBA

Bus operation capacity are judged by (i) bus operation skills, (ii) operation manual, (iii) operational model and (iv) continuous revision of bus operation, and CBA’s capacities of the bus operation has been steadily improved since the commencement of the Project. There is no much changes in bus operation capability observed between Feb 2020 and Dec 2021 due to the short period of the bus operation resumed in Nov 2021.

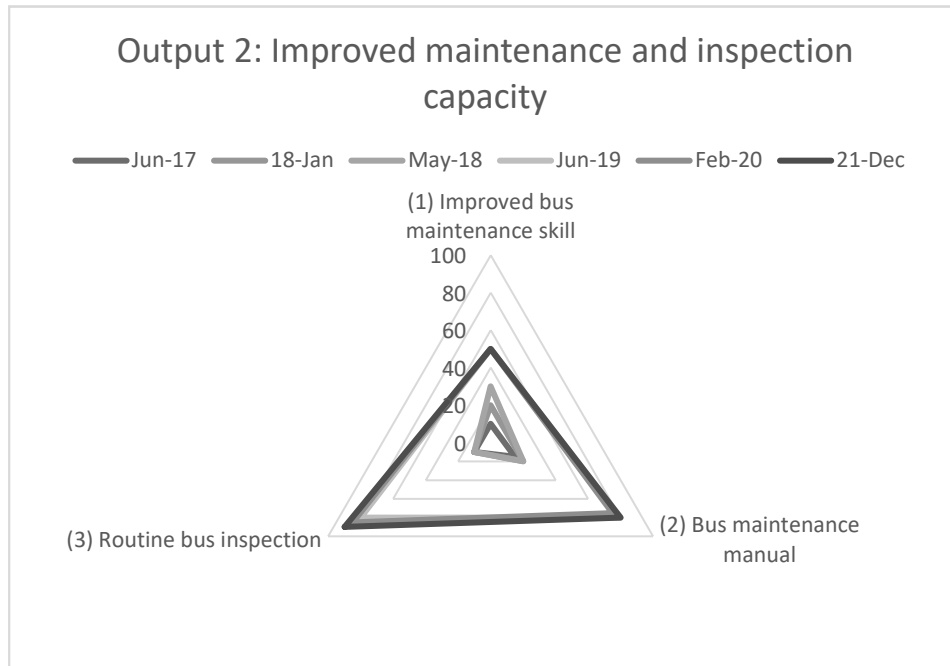


Source: prepared by JICA Expert

Figure 1.3.5 (2) Rader Chart of Achievement Level of Overall Project Outputs

1.5.2. Output 2: Improvement of Bus Vehicle Inspection/Maintenance Capacity of CBA

Bus maintenance and inspection capacity is evaluated by (i) maintenance skill, (ii) maintenance manual and (iii) physical routine maintenance works. Like bus operational capacity, CBA steadily improved its capability through conducting scheduled inspection and repair and maintenance works. During the suspension of the bus operation, the CBA continued to inspect and repair/maintenance and maintained its capability.

