Annex 4 R/D, M/M, Minutes of JCC

RECORD OF DISCUSSIONS

ON

THE PROJECT FOR STRENGTHENING CAPACITY FOR MAINTENANCE OF ROADS AND BRIDGES

IN

THE KINGDOM OF CAMBODIA

AGREED UPON BETWEEN

MINISTRY OF PUBLIC WORKS AND TRANSPORT

AND

JAPAN INTERNATIONAL COOPERATION AGENCY

Phnom Penh, December 25, 2014

Hiroshi Izaki Chief Representative Cambodia Office Japan International Cooperation Agency Japan	Tram Iv Tek Minister Ministry of Public Works and Transport Kingdom of Cambodia

Based on the minutes of meetings on the Detailed Planning Survey on the Implementation of the Project for Strengthening Capacity for Maintenance of Roads and Bridges (hereinafter referred to as "the Project") signed on October 17 between Ministry of Public Works and Transport (hereinafter referred to as "MPWT") and Japan International Cooperation Agency (hereinafter referred to as "JICA"), JICA held a series of discussions with MPWT and relevant organizations to develop a detailed plan of the Project.

Both parties agreed the details of the Project and main points discussed as described in the Appendix 1 and the Appendix 2, respectively, and to request their respective governments to proceed with the necessary procedures for implementation of the Project.

Both parties also agreed that MPWT, the counterpart 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 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 21th, 2014 between the Government of Japan (hereinafter referred to as "GOJ") and the Royal Government of Cambodia (hereinafter referred to "RGC").

Appendix 1: Project Description
Appendix 2: Minutes of Meetings on Japanese Technical Cooperation Project for Strengthening of Inspection and Maintenance of Roads and Bridge

Appendix 1

PROJECT DESCRIPTION

Both parties confirmed that there is no change in the Project Description agreed on in the minutes of meetings on the concerning Preparatory Survey on the Project signed on October 17th, 2014 (Appendix 2).

I. BACKGROUND

In Cambodia, roads are the most important mode of transport. Cambodia has a road network of 44,709km, of which 5,263km is national road. Almost all of the roads in Cambodia were constructed from the 1920s to 1930s, but after the 1970s, the main roads were damaged by the civil conflict. In addition, the road condition is poor because of many overloaded vehicles and periodic river flooding. After the end of the civil conflict, despite road and bridge rehabilitation and construction by RGC or multilateral donors, the road network has not been sufficiently maintained due to a substantial lack of financial resources, equipment, human resources, and technique.

As a result of past projects implemented by multilateral donors including JICA, the pavement ratio became 99.1 % for single digit national roads. Also, road maintenance advisers and experts in Technical Cooperation Projects who were dispatched by JICA strengthened the road maintenance capacity of MPWT. However, the maintenance of roads and bridges in Cambodia is still far behind other Asian countries. The main problems facing the maintenance of roads and bridges are, (1) Financial Constraints, (2) Insufficient Skills and Experience of MPWT and (3) Lack of Equipment for Road Development/Maintenance Works.

Under these circumstances, to tackle the items above, the RGC requested Japan to conduct a technical cooperation project to strengthen capacity for maintenance of roads and bridges.

II. OUTLINE OF THE PROJECT

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

1. Title of the Project

The Project for Strengthening Capacity for Maintenance of Roads and Bridges

2. Overall Goal

Appropriate Maintenance of roads and bridges is managed by MPWT.

3. Project Purpose

Capacity of RID to supervise implementing bodies maintaining roads and bridges is enhanced.

4. Outputs

(1) The bridge maintenance cycle is established.

(2) Road and bridge inspection capacity of RID is enhanced.
(3) Road and bridge repair capacity of RID is enhanced.
(4) Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.

5. Activities

1-1. To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system
1-2. To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results
1-3. To test the action plan
1-4. To hold workshops of the bridge maintenance cycle
1-5. To prepare draft annual bridge maintenance budget
2-1. To review and develop road maintenance manual, including a database framework
2-2. To review and develop bridge maintenance manual, including a database framework
2-3. To hold training workshops on road and bridge inspections
2-4. To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs
2-5. To register the inspection results in the database at the target DPWTs
2-6. To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops
3-1. To review and establish road repair manual
3-2. To review and establish bridge repair manual
3-3. To hold training workshops on road and bridge repairs
3-4. To identify road and bridge for the pilot repair works based on the inspection results at the target DPWTs
3-5. To establish repair plan for the identified roads and bridges at the target DPWTs
3-6. To repair the identified roads and bridges as pilot at the target DPWTs
3-7. To evaluate the above repair works
3-8. To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop
4-1. To organize seminars for other DPWTs – trainings on road and bridge inspection
4-2. To organize seminars for other DPWTs – trainings on road and bridge repair
4-3. To organize the project wrap-up seminar

6. Input

(1) Input by JICA

(a) Dispatch of Experts
- Chief Advisor/A long term expert
- Short term experts
  1) Team Leader/ Bridge maintenance engineer
  2) Deputy-project manager/Bridge repair engineer
  3) Bridge Inspection Engineer

4) Road Engineer
5) Coordinator-

(b) Training

Provision of training in Cambodia and in Japan or other countries

(c) Machinery and Equipment

Provision of machinery and equipment

In case of importation, the machinery, equipment and other materials under II-6 (1) (c) above will become the property of the RGC 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 MPWT

MPWT will take necessary measures to provide at its own expense:

(a) Services of MPWT's counterpart personnel and administrative personnel as referred to in II-7;
(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-6 (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

7. Implementation Structure

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

(1) MPWT

(a) Project Director

Chairman will be responsible for overall administration and implementation of the Project.

(b) Project Manager

(2) JICA Experts

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

(3) 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 twice a year and whenever deems it necessary. JCC will approve an annual work plan, review overall progress, conduct monitoring and evaluation of the Project, and exchange opinions on major issues that arise during the implementation of the Project. A list of proposed members of JCC is shown in the Annex IV.

8. Project Site(s) and Beneficiaries
Citizens in Cambodia

9. Duration
3 years from the Project commencement. (Assignment of first Japanese expert in Cambodia)

10. Reports to JCC

MPWT and JICA experts will jointly prepare the following reports in English.
(1) Inception Report
(2) Progress Report on annual basis until the project completion.
(3) Project Completion Report at the time of project completion.

11. Environmental and Social Considerations

(1) MPWT agreed to 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 MPWT

1.MPWT will take necessary measures to:

(1) ensure that the technologies and knowledge acquired by the Cambodia nationals 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-6 (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.

2.MPWT will take necessary measures to:

(1) Provide security-related information as well as measures to ensure the safety of the JICA experts;
(2) Permit the JICA experts to enter, leave and sojourn in Cambodia for the duration of their assignments therein and exempt them from foreign registration requirements and consular fees.
(3) Exempt the JICA experts from taxes and any other charges on the equipment, machinery and other material necessary for the implementation of the Project;
(4) Exempt the JICA experts from income tax and charges of any kind imposed on or in connection with any emoluments or allowances paid to them and/or remitted to them from abroad for their services in connection with the implementation of the Project; and
(5) Meet taxes and any other charges on the equipment, machinery and other material, referred to in II-7 above, necessary for the implementation of the Project.

3. MPWT will bear claims, if any arises, against the JICA experts resulting from, occurring in the course of, or otherwise connected with, the discharge of their duties in the implementation of the Project, except when such claims arise from gross negligence or willful misconduct on the part of the JICA experts.

IV. MONITORING AND EVALUATION

JICA and the MPWT 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 shall be reviewed every six (6) months.
Also, Project Completion Report shall be drawn up one (1) month before the termination of the Project.

JICA will conduct the following evaluations and surveys to mainly verify sustainability and impact of the Project and draw lessons. The MPWT 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, MPWT 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, MPWT and relevant organizations shall 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 the Cambodia.
MPWT and relevant organizations shall 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 MPWT 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 MPWT.
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.

IX. OTHER RELEVANT ISSUES

1. MPWT will request appropriate necessary budget for maintenance to Ministry of Economy and Finance utilizing a draft budget plan which is prepared in the Project.

2. Target DPWTs will be selected at the first JCC (Kick-off Meeting).

Annex I Logical Framework (Project Design Matrix:PDM)
Annex II Tentative Plan of Operation
Annex III Project Organization Chart
Annex IV A list of proposed members of joint coordinating committee

ANNEX I

Project Title : The Project for Strengthening Capacity for Maintenance of Roads and Bridges in the Kingdom of Cambodia

Project Period : March 2015 to March 2018 (Three Years) **Target Group : Engineers of RID**

Target Area : Roads and Bridges under MPWT **Dated : December 25, 2014**

Target Organization : Road Infrastructure Department (RID), Ministry of Public Works and Transport (MPWT) **Ver. 0**

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Appropriate maintenance of roads and bridges is managed by MPWT.	1. The road and bridge database is updated X^1 time / X^2 year. 2. Road and bridge maintenance plans are updated X^1 time / X^2 year based on the result of the road and bridge database updated. 3. Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID. 4. The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1. Log record of the database, random sample check of individual data 2.The maintenance plans, corresponding data from the database 3. The maintenance record, the maintenance plans and manuals 4. Minutes of the review meeting	- Country's socio-political situation does not change rapidly.
Project Purpose Capacity of RID to supervise implementing bodies maintaining roads and bridges is enhanced.	1. Inspection results done by the three target DPWTs are approved by RID based on the manuals by the end of the project. 2. Repair results done by the two target DPWTs are approved by RID based on the manuals by the end of the project. 3. The above two target DPWTs prepare a draft budget for roads and bridges maintenance for FY 2018 respectively within pre-agreed schedule. 4. Road and bridge maintenance cycle is explained and shared to concerning offices and units at the project wrap-up seminar. 5. More than XX % of the above seminar participants show interests to practice road and bridge maintenance cycle.	1. DPWT inspection reports and on-site confirmation by RID 2. DPWT repair reports and on-site confirmation by RID 3. The said draft budget and its submission date 4. Number and name of the participated offices and unit 5. Interest level of the participants through the questionnaire	- Organizational arrangement of MPWT is not changed drastically.
Outputs 1. The bridge maintenance cycle is established.	1-1. The annual action plan for bridge maintenance cycle is developed by MM/YYYY. 1-2. The above action plan is approved by MM every year. 1-3. More than XX % of RID engineers pass exam of bridge maintenance cycle. 1-4. The annual bridge maintenance budget is drafted at the target DPWTs by MM every year.	1-1. The annual action plan and it's date developed 1-2. The approved date 1-3. The exam results and participants list 1-4. The drafted budget and its date	- The trained staff/officers remain at the job. - Roles of DPWTs and other concerning offices and units are not changed including budget preparation system.
2. Road and bridge inspection capacity of RID is enhanced.	2-1. The road and bridge maintenance manuals are prepared by MM/YYYY. 2-2. The selected X roads and Y bridges in the targeted DPWTs are inspected according to the maintenance manual. 2-3. The inspection results are registered to the road and bridge database by RID within XX weeks after the inspection. 2-4. More than XX % of RID's engineers pass road and bridge inspection test.	2-1. The manuals and its' date prepared 2-2. Inspection record and sample on-site confirmation 2-3. Inspection record and corresponding data for sample check 2-4. The test results and participants list	
3. Road and bridge repair capacity of RID is enhanced.	3-1. The road and bridge repair manuals are prepared by MM/YYYY. 3-2. The identified X' roads and Y' bridges in the targeted DPWTs are repaired according to the repair manuals and the inspection results. 3-3. The repair results are registered to the road and bridge database by RID within XX weeks after the repair. 3-4. More than XX % of RID's engineers pass road and bridge repair test.	3-1. The manuals and its' date prepared 3-2. Repair record and sample on-site confirmation 3-3. Repair record and corresponding data for sample check 3-4. The test results and participants list	

4. Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.	4-1. More than XX % of seminar-training participants passes the road and bridge inspection exam in each case. 4-2. More than XX % of seminar-training participants passes the road and bridge repair exam in each case. 4-3. More than XX % of seminar-training participants satisfied teaching method of RID engineers in each case.	4-1. The exam results and participants list 4-2. The exam results and participants list 4-3. Review by the participants	
Activities	Inputs		- Conditions of roads and bridges under MPWT are not rapidly deteriorated. - Flood with large scale is not occurred annually.
1-1. To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system 1-2. To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results 1-3. To test the action plan 1-4. To hold workshops of the bridge maintenance cycle 1-5. To prepare draft annual bridge maintenance budget	(Japan side) (Draft) 1. A chief advisor/ A long term expert 2. Short term experts 1) Team Leader/ Bridge maintenance engineer 2) Deputy-project manager/Bridge repair engineer 3) Bridge Inspection Engineer 4) Road Engineer 5) Coordinator 3. Equipment for road and bridge maintenance 4. C/P training 5. Cost for Seminars and Trainings as the project activities	(Cambodia side) 1. Arrangement of counterpart personnel 1) Project Director 2) Project Manager 3) Other Necessary Personnel 2. Implementation cost for the pilot repair works 3. Travel expenses and allowances for the participants of the seminars and trainings organized as the project activities 4. Maintenance cost of the JICA project equipment 5. Office space including its utility cost (electricity, water, internet and other necessary office facilities) 6. Etc	
2-1. To review and develop road maintenance manual, including a database framework 2-2. To review and develop bridge maintenance manual, including a database framework 2-3. To hold training workshops on road and bridge inspections 2-4. To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs 2-5. To register the inspection results in the database at the target DPWTs 2-6. To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops			
3-1. To review and establish road repair manual 3-2. To review and establish bridge repair manual 3-3. To hold training workshops on road and bridge repairs 3-4. To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs 3-5. To establish repair plan for the identified roads and bridges at the target DPWTs 3-6. To repair the identified roads and bridges at the target DPWTs 3-7. To evaluate the above repair works 3-8. To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop			Pre-condition **N/A**
4-1. To organize seminars for other DPWTs - trainings on road and bridge inspection 4-2. To organize seminars for other DPWTs - trainings on road and bridge repair 4-3. To organize the project wrap-up seminar			

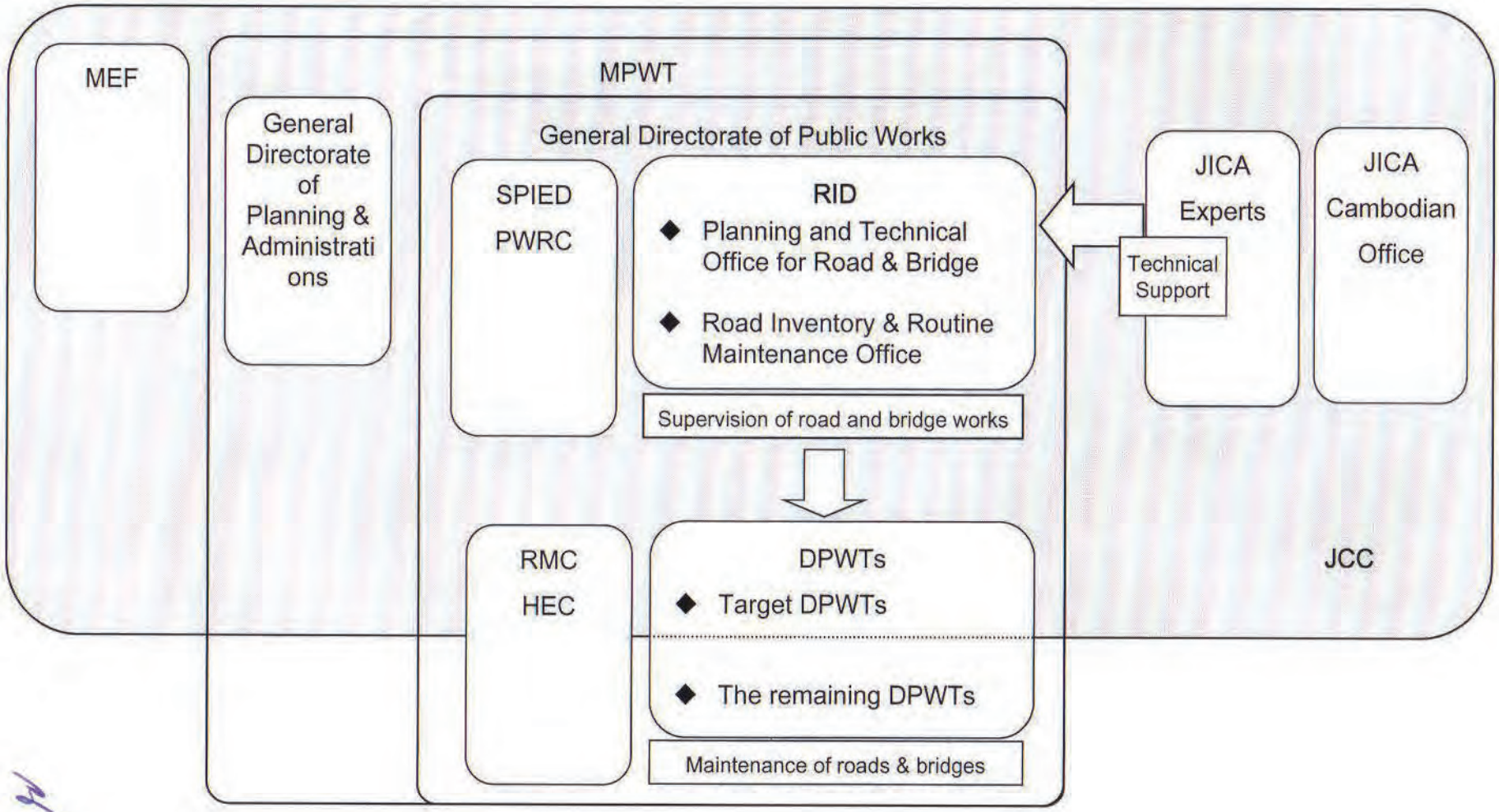
ANNEX II

Plan of Operation

Date: December 25, 2014 Ver.0

		Project Activities	1st year						2nd year						3rd year					
			2	4	6	8	10	12	2	4	6	8	10	12	2	4	6	8	10	12
1		**1. The bridge maintenance cycle is established.**																		
	1-1	To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system																		
	1-2	To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results																		
	1-3	To test the action plan																		
	1-4	To hold workshops of the bridge maintenance cycle																		
	1-5	To prepare draft annual bridge maintenance budget																		
2		**Road and bridge inspection capacity of RID is enhanced.**																		
	2-1	To review and develop road maintenance manual, including a database framework																		
	2-2	To review and develop bridge maintenance manual, including a database framework																		
	2-3	To hold training workshops on road and bridge inspections																		
	2-4	To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs				Target DPWT1						Target DPWT2						Target DPWT3		
	2-5	To register the inspection results in the database at the target DPWTs																		
	2-6	To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops																		
3		**Road and bridge repair capacity of RID is enhanced.**																		
	3-1	To review and establish road repair manual																		
	3-2	To review and establish bridge repair manual																		
	3-3	To hold training workshops on road and bridge repairs																		
	3-4	To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs					Target DPWT1						Target DPWT2							
	3-5	To establish repair plan for the identified roads and bridges at the target DPWTs																		
	3-6	To repair the identified roads and bridges at the target DPWTs																		
	3-7	To evaluate the above repair works																		
	3-8	To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop																		
4		**Road and bridge maintenance cycle is introduced to other DPWTs and concerning a**																		
	4-1	To organize seminars for other DPWTs - trainings on road and bridge inspection																		
	4-2	To organize seminars for other DPWTs - trainings on road and bridge repair																		
	4-3	To organize the project wrap-up seminar																		
Project Administration Activities			Kick-off Meeting																	
		Joint Coordination Committee (JCC)																		
		Submission of the project progress report																		

PROJECT ORGANIZATION CHART



A List of Proposed Members of Joint Coordinating Committee, JCC

	Cambodian side	Japanese side
Joint Coordinating Committee, JCC	• Director-General, General Directorate of Public Works (PW), Ministry of Public Works and Transport (MPWT) • Director, Road and Bridge Maintenance Center (RMC), MPWT • Director, Heavy Equipment Center (HEC), MPWT • Director, Public Works Research Center (PWRC), MPWT • Director, Sub-National Public Infrastructure and Engineering Department (SPIED), MPWT • (Position), Provincial Department of Public Works and Transport (DPWT) • (Position), Ministry of Economy and Finance (MEF) • Other personnel recommended by the Cambodian side or JICA	• JICA Experts of the Project • Representatives of JICA Cambodia Office • Other personnel recommended by the Cambodian side or JICA
Project Director	• Director-General, PW	
Project Manager	• Director, RID	
Counterparts	• RID	• JICA Experts of the Project

Minutes of the First Joint Coordination Committee Meeting of
The Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia

The First Joint Coordination Committee (1st JCC) meeting among the Ministry of Public Works and Transport (MPWT) of Cambodia, Japan International Cooperation Agency (JICA), and the other agencies concerned of the Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia was held at the Conference Room of MPWT on the 10th of July, 2015. Discussions and exchanges of opinion were made, which resulted in the mutual agreement on several items as briefly described below.

1. Proposal on JCC Members and the Establishment of Execution Committee and Members

Members of the JCC were proposed and approved in the meeting. The Execution Committee (hereinafter referred to as "EC") and its members were also proposed to directly manage the implementation of the Project as well as to report on all progress and achievements to the JCC. The list of members of JCC and EC is herewith attached as Attachment 2 and Attachment 3, respectively.

As for the selection of DPWTs for EC, the number of DPWTs was limited to six (6) since prioritization of technical transfer to the selected six DPWTs during the Project period could make the process more efficient. MPWT and the six DPWTs are expected to sustainably continue the technical transfer to the other 19 DPWTs after the completion of the Project.

2. Approval for Project Design Matrix (PDM) Ver. 1

The Project Design Matrix (hereinafter referred to as "PDM") Ver. 1 was approved by the JCC members. PDM Ver. 0, which was previously agreed as shown in the Record of Discussion, was revised into PDM Ver. 1. Copies of PDM Ver. 0 and Ver. 1 are given in Attachment 4.

3. Approval for Plan of Operation (PO) Ver. 1

The Plan of Operation (hereinafter referred to as "PO") Ver. 1 was approved by the JCC members as well. Copies of the PO Ver. 0 and Ver. 1 are given in Attachment 5.

4. Monitoring of the Project

The monitoring methods of the Project were agreed with the JCC members as follows:

(1) To confirm the achievements of the target indicators every six (6) months at the JCC meetings.
(2) To amend the target indicators or objectively verifiable indicators and/or required activities in consideration of the sustainability of the Project, if required.
(3) In order to describe the progress of objectively verifiable indicators in the PDM, the progress of activities is to be described in the PO, and the amendments are to be shown in the Monitoring Sheet.

5. Work Plan

A Work Plan was submitted and its major points were explained.

It was proposed to conduct the inspection of 2000 bridges and the preparation of bridge inventory by employing a Tablet System in order to develop the initial database for bridges along the national roads. For the inspections, it was proposed and agreed to form the inspection teams with EC members and to set the target date for completion of the inspection as "by the end of September 2015".

It was also proposed and agreed to employ the DRIMS (Dynamic Response Intelligent Monitoring System) which measures IRI (International Roughness Index) for the evaluation of road surface conditions.

It was agreed that a part of the required funds for the above inspections (2000 bridge inspections and IRI measurements by DRIMS) will be shouldered by the JICA Expert Team for the first year of the Project, because these inspections will be the first maintenance activities in Cambodia and no fund has been allocated by MPWT yet. The MPWT will request the Ministry of Economy and Finance (MEF) to allocate the required funds for these inspections without the financial

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assistance of the JICA Expert Team from the second year of the Project in consideration of sustainability of the newly introduced inspection methods and/or procedures.

Additionally, it was agreed that the Project will be discussed with MEF in the Annual Action Plan for road and bridge maintenance activities so that the budget plan will be approved by MEF. It is important that sustainability of the Annual Action Plan shall contribute to the formulation of "an annual budget preparation cycle".

JCC members have made comments on the following four (4) items:

(1) Total road length of DRIMS application for the future maintenance work;
(2) Schedule and Plan for technical transfer to the other DPWTs that were not selected as targets for the technical transfer after the Project;
(3) The necessary time for update of information on roads and bridges with the new maintenance system; and
(4) The necessary amounts of budget for road and bridge inspections using the new maintenance system.

It was agreed with the JCC members that items "(1) to (3)" above will be explained in the 2nd JCC meeting, based on the progress of the project. As regards item "(4)", the Project will submit the approximate inspection cost before the next inter-ministerial committee meeting to be held in the end of July, 2015.

6. Target DPWTs of Pilot Project for the First Year

It was explained that the Project will conduct pilot projects for bridge/road inspections and repair during the project in the selected DPWTs. It was agreed to select Kandal DPWT and Phnom Penh DPWT for the first year of the Project.

7. Other Issues

The progress up to July 2015 and the further activity plan were submitted and discussed.

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CONFIRMED BY:

H.E. TAUCH Chankosal
Secretary of State
MPWT

Takashi Ito
Senior Representative
JICA Cambodia Office

H.E. KEM Borey
Director General of Public Works

Koichi Ogawa
Chief Adviser

Nay Chamnang
Director, Road Infrastructure Department
MPWT

For
Yuzo MIZOTA
Team Leader
JICA Expert Team

Men Vivoit Vithiea
Chief of Office, Investment Department
MEF

Attachment 1: Agenda of the JCC Meeting (July 10, 2015)

1st Joint Coordinating Committee Meeting
for
The Project for Strengthening Capacity for Maintenance of Roads and Bridges

Date	:	10 July, 2015
Time	:	15:00 – 17:00
Venue	:	Ministry of Public Works and Transport, 2F Conference Room

Participants:

1. H.E. TAUCH Chankosal Secretary of State
2. H.E. KEM Borey Director General of Public Works
3. Mr. NOU Vaddhanak Deputy Director General of Public Works
4. Ms. Bok Ratha Deputy Chief of Ministry of Foreign Affairs and International Cooperation
5. Mr. Men Vivoit Vithiea Chief of Office of Ministry of Economy and Finance
6. Mr. Nay Chamnang Director of Road Infrastructure Department
7. Mr. Phy Lyda Director of Heavy Equipment Center
8. Mr. Song Sineth Deputy Director of Road Maintenance Center
9. Mr. Tan Thira Deputy Director of Sub-national Public Infrastructure Engineering Department
10. Mr. Chhim Phalla Director of International and Cooperation Department
11. Mr. Phibal Deputy Director of Road Infrastructure Department
12. Mr. You Dara Director of Road Infrastructure Department
13. Mr. Bou Lindo Office of Road Maintenance Center
14. Mr. Hin Son Odom Deputy Chief of Road Maintenance Center
15. Mr. Takashi Ito Senior Representative of JICA Cambodia Office
16. Ms. Seng Solady Program Officer, JICA Cambodia Office
17. Mr. Taizo Chiba Second Secretary, Embassy of Japan
18. Mr. Koichi Ogawa Chief Advisor, JICA Expert Team
19. Mr. Yozo Mizota Team Leader, JICA Expert Team
20. Mr. Kazuo Yumita Coordinator, JICA Expert Team
21. Mr. Hiroaki Ohtake Coordinator, JICA Expert Team

Agenda:

Topics	Speaker	Time
1. Moderator /MC	Director, RID Mr. Nay Chamnang	15:00 -15:05
2.Opening Remarks and Introduction of Participants	Secretary of State H.E. Tauch Chankosal	15:05 – 15:10
3. Opening Remarks by JICA Cambodia	JICA Senior Representative Mr. Takashi Ito	15:10 – 15:15
4. Project outline and items for approval	Deputy Director, RID Mr.Chao Sopheak Phibal	15:15 - 15:45
5. Approval	Mr. Nay Chamnang	15:45 – 16:15
6. Report on Progress Made between April to June 2015 and further activities	RID, Deputy Director Mr.You Dara	16:15 – 16:30
7. Q and A	Director, RID Mr. Nay Chamnang	16:30 – 16:50
8. Closing Remarks	H.E. Tauch Chankosal	16:50 – 17:00

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Attachment 2: List of JCC Member

1.	H.E. TAUCH Chankosal	Secretary of State,	President
2.	H.E. KEM Borey	Director General of Public Works,	Permanent Vice-president
3.	H.E VA Simsoriya	Director General of Administration	Vice-president
4.	Mr. NOU Vaddhanak	Deputy Director General of Public Works	Member
5.	Representative from Ministry of Foreign Affairs and International Cooperation,		Member
6.	Representative from Ministry of Economy and Finance		Member
7.	Representative Council for Development of Cambodia		Member
8.	Director of Road Infrastructure Department		Member
9.	Director of Public Works Research Center		Member
10.	Director of Heavy Equipment Center		Member
11.	Director of Road Maintenance Center		Member
12.	Director of Sub-national Public Infrastructure Engineering Department		Member
13.	Director of Accounting and Finance Department		Member
14.	Director of International and Cooperation Department		Member
15.	Mr.Adachi Itsu, Chief Representative of JICA Cambodia Office		Member
16.	Mr.Taizo CHIBA,	Second Secretary, Embassy of Japan	Member
17.	JICA Experts for the Project		Member

Attachment 3 : List of Execution Committee Member

1.	Mr. Nay Chamnang	Director of Road Infrastructure Department		Project Director
2.	Mr.Chao Sopheak Phibal	Deputy Director of Road Infrastructure Department		Deputy Project Director
3.	Mr. YOU Dara	Deputy Director of Road Infrastructure Department		Permanent Member
4.	Representative from Ministry of Economy and Finance			Member
5.	JICA Experts for the Project for Strengthening Capacity for Maintenance of Road and Bridge			Member
6.	Mr. KEM Socheat	Chief Office	(RID)	Member
7.	Mr. KHOUN Kompheak	Chief Office	(RID)	Member
8.	Mr. SA Sivutha	Chief Office	(RID)	Member
9.	Mr. POU Manith	Chief Office	(RID)	Member
10.	Mr. EM Sovisoth	Deputy Chief Office	(RID)	Member
11.	Mr. NIN Menakak	Deputy Chief Office	(RID)	Member
12.	Ms. THOU Saovry	Deputy Chief Office	(RID)	Member
13.	Mr. NGIM Nouba	Deputy Chief Office	(RID)	Member
14.	Mr. HAI Chandara	Deputy Chief Office	(RID)	Member
15.	Mr. NOP Kilarith	Deputy Chief Office	(RID)	Member
16.	Mr. SETHY Phanavuth	Deputy Chief Office	(RID)	Member
17.	Mr. VETH Piseth	Deputy Chief Office	(RID)	Member
18.	Mr. EM Bunnara	Deputy Chief Office	(SPIED)	Member
19.	Mr. LEAS Thlork	Deputy Chief Office	(SPIED)	Member
20.	Mr. LUN Virakvicheatra	Deputy Chief Office	(RMC)	Member
21.	Mr. HIN Son Odom	Deputy Chief Office	(RMC)	Member
22.	Mr. BOU Lindo	Officer	(RMC)	Member
23.	Mr. LONG Marly	Officer	(RID)	Member
24.	Mr. HOUT Sara	Officer	(RID)	Member
25.	Ms. CHHAY Chakriya	Officer	(RID)	Member
26.	Mr. PROMCHAN Moni Odom	Officer	(PWRC)	Member
27.	Mr. CHAN Rith	Officer	(PWRC)	Member
28.	Mr. VORK Sovan	Officer	(HEC)	Member
29.	Mr. HOUNG Sopheaktra	Officer	(HEC)	Member
30.	Representative from Department of Public Works Kandal Province			Member
31.	Representative from Department of Public Works K.Cham Province			Member
32.	Representative from Department of Public Works Battambang Province			Member
33.	Representative from Department of Public Works Seim Reab Province			Member
34.	Representative from Department of Public Works K.Thom Province			Member
35.	Representative from Department of Public Works Phnom Penh			Member

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Attachment 4: PDM ver.0 and ver.1

PDM ver.0

Project Design Matrix (PDM): Version 0.

(Dated: December 25, 2014)

Project Title: The Project for Strengthening Capacity for Maintenance of Roads and Bridges
Period: April 2015 – May 2017
Implementation Organizations: Road Infrastructure Department of Ministry of Public Work and Transport (RID MPWT)
Target Area: Roads and Bridges under M PWT
Target Groups: Engineers of RID

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
Overall Goal Appropriate maintenance of roads and bridges is managed by MPWT.	1. The road and bridge database is updated X^1 time/ X^2 year. 2. Road and bridge maintenance plans are updated X^1 time/ X^2 year based on the result of the road and bridge database updated. 3. Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID. 4. The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1. Log record of the database, random sample check of individual data 2. The maintenance plans, corresponding data from the database 3. The maintenance record, the maintenance plans and manuals 4. Minutes of the review meeting	- Country's socio-political situation does not change rapidly.
Project Purpose Capacity of RID to supervise implementing bodies maintaining roads and bridges is enhanced.	1. Inspection results done by the three target DPWTs are approved by RID based on the manuals by the end of the project. 2. Repair results done by the two target DPWTs are approved by RID based on the manuals by the end of the project. 3. The above two target DPWTs prepare a draft budget for roads and bridges maintenance for FY 2018 respectively within pre-agreed schedule. 4. Road and bridge maintenance cycle is explained and shared to concerning offices and units at the project wrap-up seminar. 5. More than XX% of the above seminar participants show interests to practice road and bridge maintenance cycle.	1. DPWT inspection reports and on-site confirmation by RID 2. DPWT repair reports and on-site confirmation by RID. 3. The said draft budget and its submission date 4. Number and name of the participated offices and unit 5. Interest level of the participants through the questionnaire.	- Organizational arrangement of MPWT is not changed drastically.
Outputs 1. The bridge maintenance cycle is	1-1. The annual action plan for bridge maintenance cycle is	1-1. The annual action plan and it's	- The trained

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Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
established.	developed by MM/2015. 1-2. The above action plan is approved by MM every year. 1-3. More than XX % of RID engineers pass exam of bridge maintenance cycle. 1-4. The annual bridge maintenance budget is drafted at the target DPWTs by MM every year.	date developed 1-2. The approved date 1-3. The exam results and participants list 1-4. The drafted budget and its date	staff/officers remain at the job. - Roles of DPWTs and other concerning offices and units are not changed including budget preparation system.
2. Road and bridge inspection capacity of RID is enhanced.	2-1. The road and bridge maintenance manuals are prepared by MM/2017. 2-2. The selected X roads and Y bridges in the targeted DPWTs are inspected according to the maintenance manual. 2-3. The inspection results are registered to the road and bridge database by RID within XX weeks after the inspection. 2-4. More than XX% of RID's engineers pass road and bridge inspection test.	2-1. The manuals and its' date prepared 2-2. Inspection record and sample on-site confirmation 2-3. Inspection record and corresponding data for sample check 2-4. The test results and participants list	
3. Road and bridge repair capacity of RID is enhanced.	3-1. The road and bridge repair manuals are prepared by MM/2017. 3-2. The identified X' roads and Y' bridges in the targeted DPWTs are repaired according to the repair manuals and the inspection results. 3-3. The repair results are registered to the road and bridge database by RID within XX weeks after the repair. 3-4. More than XX% of RID's engineers pass road and bridge repair test.	3-1. The manuals and its' date prepared 3-2. Repair record and sample on-site confirmation 3-3. Repair record and corresponding data for sample check 3-4. The test results and participants list	
4. Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.	4-1. More than XX% of seminar-training participants passes the road and bridge inspection exam in each case. 4-2. More than XX% of seminar-training participants passes the road and bridge repair exam in each case. 4-3. More than XX% of seminar-training participants satisfied teaching method of RID engineers in each case.	4-1. The exam results and participants list 4-2. The exam results and participants list 4-3. Review by the participants	