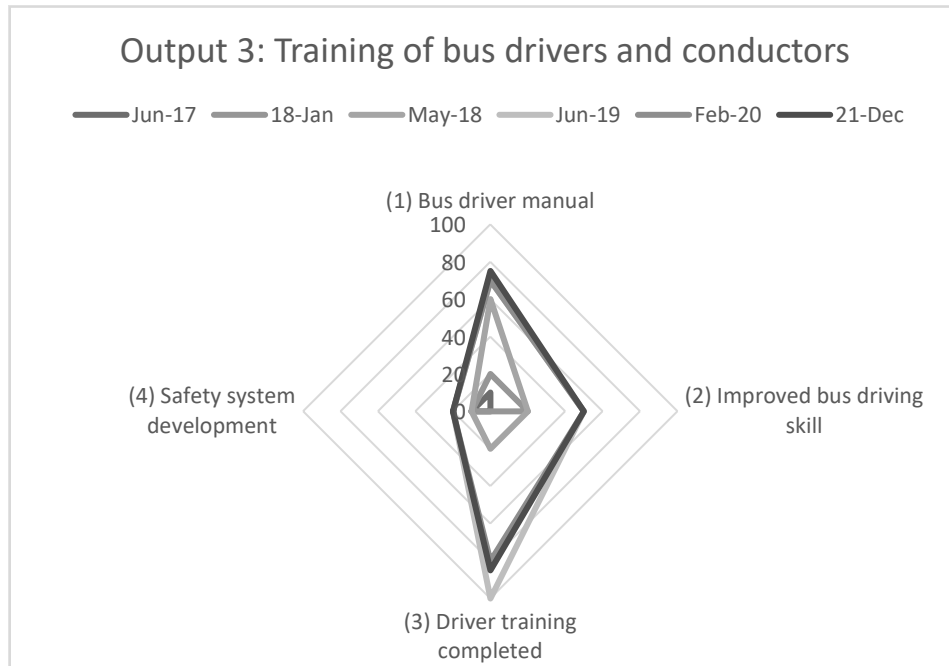


Source: prepared by JICA Expert

Figure 1.3.5 (2) Rader Chart of Achievement Level of Improved Maintenance Capacity (Output 2)

1.5.3. Output 3: Establishment of Training System of Drivers/conductors and Management System of Safety Driving and Labor

Like bus maintenance and inspection capacity, CBA continued to develop the training materials for safety management, including prevention measures against COVID-19 infection and procurement of necessary equipment and tools to prevent from COVID-19 infection. These contribute to maintaining the safety management capacity of CBA’s drivers.

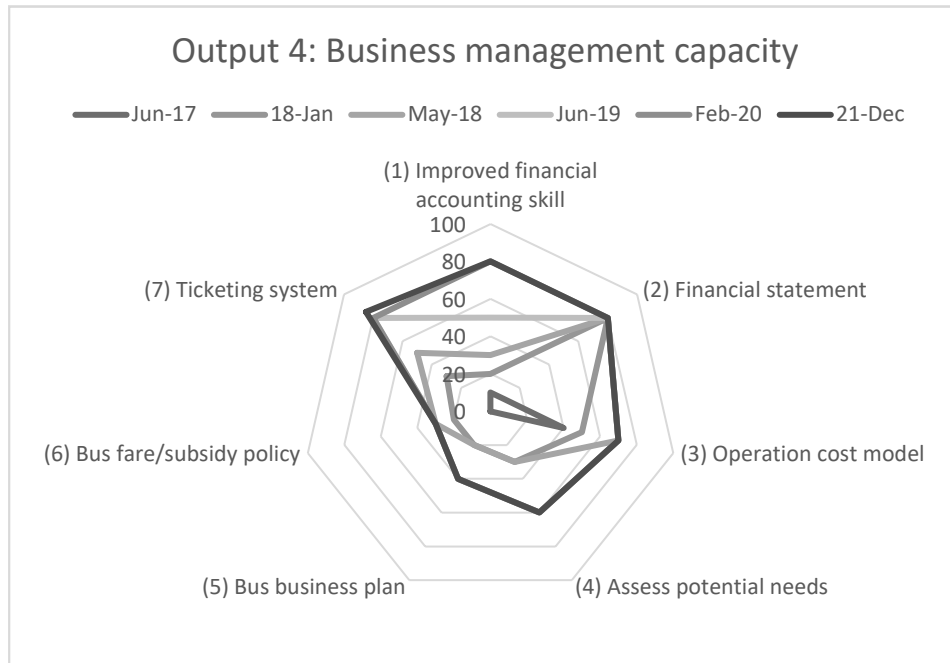


Source: prepared by JICA Expert

Figure 1.3.5 (2) Rader Chart of Achievement Level of Training of Bus Drivers (Output 3)

1.5.4. Output 4: Improvement of Business Management Capacity of CBA

For preparation of bus operation resume, CBA has been working to identify potential and revealed passenger needs and developed 3 operational scenarios: (i) full scale operation, (ii) 50% and full network operation and (iii) 30% and designated network operation. Through the discussion with PPCA, CBA confirmed 30% and designated network operation as an optimum scenario and which has been in practice since Nov 2021 when the bus operation resumed. These contribute to improving item 4 (assess potential needs) and item 5 (bus business plan).