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Activities	Inputs		
1-1. To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system 1-2. To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results 1-3. To test the action plan 1-4. To hold workshop of the bridge maintenance cycle 1-5. To prepare draft annual bridge maintenance budget 2-1. To review and develop road maintenance manual, including a database framework 2-2. To review and develop bridge maintenance manual, including a database framework 2-3. To hold training workshops on road and bridge inspections 2-4. To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs 2-5. To register the inspection results in the database at the target DPWTs 2-6. To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops 3-1. To review and establish road repair manual 3-2. To review and establish bridge repair manual 3-3. To hold training workshops on road and bridge repairs 3-4. To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs 3-5. To establish repair plan for the identified roads and bridges at the target DPWTs 3-6. To repair the identified roads and bridges at the target DPWTs 3-7. To evaluate the above repair works 3-8. To revise the road and bridge repair manual	(Japan side) 1. A chief advisor / A long term expert 2. Short term experts 1) Team Leader / Bridge maintenance engineer 2) Deputy-project manager / Bridge repair engineer 3) Bridge Inspection Engineer 4) Road Engineer 5) Coordinator 3. Equipment for road and bridge maintenance 4. C/P training 5. Cost for Seminars and Trainings as the project activities	(Cambodia side) 1. Arrangement of counterpart personnel 1) Project Director 2) Project Manager 3) Other Necessary Personnel 2. Implementation cost for the pilot repair works 3. Travel expenses and allowances for the participants of the seminars and trainings organized as the project activities 4. Maintenance cost of the JICA project equipment 5. Office space including its utility cost (electricity, water, internet and other necessary office facilities) 6. Etc.	- Conditions of roads and bridges under MPWT are not rapidly deteriorated. - Flood with large scale is not occurred annually. Pre-condition N/A

incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop 4-1. To organize seminars for other DPWTs – trainings on road and bridge inspection 4-2. To organize seminars for other DPWTs – trainings on road and bridge repair 4-3. To organize the project wrap-up seminar			

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PDM ver.1

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Project Monitoring Sheet I (Revision of Project Design Matrix)

Version 1

Dated July 2015

Project Title: The Project for Strengthening Capacity for Maintenance of Roads and Bridges
Implementation Agency: Road Infrastructure Department of Ministry of Public Work and Transport (RID MPWT)
Target Groups: Engineers of RID
Period of Project: April 2015 – March 2018
Project Site: Cambodia
Target Area: Roads and Bridges under MPWT

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
Overall Goal Appropriate maintenance of roads and bridges is managed by MPWT.	1. The road and bridge database is updated once / a year. 2. Road and bridge maintenance plans are updated once / a year base on the result of the road and bridge database updated. 3. Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID. 4. The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1. Log record of the database, random sample check of individual data 2. The maintenance plans, corresponding data from the database 3. The maintenance record, the maintenance plans and manuals 4. Minutes of the review meeting	- Country's socio-political situation does not change rapidly.		
Project Purpose Capacity of RID to supervise implementing bodies maintaining roads and bridges is enhanced.	1. Inspection results done by the three target DPWTs are approved by RID based on the manuals by the end of the Project. 2. Repair results done by the two target DPWTs are approved by RID base on the manuals by the end of the Project.	1. DPWT inspection reports and on-site confirmation by RID 2. DPWT repair reports and on-site confirmation by RID. 3. The said draft budget and	- Organizational arrangement of MPWT is not changed drastically.		

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Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
	3. The above two target DPWTs prepare a draft budget for roads and bridge maintenance for FY 2018 respectively within pre-agreed schedule. 4. Road and bridge maintenance cycle is explained and shared to concerning offices and units at the project wrap-up seminar. 5. Maintenance budget of road and bridge is prepared by RID according to the road and bridge maintenance cycle	its submission date 4. Number and name of the participated offices and unit 5. Interest level of the participants through the questionnaire.			
Outputs 1. The bridge maintenance cycle is established.	1-1. The annual action plan for bridge maintenance cycle is developed by June every year for each targeted DPWT. 1-2. The above action plan is approved by August every year. 1-3. At least 5 officials of RID engineers pass exam of bridge maintenance cycle. 1-4. The annual bridge maintenance budget is drafted at the target DPWTs of 2nd year and 3rd year by May every year.	1-1. The annual action plan and it's date developed 1-2. The approved date 1-3. The exam results and participants list 1-4. The drafted budget and its date	- The trained staff/officers remain at the job. - Roles of DPWTs and other concerning offices and units are not changed including budget preparation system.		
2. Road and bridge inspection capacity of RID is enhanced.	2-1. The road and bridge maintenance manuals are drafted by August 2015 and finalized by June 2017. 2-2. The selected roads and bridges in the targeted DPWTs are inspected according to the maintenance manual. 2-3. The inspection results are registered to the road and bridge database by RID until November every year. 2-4. At least 5 officials of RID's engineers pass road and bridge inspection test.	2-1. The manuals and its' date prepared 2-2. Inspection record and sample on-site confirmation 2-3. Inspection record and corresponding data for sample check 2-4. The test results and participants list			

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Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
3. Road and bridge repair capacity of RID is enhanced.	3-1. The road and bridge repair manuals are drafted by January 2016 and finalized by June 2017. 3-2. The identified roads and bridges in the targeted DPWTs are repaired according to the repair manuals and the inspection results. 3-3. The repair results are registered to the road and bridge database by RID within 1 month after the completion of repair works. 3-4. At least 5 officials of RID's engineers pass road and bridge repair test.	3-1. The manuals and its' date prepared 3-2. Repair record and sample on-site confirmation 3-3. Repair record and corresponding data for sample check 3-4. The test results and participants list			
4. Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.	4-1. Bridge inspection is carried out at the more than 80% DPWTs (20/25 DPWTs). 4-2. More than 80% DPWTs attends the seminar held in the Project. 4-3. The project activities are disseminated to other agencies concerning road/bridge maintenance. (number is not specified but with increments through the project)	4-1. Bridge inventory data 4-2. The participants list 4-3. Publicity matter			

Activities	Inputs		
1-1. To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system 1-2. To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results 1-3. To practice the action plan 1-4. To hold workshop of the bridge maintenance cycle 1-5. To prepare draft annual bridge maintenance budget	(Japan side) 1 A chief advisor / A long term expert 2 Short term experts 1) Team Leader / Bridge Maintenance Engineer 2) Deputy-team leader / Road Maintenance Planner	(Cambodia side) 1 Arrangement of counterpart personnel 1) Project Director 2) Project Manager 3) Other Necessary Personnel 2 Implementation cost for the pilot repair works	- Conditions of roads and bridges under MPWT are not rapidly deteriorated. - Flood with large scale is not occurred annually.

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2-1. To review and develop road maintenance manual 2-2. To review and develop bridge maintenance manual, including a database frame 2-3. To hold training workshops on road and bridge inspections 2-4. To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs 2-5. To register the inspection results in the database at the target DPWTs 2-6. To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops 3-1. To review and establish road repair manual 3-2. To review and establish bridge repair manual 3-3. To hold training workshops on road and bridge repairs 3-4. To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs 3-5. To establish repair plan for the identified roads and bridges at the target DPWTs 3-6. To repair the identified roads and bridges at the target DPWTs 3-7. To evaluate the above repair works 3-8. To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop 4-1. To organize seminars for other DPWTs – trainings on road and bridge inspection 4-2. To organize seminars for other DPWTs – trainings on road and bridge repair 4-3. To organize the project wrap-up seminar	3) Bridge Inspection Engineer 4) Bridge Repair Engineer (1) (Planning and Design) 5) Bridge Repair Engineer (2) (Repairing work Expert) 6) Bridge Maintenance Planner 7) Road Maintenance Engineer(1) 8) Road Maintenance Engineer(2) 9) Coordinator / Assistant for Road and Bridge Inspection 10) Coordinator for other relevant project / C/P training Supervision 3 Equipment for road and bridge maintenance 4 C/P training 5 Cost for seminars and Trainings as the project activities	3 Travel expenses and allowances for the participants of the seminars and trainings organized as the project activities 4 Maintenance cost of the JICA project equipment 5 Office space including its utility cost (electricity, water, internet and other necessary office facilities) 6 Etc.	

Attachment 5: PO ver.0 and ver.1

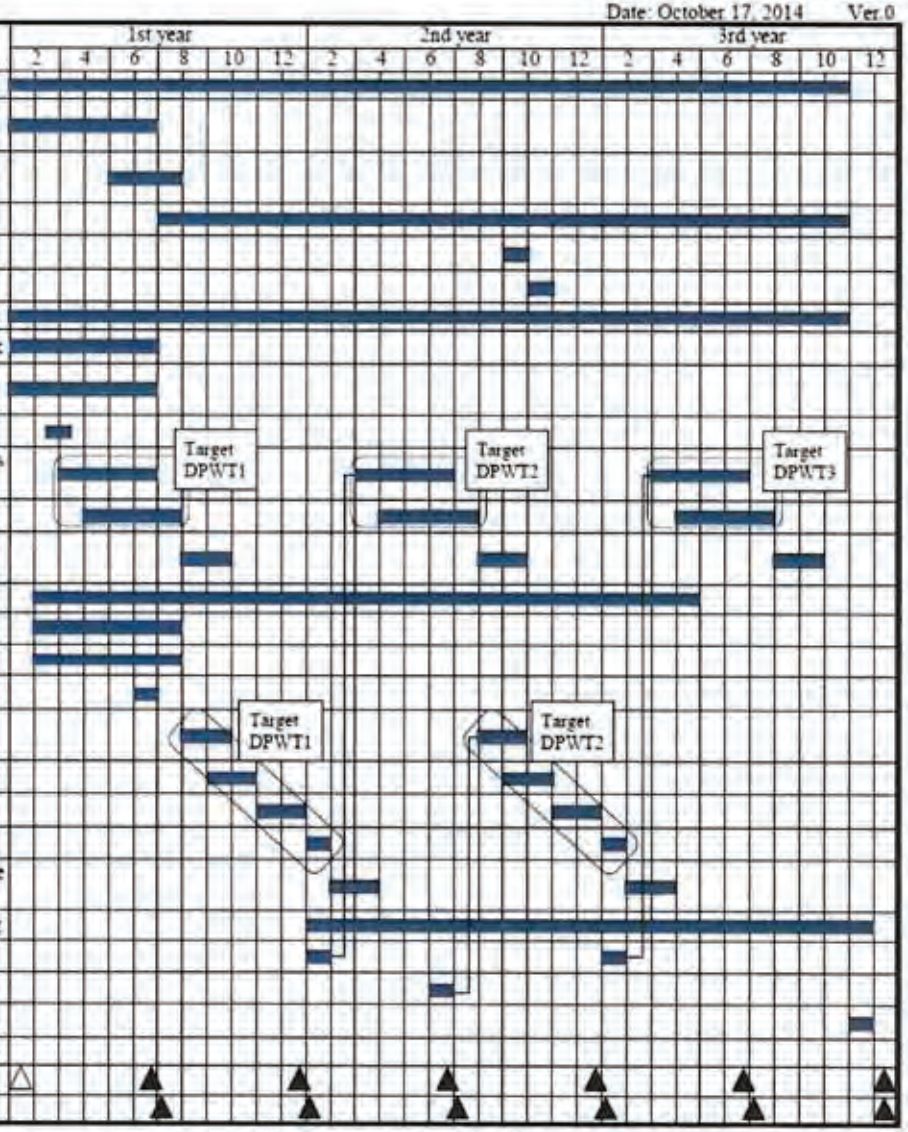
PO ver.0

Annex II

Plan of Operation

Date: October 17, 2014 Ver.0

		Project Activities
1		**The bridge maintenance cycle is established.**
	1-1	To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system
	1-2	To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenancecycle based on the review results
	1-3	To test the action plan
	1-4	To hold workshops of the bridge maintenance cycle
	1-5	To prepare draft annual bridge maintenance budget
2		**Road and bridge inspection capacity of RID is enhanced.**
	2-1	To review and develop road maintenance manual, including a database framework
	2-2	To review and develop bridge maintenance manual, including a database framework
	2-3	To hold training workshops on road and bridge inspections
	2-4	To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs
	2-5	To register the inspection results in the database at the target DPWTs
	2-6	To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops
3		**Road and bridge repair capacity of RID is enhanced.**
	3-1	To review and establish road repair manual
	3-2	To review and establish bridge repair manual
	3-3	To hold training workshops on road and bridge repairs
	3-4	To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs
	3-5	To establish repair plan for the identified roads and bridges at the target DPWTs
	3-6	To repair the identified roads and bridges at the target DPWTs
	3-7	To evaluate the above repair works
	3-8	To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop
4		**Road and bridge maintenance cycle is introduced to other DPWTs and concerning**
	4-1	To organize seminars - trainings on road and bridge inspection
	4-2	To organize seminars - trainings on road and bridge repair
	4-3	To organize the project wrap-up seminar
Project Administration Activities		
		Joint Coordination Committee (JCC)
		Submission of the project progress report