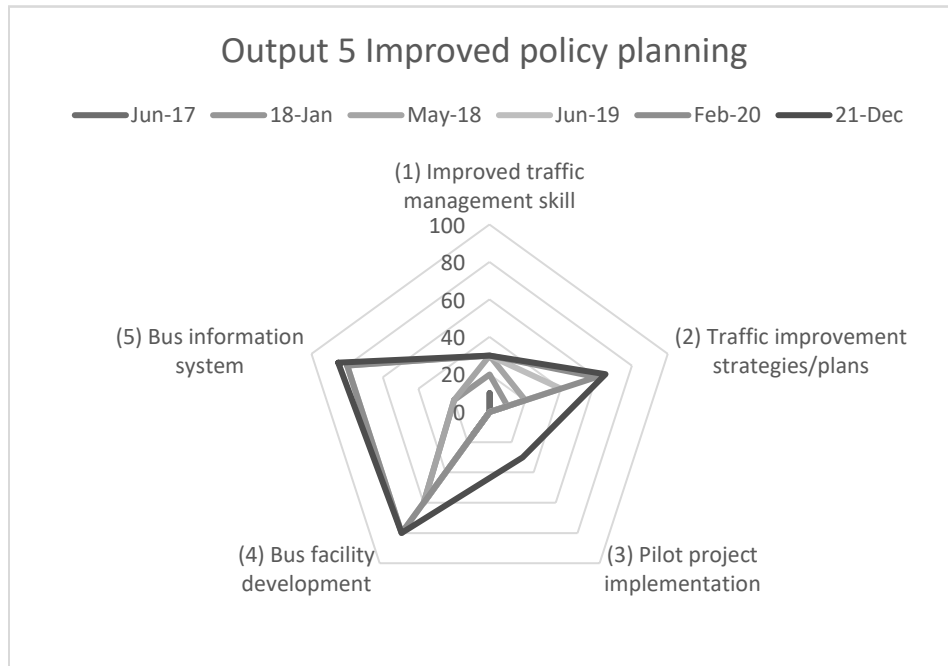


Source: prepared by JICA Expert

Figure 1.3.5 (2) Rader Chart of Achievement Level of Business Management Capacity (Output 4)

1.5.5. Output 5: Improvement of Capacity on Policy Planning for the Public Transport Priority Measures of CBA and DPWT/PPCA (* to be revised following the result of Capacity evaluation survey.)

During the suspension of the bus operation, CBA has been engaged in planning and implementing a number of pilot projects. One notable achievement CBA made is implementation of shared e-bike. Oyika, a private shared e-bike supplier and CBA has been negotiating with PPCA to locate the potential bus stops/terminals to place the shared e-bike and at least 15 e-bikes are installed at designated 2 bus stops along Norodom Blvd. CBA has also been working to develop the mobility management materials to announce the bus operation resumption and countermeasures against COVID-19 and these materials were successfully and fully utilized during initial stage of the bus operation resumption.

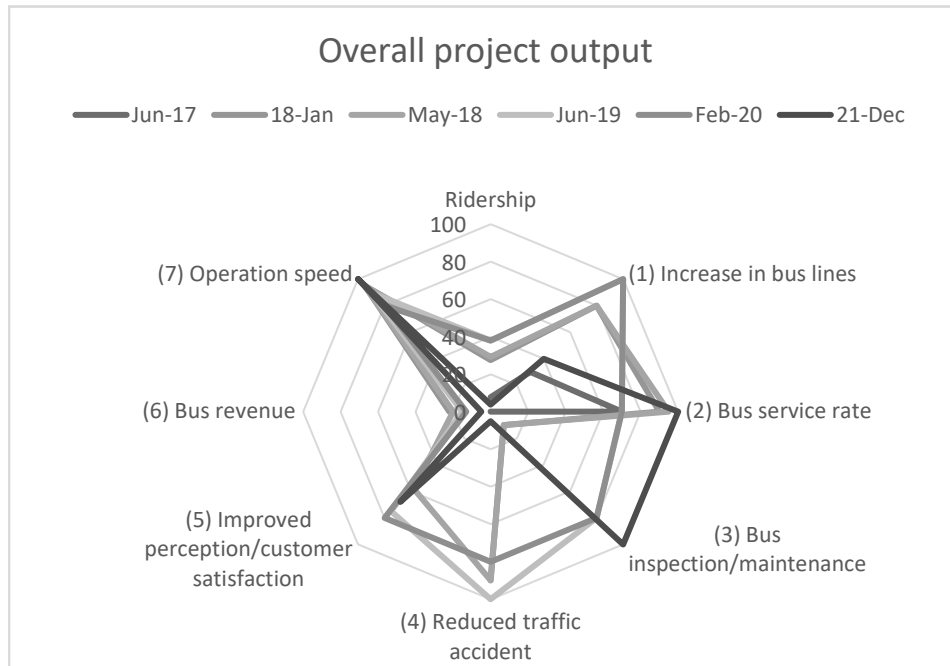


Source: prepared by JICA Expert

Figure 1.3.5 (2) Radar Chart of Achievement of Improved Policy Planning (Output 5)

1.6. Achievement of the Project Purpose

The achievement level of Project Purpose is summarized below. Though the achievement level of each project output was maintained and/or slightly improved after bus operation resumed, some of monitoring indicators to evaluate the achievement level of project purpose/goal were significantly deteriorated. For instance, the Project set the goal to achieve the number of daily passenger at 70,000 pax per day. Due to the limited operation network and service, the number of passenger significantly reduced as observed at the above section. Also, although all are minor accidents, the accident rate caused by bus drivers also increased by over 300% and which resulted in lagging behind the set target.



Source: prepared by JICA Expert

Figure 1.3.5 (2) Rader Chart of Achievement Level of Overall Project Output

1.7. Changes of Risks and Actions for Mitigation

Not applicable

1.8. Progress of Actions undertaken by JICA and Cambodia

Undertakings by JICA and Cambodian side are provided as planned without any delay.

1.9. Progress of Environmental and Social Considerations (if applicable)

Not applicable

1.10. Progress of Considerations on Gender/Peace Building/Poverty Reduction (if applicable)

Project assisted to recruit female bus driver(s) and as of Nov 2019, one female driver in a regular bus service and another female driver already got license and started on road training. (Note that one female driver passed away in Nov 2020 and remaining one female driver at work)

1.11. Other remarkable/considerable issues related/affect to the project (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

The Expert Team was tasked by JICA HQ to conduct a cross country study on

countermeasures against COVID-19 for local authority and public transport service providers and has prepared the deliverables including (i) Final Report and (ii) Leaflet to promote the public transport service during COVID-19 pandemic. These deliverables are attached as Annex 10 in Monitoring Sheet version 8.

2. Delay of Work Schedule and/or Problems (if any)

2.1. Delay of procurement and delivery of Japanese buses (Actions already been taken)

2.1.1. Summary

Due to delayed procurement of Japanese buses (originally delivery of Japanese buses scheduled to be completed by Feb 2018, however, last and actual delivery was completed in Dec 2018), there is a risk that the major maintenance of Japanese bus scheduled every 120,000 km cannot be completed by the end of the Project (by Dec 2020).

2.1.2. Cause

Delayed procurement of Japanese buses

2.1.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Review and development of maintenance manual for the major defects/maintenance by Expert Team
- On-the-job training for major defects/maintenance by Expert Team
- Discussion for extension of the Project, including that on revised PDM/PO between Expert Team and CBA/PPCA
- Negotiation on contract addendum for extension of the Project between Expert Team and JICA

2.1.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for 3 months up to March 2021.

2.2. Suspension of City bus operation from March 2020 (Actions already been taken)

2.2.1. Summary

Due to the COVID-19 pandemic in Cambodia, the PPCA imposed a series of countermeasures to prevent COVID-19 infection among public and these

countermeasures including suspension of City bus operation. The PPCA/CBA temporarily terminated the bus operation since 26th March 2020 and both CBA and JICA Experts have been facing difficulties to accomplish the pre-set project objectives and activities. There has been an unofficial discussion among PPCA and CBA implying that CBA would restart the City bus operation in March or April 2021 in consideration of expected low ridership due to persistent of public concern over the risk of COVID-19 infection and low revenue which increases the financial burden in time where saving of national budget is vital.