PO ver.1

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Project Monitoring Sheet I (Revision of Plan of Operation)

Project Title: The Project for Strengthening Capacity for Maintenance of Roads and Bridges

Ver. 1

Date: April, 2015

INPUTS	Expert in charge	Plan/ Actual	2015 4	5	6	7	8	9	10	11	12	2016 1	2	3	4	5	6	7	8	9	10	11	12	2017 1	2	3	4	5	6	7	8	9	10	11	12	2018 1	2	3	Remarks	Monitoring Actual	Monitoring Evaluation
Expert																																									
Chief Advisor	OGAWA Koichi	Plan																																							
		Actual																																							
Team Leader / Bridge Maintenance Engineer	MIZOTA Yuzo	Plan																																							
		Actual																																							
Deputy Team Leader / Road Maintenance Planner	NAKAJIMA Takashi	Plan																																							
		Actual																																							
Bridge Repair Engineer (1) (Planning and Design)	TOKUMASU Ken	Plan																																							
		Actual																																							
Bridge Repair Engineer (2) (Repairing Work Expert)	----	Plan																																							
		Actual																																							
Bridge Inspection Engineer	TSUKAMOTO Shigeaki	Plan																																							
		Actual																																							
Bridge Maintenance Planner	WATANABE Masatoshi	Plan																																							
		Actual																																							
Road Maintenance Engineer (1)	----	Plan																																							
		Actual																																							
Road Maintenance Engineer (2)	----	Plan																																							
		Actual																																							
Coordinator / Assistant for Road and Bridge Inspection	OHTAKE Hiroaki	Plan																																							
		Actual																																							
Coordinator for other Relevant Project	YUMITA Kazuo	Plan																																							
		Actual																																							
Equipment																																									
Equipment for Pilot Project		Plan																																							
		Actual																																							
Training in Japan																																									
		Plan																																							
		Actual																																							

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	ACTIVITIES	Expert in charge	Plan / Actual	2015	2016	2017	2018	Person-day (Expatriate) Japan	Person-day (Expatriate) Cambodia	Achievement	Note 1 Counterpart work
				4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3				
Output-1: The bridge maintenance cycle is established											
1-1	To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system										
1-1-1	To collect existing Data and analyze them with RID	Ogawa / Mizota	Plan								
			Actual								
1-1-2	To study the cases of Japanese bridge maintenance cycle that be able to apply to Cambodia	Mizota / Tokumasu / Tsukamoto	Plan								
			Actual								
1-1-3	To review the result and discuss with RID	Ogawa / Tokumasu / Tsukamoto	Plan								
			Actual								
1-2	To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results										
1-2-1	To draft the action plan with RID	Mizota / Nakajima / Tokumasu	Plan								
			Actual								
1-2-2	To supervise "1.2.1 activities" and review with RID for final action plan	Ogawa / Mizota / Nakajima	Plan								
			Actual								
1-3	To practice the action plan										
1-3-1	To supervise the action of RID and the other organization	Mizota/Nakajima/ Tokumasu/Tsukamoto	Plan								
			Actual								
1-3-2	To supervise "1.3.1 activities" and evaluate it with RID	Ogawa /Mizota	Plan								
			Actual								
1-4	To hold workshops of the bridge maintenance cycle										
1-4-1	To prepare workshops and materials for the workshops and explain their part at workshops with RID	Nakajima/Tokumasu/ Tsukamoto	Plan								
			Actual								
1-4-2	To organize the workshops and review the result with RID	Ogawa / Mizota / Nakajima / Watanabe	Plan								
			Actual								
1-5	To prepare draft annual bridge maintenance budget										
1-5-1	To draft the maintenance budget of target DPWT	Mizota / Nakajima / Watanabe	Plan								
			Actual								
1-5-2	To draft the maintenance budget with RID	Mizota / Nakajima / Watanabe	Plan								
			Actual								
1-5-3	To supervise "1.5.2 activities" and review drafts with RID	Ogawa	Plan								
			Actual								

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ACTIVITIES		Expert in charge	Plan/ Actual	2013												2014												2015												2016			Achievements	Issue & Countermeasure
				4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	Yesterday (Yesterday)	Today (Tomorrow)		
Output-2: Road and bridge inspection capacity of RID is enhanced.																																												
2-1	To review and develop road maintenance manual																																											
2-1-1	To review road maintenance manual with RID	Nakajima / Ohtake	Plan																																									
			Actual																																									
2-1-2	To draft new road maintenance manual with RID	Nakajima / Ohtake	Plan																																									
			Actual																																									
2-1-3	To supervise "2.1.1-2 activities" and review it with RID	Ogawa / Nakajima	Plan																																									
			Actual																																									
2-2	To review and develop bridge maintenance manual, including a database framework																																											
2-2-1	To draft new bridge maintenance manual with RID	Tokumasu/ Tsukamoto/Watanabe	Plan																																									
			Actual																																									
2-2-2	To supervise "2.2.1 activities" and review it with RID for finalizing bridge maintenance manual	Ogawa/Tokumasu/ Tsukamoto/Ohtake	Plan																																									
			Actual																																									
2-3	To hold training workshops on road and bridge inspections																																											
2-3-1	To prepare workshops and materials for the workshops and explain their part at workshops with RID	Tokumasu/Tsukamoto/ Ohtake/Watanabe	Plan						As Needed											As Needed													As Needed										
			Actual																																									
2-3-2	To organize the workshops and review the result with RID	Ogawa/Tokumasu/ Tsukamoto/Ohtake	Plan						As Needed											As Needed													As Needed										
			Actual																																									
2-4	To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs																																											
2-4-1	To prepare draft inspection plan for roads and bridges with RID	Nakajima/Tokumasu/ Tsukamoto/Ohtake	Plan																																									
			Actual																																									
2-4-2	To implement road and bridge inspection with RID and DPWTs engineers at the target DPWTs	Tokumasu/ Tsukamoto/Ohtake	Plan																																									
			Actual																																									
2-4-3	To prepare rough cost estimation of the repair works for roads and bridges with RID	Tokumasu / Tsukamoto / Ohtake	Plan																																									
			Actual																																									
2-4-4	To supervise "2.4.1-3 activities" and discuss with RID	Ogawa / Mizota/ Tokumasu/Tsukamoto	Plan																																									
			Actual																																									
2-5	To register the inspection results in the database at the targeted DPWTs																																											
2-5-1	To register the inspection results of roads with RID	Nakajima / Ohtake	Plan																																									
			Actual																																									
2-5-2	To register the inspection results of bridges with RID	Tokumasu/Tsukamoto/ Watanabe	Plan																																									
			Actual																																									
2-5-3	To supervise "2.5.1-2 activities" and review the result with RID	Ogawa / Mizota	Plan																																									
			Actual																																									
2-6	To register the inspection results in the database at the targeted DPWTs																																											
2-6-1	To revise the road and bridge maintenance manual with RID	Mizota/Nakajima/ Tokumasu/Tsukamoto	Plan																																									
			Actual																																									
2-6-2	To prepare workshops and materials for the workshops and explain their part at workshops with RID	Mizota/Nakajima/ Tokumasu/Watanabe	Plan																																									
			Actual																																									
2-6-3	To organize the workshops and review the result with RID	Ogawa/Mizota / Nakajima	Plan																																									
			Actual																																									

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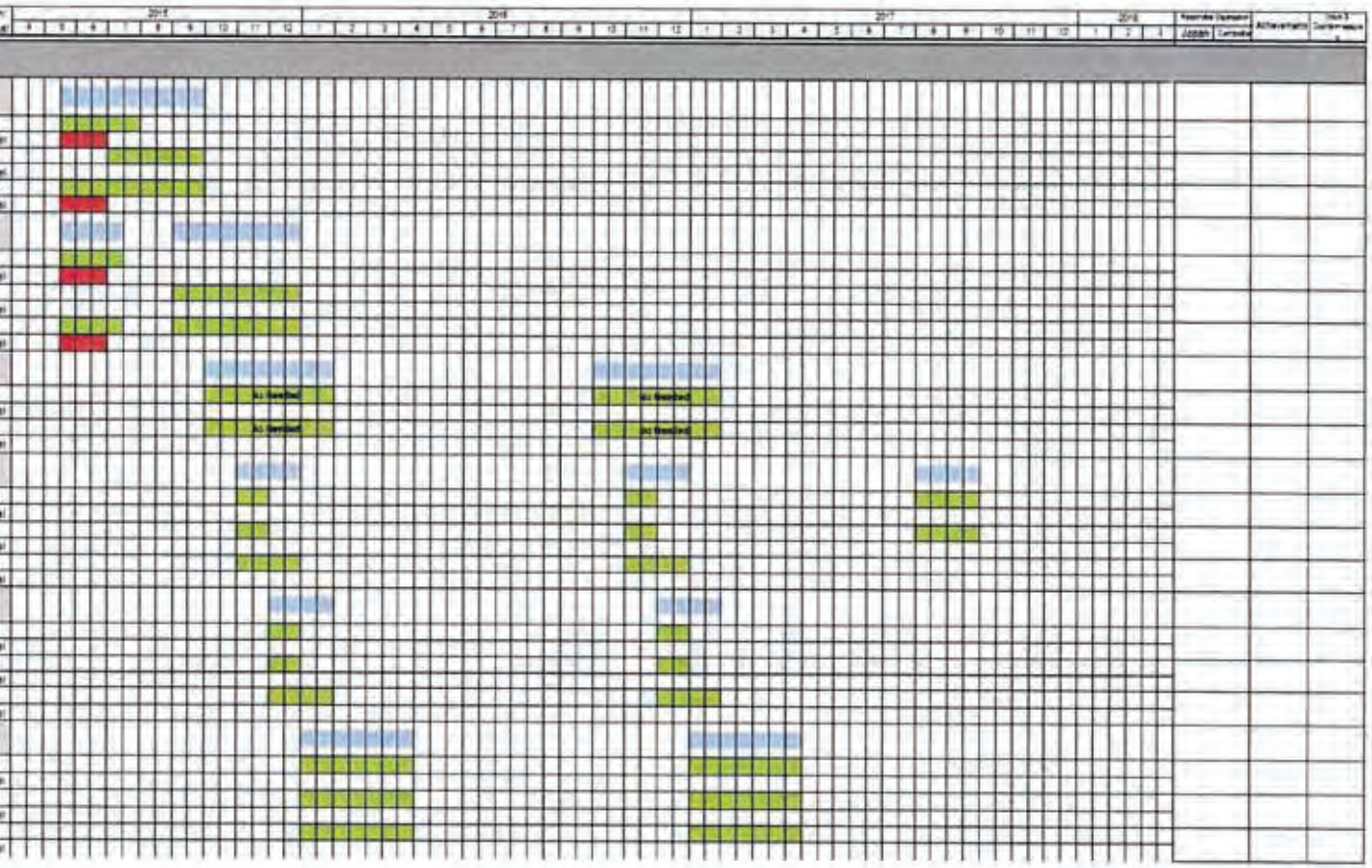
	ACTIVITIES	Expert in charge	Plan/ Actual
Output-3. Road and bridge repair capacity of RID is enhanced			
3-1	To review and establish road repair manual		
3-1-1	To review road repair manual with RID	Nakajima	Plan / Actual
3-1-2	To draft new road repair manual with RID	Nakajima	Plan / Actual
3-1-3	To supervise "3.1.1-2 activities" and review the result with RID for finalize repair manual	Ogawa / Nakajima	Plan / Actual
3-2	To review and establish bridge repair manual		
3-2-1	To review bridge repair manual with RID	Mizoto / Tokumasu	Plan / Actual
3-2-2	To draft new bridge repair manual with RID	Mizoto / Tokumasu	Plan / Actual
3-2-3	To supervise "3.2.1-2 activities" and review the result with RID for finalize repair manual	Ogawa / Mizoto / Tokumasu	Plan / Actual
3-3	To hold training workshops on road and bridge repairs		
3-3-1	To prepare workshops and materials for the workshops and explain their part at workshops with RID	Tokumasu	Plan / Actual
3-3-2	To organize the workshops and review the result with RID	Ogawa / Mizoto / Tokumasu	Plan / Actual
3-4	To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs		
3-4-1	To prepare priority sites list of roads for the pilot repair works with RID	Mizoto / Nakajima	Plan / Actual
3-4-2	To prepare priority sites list of bridges for the pilot repair works with RID	Mizoto / Nakajima / Tokumasu	Plan / Actual
3-4-3	To identify roads and bridges for the pilot repair works with RID	Ogawa	Plan / Actual
3-5	To establish repair plan for the identified roads and bridges at the target DPWTs		
3-5-1	To draft repair plan for roads with RID	Nakajima	Plan / Actual
3-5-2	To draft repair plan for bridges with RID	Tokumasu	Plan / Actual
3-5-3	To review and finalize repair plan for the identified roads and bridges with RID	Ogawa / Mizoto	Plan / Actual
3-6	To repair the identified roads and bridges at the target DPWTs		
3-6-1	To repair the identified roads with RID and DPWTs engineers at the target DPWTs	Nakajima	Plan / Actual
3-6-2	To repair the identified bridges with RID and DPWTs engineers at the target DPWTs	Tokumasu	Plan / Actual
3-6-3	To supervise "3.6.1-2 activities" and discuss with RID	Ogawa / Mizoto	Plan / Actual



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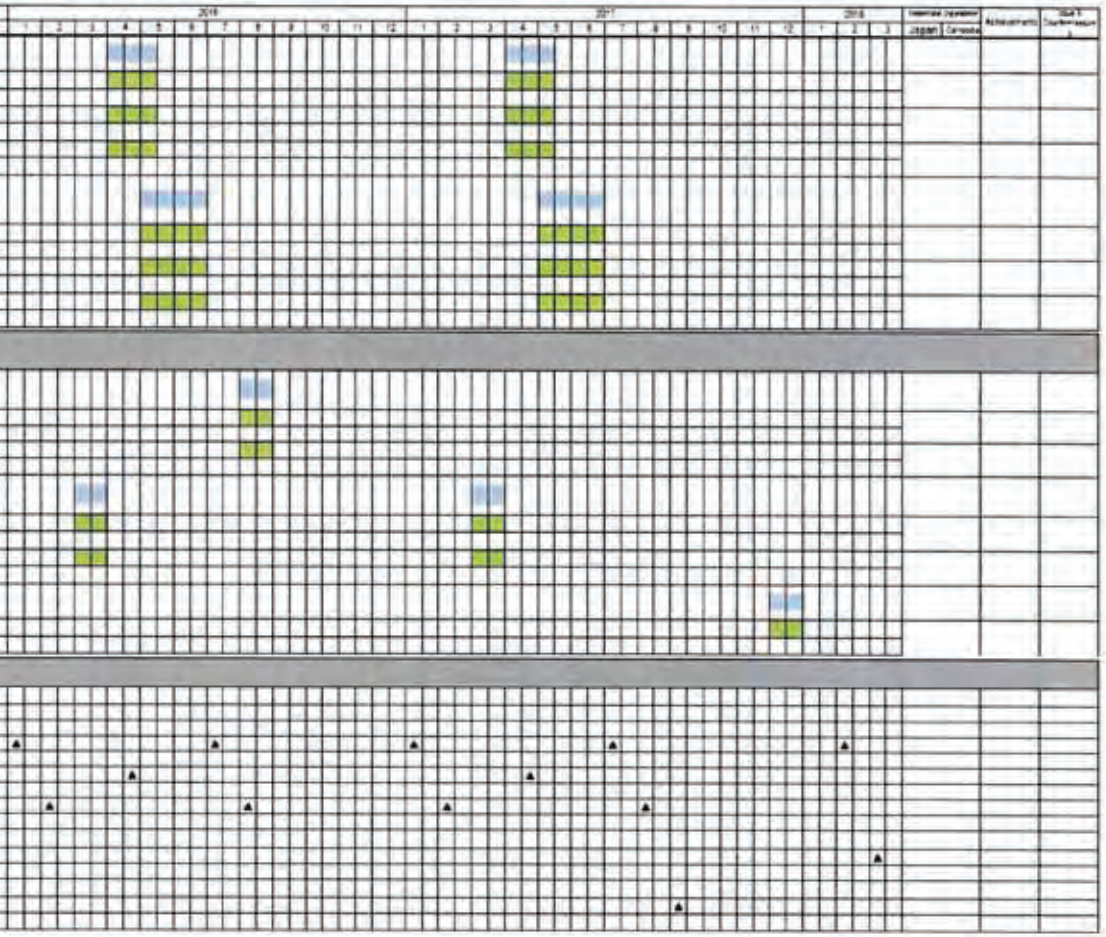
	ACTIVITIES	Expert in charge	Plan/Actual
3-7	To evaluate the above repair works		
3-7-1	To prepare evaluation report of the roads repair works with RID	Nakajima	Plan
			Actual
3-7-2	To prepare evaluation report of the bridges repair works with RID	Tokumasu	Plan
			Actual
3-7-3	To supervise "3.7 1-2 activities" and review the result with RID	Ogawa / Mizota	Plan
			Actual
3-8	To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop		
3-8-1	To draft revise version of road repair manual with RID	Mizota / Nakajima / Tokumasu	Plan
			Actual
3-8-2	To draft revise version of bridge repair manual with RID	Mizota / Nakajima / Tokumasu	Plan
			Actual
3-8-3	To supervise "3.8 1-2 activities" and review the result with RID for finalize revised repair manual	Ogawa / Mizota	Plan
			Actual
Output-4. Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.			
4-1	To organize seminars for other DPWTs – trainings on road and bridge inspection		
4-1-1	To prepare seminars and materials for the seminars and explain their part at workshops with RID	Mizota / Nakajima / Yamita	Plan
			Actual
4-1-2	To organize the seminars and review the result with RID	Ogawa / Mizota / Yamita	Plan
			Actual
4-2	To organize seminars for other DPWTs – trainings on road and bridge Repair		
4-2-1	To prepare seminars and materials for the seminars and explain their part at workshops with RID	Mizota / Nakajima / Yamita	Plan
			Actual
4-2-2	To organize the seminars and review the result with RID	Ogawa/Mizota Nakajima/Yamita	Plan
			Actual
4-3	To organize the project wrap-up seminar for other DPWTs by RID		
4-3-1	To organize the project wrap-up seminar for other DPWTs	Ogawa / Mizota	Plan
			Actual
Monitoring Plan			
Kick-off Meeting			
	Kick-off Meeting		Plan
			Actual (22 Nov)
	Joint Coordinating Committee		Plan
			Actual (10 July)
	Revision of PDM from Version zero to one		Plan
			Actual
	Submission of Monitoring Sheet		Plan
			Actual (10 July)
Reports/Documents			
	Final Report		Plan
			Actual
Evaluation			
	Terminal Evaluation		Plan
			Actual



Minutes of the Second Joint Coordination Committee Meeting of the Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia

Date of Issue: 19th of January, 2016

The Second Joint Coordination Committee (2nd JCC) meeting among the Ministry of Public Works and Transport (MPWT) of Cambodia, Japan International Cooperation Agency (JICA), and the other agencies concerning "The Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia" (hereafter called the project) was held at the Conference Room of MPWT on the 18th of January, 2016 (List of attendees is shown in Attachment-1). Discussion and exchange of opinions were made, which resulted in the mutual agreement on several items as briefly described below.

1. Approval for Project Design Matrix (PDM) Ver.2

The Project Design Matrix (hereafter referred to as "PDM") Ver.2 was approved by the JCC members. PDM Ver.1, which was previously agreed at the First JCC meeting held on 10th of July, 2015, was revised to PDM Ver.2. Copies of PDM Ver.1 and Ver.2 are given in Attachment 2.

2. Result of Discussions

2-1. Bridge Database by 2000 Bridges Survey Results

It was reported by MPWT that all the bridges on NR4, whose management responsibility has been taken over by MPWT from January 2016, were inspected and the results were stored into bridge database system established in the project. It was confirmed that update of the initial inspection database was essential for improvement of maintenance management.

In regard to damage rating of bridges, it was explained by JICA Expert Team that inspected bridges were categorized into "sound", "damaged", or "seriously damaged" and that the evaluation methodology has been transferred to MPWT. In addition, it was explained that development of the bridge soundness rating system together with bridge repair work codes to be prepared in the project would contribute to more efficient and accurate cost estimate of bridge repair works:

Moreover, it was suggested by MPWT that target bridges for future inspections should be prioritized in consideration of bridge soundness and traffic conditions in order to efficiently manage maintenance works. It was also suggested that frequency of future bridge inspections should be determined in consideration of the bridge soundness in order to save inspection cost; for example, requirement of annual inspection for damaged/seriously damaged bridges, but inspection every 2 years for sound bridges. In this regard, JICA Expert Team reported that 114 damaged/seriously damaged bridges have been already identified through 2000 bridges inspection and evaluation.

2-2. 3-year Bridge Budget Plan

It was agreed to adopt 3-year bridge budget planning instead of 5-year or 10-year ones since the term of 3 years was more suitable for coping with Cambodian government national budget plan (3-year rolling plan) than 5 years or 10 years; even if some problems should occur in the first year, its countermeasure could be immediately reflected on the next 3-year bridge budget plan. As suggested in the meeting, 5-year or 10-year bridge budget plan would be considered after preparation of the 3-year bridge budget plan.

2-3. DRIMS Utilization for Road Maintenance

It was confirmed that road inspections were to be carried out in combination with visual inspection and IRI measurement in order to improve road maintenance quality and efficiency.

2-4. Possibility to Apply Maintenance Expert System

It was agreed that Maintenance Expert (ME) system was to be established in the project.

2-5. Overloaded Vehicle Control

It was agreed that early implementation of overloaded vehicle control was significant. MPWT and JICA Expert Team agreed to discuss a scheme on overloaded vehicle control for Tsubasa Bridge.

3. Other Issues

JICA Cambodia Office commented that the project has been making better progress than original plan, that the revision of PDM would contribute to further improvement of maintenance management system in Cambodia, and that sustainable activities without Japanese experts should further be considered for the better outcome after the project period.