2.2.2. Cause

Suspension of City bus operation and budget constraints

2.2.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Development of operational plan under the several budget constraint scenarios
- Preparation of staff and passenger safety plan under COVID-19 pandemic (done)
- Procurement of tools/equipment to prevent infection of COVID-19 for staff and passenger (done)
- Preparation of driver operation manual during COVID-19 pandemic (done)
- Implementation of series of staff and driver training to prevent infection of COVID-19 (done)
- Preparation of PR materials to well inform the bus passengers with restart of the City bus operation (done)
- Dissemination campaign to the bus passengers who used to use the City bus

2.2.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for additional 9 months up to Feb 2022.

2.3. Enhanced capacity for mechanics under collaboration with NPIC/JVC (Actions related to this are discussed and agreed to be suspended due to limited project duration during 4th JCC meeting)

2.3.1. Summary

There is on-going JICA project entitled 'Automotive Mechanic e-Learning Program' at NPIC (National Polytechnic Institute of Cambodia), aiming at materializing leaning materials, tools and facilities for the Automotive

Mechanics students and hence improving the quality of the teaching program for the Mechanics. There is a growing demand derived from the said project that NPIC (and JVC Technical School and Workshop) would expand the current teaching program which limits to small automobile to include the program for large commercial vehicles such as trucks and buses. The concerned parties, including CBA/NPIC/JVC and JICA/Expert Team identified the CBA as the best venue to provide such training and which also benefits the CBA to improve sustainability of the mechanics training under collaboration with NPIC/JVC.

2.3.2. Cause

Lack of exit strategy to maintain the sustainability of the mechanics capacity building

2.3.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Design concept of collaboration among CBA, NPIC and JVC (done)
- Consensus building on the design concept among decision makers (done)
- Preparation of list of training tools and equipment for large commercial vehicles at CBA, NPIC and JVC
- Preparation of training curriculum for large commercial vehicles
- Procurement of training tools and equipment
- Operation and maintenance of those tools and equipment
- Provision of training courses for large commercial vehicles

2.3.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Under discussion with JICA HQ for variation order

2.4. Support to Resumption of Bus Operation

2.4.1. Summary

The Royal Government of Cambodia announced the reopening of Cambodia to embrace 'New Normal' to the public on 1st November 2021 which allows the citizens to lead a new way of normal life with preventive measures against COVID-19. As part of the New Normal campaign, the PPCA instructed CBA to restore the operation of City Bus on 1st November 2021, following advanced actions, including an official permission and recognition from higher authorities, including the Minister for Economic and Finance and Minister for Justice. Following this instruction, the CBA officially announced the resumption of bus

operation on 2nd November 2021, and resumed bus operation utilizing 60 units of the bus and running on four (4) designated lines (Line 1A, Line 2, Line 3 and Line 4 A/B) on the same day.

2.4.2. Cause

Sudden instruction of resumption of bus operation by PPCA

2.4.3. Action to be taken

The following actions taken between Expert Team and CBA.

- Development of operational plan with 30% of bus fleets (60 fleets) (Done)
- Discussion and agreement with the 30% operational plan (Done)
- Preparation and conduct of training to drivers for resumption of bus operation (Done)
- Development of mobility management plan and PR materials and implementation of PR activities (such as radio, newspaper, banner, poster and PR video and posting to CBA Facebook) (Done)
- Monitoring of bus operation, PR activities as well as safety measurements (On-going)

2.4.4. Roles of Responsible Persons/Organization (JICA, Cambodia)

Following the discussion with JICA HQ and CBA/PPCA, the contract period was extended for additional 6 months up to August 2022 to complete the actions listed above.

3. Modification of the Project Implementation Plan

3.1. PDM (refer Annex 1: Project Monitoring Sheet I: PDM)

PDM ver.0 was reviewed during the initial stage of the Project and PDM ver. 1.0 was developed with numerical monitoring indicators added to the original PDM. PDM ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.2. PO (refer Annex 2: Project Monitoring Sheet II: PO)

PO ver.0 was reviewed and PO ver. 1.0 was developed, reflecting procurement schedule of Chinese and Japanese buses. PO ver. 1.0 was discussed and approved during the 1st JCC meeting.

3.3. Other modifications on detailed implementation plan

Not applicable

4. Preparation of Gov. of Cambodia toward after completion of the Project

Not applicable