CONFIRMED BY:

H.E. TAUCH Chankosal
Secretary of State
MPWT

Takashi Ito
Senior Representative
JICA Cambodia Office

H.E. KEM Borey
Director General of Public Works

Koichi Ogawa
Chief Adviser

Nay Chamnang
Director, Road Infrastructure Department
MPWT

Yuzo MIZOTA
Team Leader
JICA Expert Team

KEM Channdoeun
Deputy Chief of Office, Investment Department
MEF

Attachment 1: Agenda of the JCC Meeting (January 18, 2016)

The Second Joint Coordination Committee Meeting
for
The Project for Strengthening Capacity for Maintenance of Roads and Bridges

Date	:	18 January, 2016
Time	:	15:00 – 17:00
Venue	:	Ministry of Public Works and Transport, 2F Conference Room

Participants:

1. H.E. TAUCH Chankosal Secretary of State
2. H.E. PEN Boran Under Secretary of State
3. H.E. KEM Borey Director General of Public Works
4. Mr. NOU Vaddhanak Deputy Director General of Public Works
5. Mr. Nay Chamnang Director of Road Infrastructure Department
6. Mr. IEM Putdvin Deputy Director of Ministry of Foreign Affairs and International Cooperation
7. Mr. Kem Chandoeun Deputy Chief Officer of Ministry of Economy and Finance
8. Mr. Noeup Samphom Deputy Chief Officer of Ministry of Economy and Finance
9. Mr. Chhay Chan Chhaya Deputy Chief Officer of Ministry of Economy and Finance
10. Mr. Pheng Panith Officer of Ministry of Economy and Finance
11. Mr. Kry Thong Deputy Director of Heavy Equipment Center
12. Mr. Leng Song Deputy Director of Road Maintenance Center
13. Mr. Huy Rath Piseth Director of Sub-national Public Infrastructure Engineering Department
14. Mr. Chhim Phalla Director of International and Cooperation Department
15. Mr. Chao Sopheak Phibal Deputy Director of Road Infrastructure Department
16. Mr. You Dara Director of Road Infrastructure Department
17. Mr. Chea Dara Deputy Chief of Road Infrastructure Department
18. Mr. Nin Menakak Deputy Chief of Office of Road Infrastructure Department
19. Mr. Long Davuth Officer of Road Infrastructure Department
20. Mr. Takashi Ito Senior Representative of JICA Cambodia Office
21. Mr. Daisuke Fukuzawa Representative of JICA Cambodia Office
22. Ms. Seng Solady Program Officer, JICA Cambodia Office
23. Mr. Koichi Ogawa Chief Advisor, JICA Expert Team
24. Mr. Yuzo Mizota Team Leader, JICA Expert Team
25. Mr. Ken Tokumasu Member, JICA Expert Team
26. Mr. Hideyuki Suzuki Member, JICA Expert Team
27. Mr. Kazuo Yumita Member, JICA Expert Team
28. Mr. Masatoshi Watanabe Member, JICA Expert Team
29. Mr. Hiroaki Ohtake Member, JICA Expert Team

Agenda:

Topics	Speaker	Time
1. Moderator /MC	Director, RID Mr. Nay Chamnang	15:00 -15:05
2.Opening Remarks and Introduction of Participants	Secretary of State H.E. Tauch Chankosal	15:05 – 15:10
3. Opening Remarks by JICA Cambodia	JICA Representative	15:10 – 15:15
4. Project Progress and Revision of PDM (Project Design Matrix) for Approval	Deputy Director, RID Mr.Chao Sopheak Phibal	15:15 - 15:45
5. Approval of the PDM revised	Mr. Nay Chamnang	15:45 – 16:15
6. Report on Performance Made between April and December, 2015 and Further Activities 1) Bridge Database by 2000 Bridge Survey Results 2) 3-year Bridge Budget Plan 3) DRIMS Utilization for Road Maintenance 4) Possibility to Apply Maintenance Expert System 7. Overloaded Vehicle Control	RID Official Mr. Chea Dara, Assistant to Director Mr.Chao Sopheak Phibal Mr. Mr.You Dara, Deputy Director, RID Mr. Nay Chamnang Ex. PEN Boran	16:15 – 16:30
8. Q and A	Director, RID Mr. Nay Chamnang	16:30 – 16:50
9. Closing Remarks	H.E. Tauch Chankosal	16:50 – 17:00

Attachment 2: PDM ver.1 and ver.2

PDM ver.1

Project Monitoring Sheet I (Revision of Project Design Matrix)

Version 1

Dated July 2015

Project Title: The Project for Strengthening Capacity for Maintenance of Roads and Bridges
Implementation Agency: Road Infrastructure Department of Ministry of Public Work and Transport (RID MPWT)
Target Groups: Engineers of RID
Period of Project: April 2015 – March 2018
Project Site: Cambodia
Target Area: Roads and Bridges under MPWT

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
Overall Goal Appropriate maintenance of roads and bridges is managed by MPWT.	1. The road and bridge database is updated once / a year. 2. Road and bridge maintenance plans are updated once / a year base on the result of the road and bridge database updated. 3. Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID. 4. The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1. Log record of the database, random sample check of individual data 2. The maintenance plans, corresponding data from the database 3. The maintenance record, the maintenance plans and manuals 4. Minutes of the review meeting	- Country's socio-political situation does not change rapidly.		
Project Purpose Capacity of RID to supervise implementing bodies maintaining roads and bridges is enhanced.	1. Inspection results done by the three target DPWTs are approved by RID based on the manuals by the end of the Project. 2. Repair results done by the two target DPWTs are approved by RID base on the manuals by the end of the Project.	1. DPWT inspection reports and on-site confirmation by RID 2. DPWT repair reports and on-site confirmation by RID. 3. The said draft budget and	- Organizational arrangement of MPWT is not changed drastically.		

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
	3. The above two target DPWTs prepare a draft budget for roads and bridge maintenance for FY 2018 respectively within pre-agreed schedule. 4. Road and bridge maintenance cycle is explained and shared to concerning offices and units at the project wrap-up seminar. 5. Maintenance budget of road and bridge is prepared by RID according to the road and bridge maintenance cycle	its submission date 4. Number and name of the participated offices and unit 5. Interest level of the participants through the questionnaire.			
Outputs 1. The bridge maintenance cycle is established.	1-1. The annual action plan for bridge maintenance cycle is developed by June every year for each targeted DPWT. 1-2. The above action plan is approved by August every year. 1-3. At least 5 officials of RID engineers pass exam of bridge maintenance cycle. 1-4. The annual bridge maintenance budget is drafted at the target DPWTs of 2nd year and 3rd year by May every year.	1-1. The annual action plan and it's date developed 1-2. The approved date 1-3. The exam results and participants list 1-4. The drafted budget and its date	- The trained staff/officers remain at the job. - Roles of DPWTs and other concerning offices and units are not changed including budget preparation system.		
2. Road and bridge inspection capacity of RID is enhanced.	2-1. The road and bridge maintenance manuals are drafted by August 2015 and finalized by June 2017. 2-2. The selected roads and bridges in the targeted DPWTs are inspected according to the maintenance manual. 2-3. The inspection results are registered to the road and bridge database by RID until November every year. 2-4. At least 5 officials of RID's engineers pass road and bridge inspection test.	2-1. The manuals and its' date prepared 2-2. Inspection record and sample on-site confirmation 2-3. Inspection record and corresponding data for sample check 2-4. The test results and participants list			

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
3. Road and bridge repair capacity of RID is enhanced.	3-1. The road and bridge repair manuals are drafted by January 2016 and finalized by June 2017. 3-2. The identified roads and bridges in the targeted DPWTs are repaired according to the repair manuals and the inspection results. 3-3. The repair results are registered to the road and bridge database by RID within 1 month after the completion of repair works. 3-4. At least 5 officials of RID's engineers pass road and bridge repair test.	3-1. The manuals and its' date prepared 3-2. Repair record and sample on-site confirmation 3-3. Repair record and corresponding data for sample check 3-4. The test results and participants list			
4. Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.	4-1. Bridge inspection is carried out at the more than 80% DPWTs (20/25 DPWTs). 4-2. More than 80% DPWTs attends the seminar held in the Project. 4-3. The project activities are disseminated to other agencies concerning road/bridge maintenance. (number is not specified but with increments through the project)	4-1. Bridge inventory data 4-2. The participants list 4-3. Publicity matter			

Activities	Inputs		
1-1. To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system 1-2. To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results 1-3. To practice the action plan 1-4. To hold workshop of the bridge maintenance cycle 1-5. To prepare draft annual bridge maintenance budget	(Japan side) 1 A chief advisor / A long term expert 2 Short term experts 1) Team Leader / Bridge Maintenance Engineer 2) Deputy-team leader / Road Maintenance Planner	(Cambodia side) 1 Arrangement of counterpart personnel 1) Project Director 2) Project Manager 3) Other Necessary Personnel 2 Implementation cost for the pilot repair works	- Conditions of roads and bridges under MPWT are not rapidly deteriorated. - Flood with large scale is not occurred annually.

2-1. To review and develop road maintenance manual 2-2. To review and develop bridge maintenance manual, including a database frame 2-3. To hold training workshops on road and bridge inspections 2-4. To inspect roads and bridges and prepare rough cost estimation of the repair works at the target DPWTs 2-5. To register the inspection results in the database at the target DPWTs 2-6. To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops 3-1. To review and establish road repair manual 3-2. To review and establish bridge repair manual 3-3. To hold training workshops on road and bridge repairs 3-4. To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs 3-5. To establish repair plan for the identified roads and bridges at the target DPWTs 3-6. To repair the identified roads and bridges at the target DPWTs 3-7. To evaluate the above repair works 3-8. To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop 4-1. To organize seminars for other DPWTs – trainings on road and bridge inspection 4-2. To organize seminars for other DPWTs – trainings on road and bridge repair 4-3. To organize the project wrap-up seminar	3) Bridge Inspection Engineer 4) Bridge Repair Engineer (1) (Planning and Design) 5) Bridge Repair Engineer (2) (Repairing work Expert) 6) Bridge Maintenance Planner 7) Road Maintenance Engineer(1) 8) Road Maintenance Engineer(2) 9) Coordinator / Assistant for Road and Bridge Inspection 10) Coordinator for other relevant project / C/P training Supervision 3 Equipment for road and bridge maintenance 4 C/P training 5 Cost for seminars and Trainings as the project activities	3 Travel expenses and allowances for the participants of the seminars and trainings organized as the project activities 4 Maintenance cost of the JICA project equipment 5 Office space including its utility cost (electricity, water, internet and other necessary office facilities) 6 Etc.	

PDM ver.2

Project Monitoring Sheet I (Revision of Project Design Matrix)

Version 2

Dated January 2016

Project Title: The Project for Strengthening Capacity for Maintenance of Roads and Bridges
Implementation Agency: Road Infrastructure Department of Ministry of Public Work and Transport (RID MPWT)
Target Groups: Engineers of RID
Period of Project: April 2015 – March 2018
Project Site: Cambodia
Target Area: Roads and Bridges under MPWT

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
Overall Goal Appropriate maintenance of roads and bridges is managed by MPWT.	1. The road and bridge database is updated once / a year. 2. Road and bridge maintenance plans are updated once / a year base on the result of the road and bridge database updated. 3. Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID. 4. The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1. Log record of the database, random sample check of individual data 2. The maintenance plans, corresponding data from the database 3. The maintenance record, the maintenance plans and manuals 4. Minutes of the review meeting	- Country's socio-political situation does not change rapidly.		
Project Purpose Capacity of RID to supervise implementing bodies maintaining roads and bridges is enhanced.	1. Inspection results done by the three target DPWTs are approved by RID based on the manuals by the end of the Project. 2. Repair results done by the two target DPWTs are approved by RID base on the manuals by the end of the Project.	1. DPWT inspection reports and on-site confirmation by RID 2. DPWT repair reports and on-site confirmation by RID. 3. The said draft budget and	- Organizational arrangement of MPWT is not changed drastically.		

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
	3. The above two target DPWTs prepare a draft budget for roads and bridge maintenance for FY 2018 respectively within pre-agreed schedule. 4. Road and bridge maintenance cycle is explained and shared to concerning offices and units at the project wrap-up seminar. 5. Maintenance budget of road and bridge is prepared by RID according to the road and bridge maintenance cycle	its submission date 4. Number and name of the participated offices and unit 5. Interest level of the participants through the questionnaire.			
Outputs 1. The bridge maintenance cycle is established.	1-1. The annual action plan for bridge maintenance cycle is developed and approved by August every year for each targeted DPWT. 1-2. At least 5 officials of RID engineers pass exam of bridge maintenance cycle. 1-3. The annual bridge maintenance budget is drafted at the target DPWTs of 2nd year and 3rd year by May every year. 1-4. 3 Year Bridge Maintenance Strategic Plan of short term is prepared by RID/MPWT every August	1-1. The annual action plan and it's date developed and approved 1-2. The exam results and participants list 1-3. The drafted budget and its date 1-4. 3 Year Bridge Maintenance Strategic Plan	- The trained staff/officers remain at the job. - Roles of DPWTs and other concerning offices and units are not changed including budget preparation system.		
2. Road and bridge inspection capacity of RID is enhanced.	2-1. The road and bridge maintenance manuals are drafted by August 2015 and finalized by June 2017. 2-2. The selected bridges of all DPWTs are inspected according to the maintenance manual. 2-3. The selected roads in the targeted DPWTs are inspected according to the maintenance manual 2-4. The inspection results are registered to	2-1. The manuals and its' date prepared 2-2. Inspection record and sample on-site confirmation 2-3. Inspection record and corresponding data for sample check 2-4. The test results and			

Project Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions	Achievement	Remarks
	the road and bridge database by RID until November every year. 2-5. At least 5 officials of RID's engineers pass road and bridge inspection test.	participants list			
3. Road and bridge repair capacity of RID is enhanced.	3-1. The road and bridge repair manuals are drafted by January 2016 and finalized by June 2017. 3-2. The identified roads and bridges in the targeted DPWTs are repaired according to the repair manuals and the inspection results. 3-3. The repair results are registered to the road and bridge database by RID within 1 month after the completion of repair works. 3-4. At least 5 officials of RID's engineers pass road and bridge repair test.	3-1. The manuals and its' date prepared 3-2. Repair record and sample on-site confirmation 3-3. Repair record and corresponding data for sample check 3-4. The test results and participants list			
4. Road and bridge maintenance cycle is introduced to other DPWTs and concerning agencies.	4-1. Bridge inspection is carried out at the more than 80% DPWTs (20/25 DPWTs). 4-2. More than 80% DPWTs attends the seminar held in the Project. 4-3. The project activities are disseminated to other agencies concerning road/bridge maintenance. (number is not specified but with increments through the project)	4-1. Bridge inventory data 4-2. The participants list 4-3. Publicity matter			

Activities	Inputs		
1-1. To review the present bridge maintenance cycle and the works of RID in comparison to the existing Japanese system 1-2. To propose 3 year bridge maintenance strategic plan with the annual action plan to establish a proper bridge maintenance cycle 1-3. To propose annual action plan for bridge maintenance cycle to establish a proper bridge maintenance cycle based on the review results 1-4. To practice the action plan 1-5. To hold workshop of the bridge maintenance cycle 1-6. To prepare draft annual bridge maintenance budget 2-1. To review and develop road maintenance manual 2-2. To review and develop bridge maintenance manual, including a database frame 2-3. To hold training workshops on road and bridge inspections 2-4. For bridge, to inspect bridges and prepare rough cost estimation of the repair works for all DPWTs 2-5. For roads, to inspect roads using IRI and prepare rough cost estimation of the repair works at the target DPWTs 2-6. To register the inspection results in the database by RID 2-7. To revise the road and bridge maintenance manuals incorporating lessons learned from the above activities by organizing review workshops 2-8. To conduct preliminary study on overloading control (at Tsubasa Bridge) 3-1. To review and establish road repair manual 3-2. To review and establish bridge repair manual 3-3. To hold training workshops on road and bridge repairs 3-4. To identify roads and bridges for the pilot repair works based on the inspection results at the target DPWTs 3-5. To establish repair plan for the identified roads and bridges at the target DPWTs	(Japan side) 1. A chief advisor / A long term expert 2. Short term experts 1) Team Leader / Bridge Maintenance Engineer 2) Deputy-team leader / Road Maintenance Planner 3) Bridge Inspection Engineer 4) Bridge Repair Engineer (1) (Planning and Design) 5) Bridge Repair Engineer (2) (Repairing work Expert) 6) Bridge Maintenance Planner 7) Road Maintenance Engineer(1) 8) Road Maintenance Engineer(2) 9) Coordinator / Assistant for Road and Bridge Inspection 10) Coordinator for other relevant project / C/P training Supervision 11) Road Maintenance Engineer (3) (Overloading Control) 3. Equipment for road and bridge maintenance 4. C/P training 5. Cost for seminars and Trainings as the project activities	(Cambodia side) 1. Arrangement of counterpart personnel 1) Project Director 2) Project Manager 3) Other Necessary Personnel 2. Implementation cost for the pilot repair works 3. Travel expenses and allowances for the participants of the seminars and trainings organized as the project activities 4. Maintenance cost of the JICA project equipment 5. Office space including its utility cost (electricity, water, internet and other necessary office facilities) 6. Etc.	- Conditions of roads and bridges under MPWT are not rapidly deteriorated. - Flood with large scale is not occurred annually. Pre-condition N/A

3-6. To repair the identified roads and bridges at the target DPWTs 3-7. To evaluate the above repair works 3-8. To revise the road and bridge repair manual incorporating lessons learned from the above activities by organizing review workshop by organizing review workshop 4-1. To organize seminars for other DPWTs – trainings on road and bridge inspection 4-2. To organize seminars for other DPWTs – trainings on road and bridge repair 4-3. To organize the project wrap-up seminar			

Minutes of the Third Joint Coordination Committee Meeting of the Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia

Date of Issue: 10th of August, 2016

The Third Joint Coordination Committee (3rd JCC) meeting among the Ministry of Public Works and Transport (MPWT) of Cambodia, Japan International Cooperation Agency (JICA), and the other agencies concerning "The Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia" (hereafter called the project) was held at the Conference Room of MPWT on the 10th of August, 2016. (The list of attendees is shown in Attachment-1.) Discussion and exchange of opinions were made, which resulted in the mutual agreement on all the items as briefly described below.

1. Items for Approval

The following seven (7) items were approved by JCC members.

(1) Target DPWTs for the 2nd Pilot Project

Target DPWTs for the 2nd pilot projects are:
- Preah Sihanouk DPWT for Bridge Repair and
- Takeo DPWT for Road Inspection.

(2) Amendment of JCC Members

The following two (2) officials were replaced for JCC members:
- H.E. PHY Sophort, Director General of Public Works (replacement of H.E. KEM Borey, former Director General of Public Works)
- Mr. Heng Rathpiseth, Director of Road Infrastructure Department (replacement of Mr. Nay Chamnang, former Director of Road Infrastructure Department)

(3) Expansion of Maintenance Expert (ME) Training Program

Maintenance Expert training program will be expanded to as many other DPWTs as possible.

(4) Required Responsibilities (draft) of RID for a Sustainable 3-year Strategic Bridge Maintenance Budget Plan

Road Infrastructure Department (RID) is obliged to take the following responsibilities for sustainability of the 3-year Strategic Bridge Maintenance Budget Plan (hereafter called "the 3-year budget plan"):

1) Periodic inspection/review of bridge damage conditions with DPWTs:
   - Every year for "Seriously Damaged (SD) bridges" and "Damaged (D) bridges"
   - Every 5 years for "Observation (O) bridges" and "No measures (N) bridges"
2) Annual review and update of the bridge database system that stores bridge inspection data and maintenance records
3) Quarterly reporting on the results of road/bridge inspection and maintenance works; routine maintenance (regular inspection, cleaning, and repair of damages) and periodic maintenance (reconstruction/new construction).
4) Review of the 3-year budget plan every year, considering maintenance budget of the previous year
5) To get the approval from Ministry of Economics and Finance (MEF) for the annual budget request based on the 3-year budget pian (budget for maintenance of prioritized bridges)

(5) Utilization of DRIMS for IRI Measurement

RID will study and clarify the application range of two (2) types of IRI measurement equipment, DRIMS (Dynamic Response Intelligence Monitoring System) and ROMDAS (Road Measurement Data Acquisition System): DRIMS has been applied for technological transfer in the project while the World Bank tries to introduce ROMDAS in their project, RAMP2.

(6) Launching of Road and Bridge Maintenance Manuals/Guidelines for Practical Use
Upon finalization of road and bridge maintenance manuals/guidelines, the documents will be officially launched for practical use and disseminated to all the DPWTs and relevant authorities.

(7) Requirement of Global IP Address for Bridge Database System
A global IP address for the bridge database system will be obtained for convenient access by DPWTs through the internet connection.

2. Results of the Discussion

2-1. Improvement of Bridge Database System
It was pointed out by JCC members that the bridge database system has to be constantly updated after the project for more efficient and practical use. In response to this, it was explained by MPWT that MPWT will cooperate with Institute of Technology of Cambodia (ITC) and Royal University of Phnom Penh for update and maintenance of the system, and that MPWT considers integration of GIS program into the database for more efficient use. In regard to this, MPWT requested to MEF that sufficient budget for the database system update should be approved by 2017.

2-2. DRIMS Utilization for Road Maintenance
It was agreed that MPWT will study the road maintenance system in which advantages of two (2) IRI-measurement equipment, DRIMS and ROMDAS, can be maximized in a harmonized manner. ROMDAS is more advanced than DRIMS in the point that it can measure deflection and more accurate IRI while its operation is more complicated and costly. JICA suggested that DRIMS should be utilized in such a way that it covers the disadvantages of ROMDAS. It was confirmed that the result of the study on the application range of two (2) equipment will be presented in the next JCC meeting.

2-3. Technology Transfer for Road Repair Works
In regards to application of Excel patch for pothole repair, it was pointed out by JCC members that chemical test results for environmental safety should be presented during the project prior to its practical use in actual projects. JICA expert team answered to this that the materials have proved to be environmentally friendly as a result of the tests conducted by the manufacturer, and agreed to present the results. Additionally, it was pointed out that repair work by Excel patch could cause bumps that affect traffic safety. MPWT explained that no bumps were identified after the repair work by Excel patch in the 1st road repair project although optimal ways for the material compaction still have to be studied in order to ensure the construction quality. In this respect, it was confirmed that a guideline for Excel patch application will be prepared for practical use during the project.

As for other road repair methods, it was asked by JICA if other repair methods such as overlay for repair of severely-deteriorated road surface, which is classified as periodic maintenance, are considered to be a part of technology transfer in the project. JICA expert team explained that technology transfer for road repair works, not limited to routine maintenance, will be carried out in accordance with the road repair guideline prepared in the project, giving advice to supervision of ongoing projects.

2-4. Update of Manuals/Guidelines
JICA suggested that a certain system for update of manuals/guidelines (hereafter called the manuals) prepared in the project should be established for sustainability since it is often the cases that manuals prepared in projects won't be updated. MPWT explained that five (5) RID officials as a team have been reviewing the manuals, getting advice from other relevant departments, and that MPWT will consider establishment of a certain system for the manual update as a part of ongoing reorganization of MPWT in order to expand the review team's progress for sustainability.

2-5. Budget Request to MEF
JCC members agreed that approval for appropriate budget is indispensable for sustainability of the technologies transferred in the project, and that MPWT will negotiate details of the budget allocation with MEF.

7d. O. [illegible]

JICA asked how MPWT planned to reflect the project results on the budget request to MEF. MPWT explained that maintenance costs for selected bridges from 3-year budget plan will be included in the budget request. Also, it was explained that cost estimate resulted from IRI-based road maintenance system will be included in the budget request within the range of routine maintenance defined in Chapter-61.

JICA suggested that the project results should be reflected on the budget request for 2017 as much as possible in order to make further improvements in the budget request for 2018.

CONFIRMED BY:

H.E. TAUCH Chankosal
Secretary of State
MPWT

Takashi Ito
Senior Representative
JICA Cambodia Office

H.E PHY Sophort
Director General of Public Works
MPWT

Koichi Ogawa
Chief Adviser
JICA Expert Team

Heng Rathpiseth
Director, Road Infrastructure Department
MPWT

For
Yuzo MIZOTA
Team Leader
JICA Expert Team

Vongsey Vichet
Deputy Director, Investment Department
MEF

Attachment-1: The List of Attendees

No.	Name	Position	Orgaization
1	H.E TAUCH Chankosal	Secretary of State	MPWT
2	H.E PHY Sophort	Director General of Public Works	MPWT
3	H.E VASIM Sorya	Director General of Administration	MPWT
4	Taizo Chiba	2nd Secretary	Embassy of Japan
5	Heng Rathpiseth	Director, RID	MPWT
6	Heang Vutha	Director, SPIED	MPWT
7	Kim Sereyvong	Deputy Director, RMC	MPWT
8	Chao Sopheak Phibal	Deputy Director, RID	MPWT
9	You Dara	Deputy Director, RID	MPWT
10	Vongsey Vichet	Deputy Director, DI	MEF
11	Nin Menakak	Deputy Chief Office, RID	MPWT
12	Chhay Chakriya	Officer, RID	MPWT
13	Sitthy Panhavuth	Deputy Chief Office, RID	MPWT
14	Hay Chandara	Deputy Chief Office, RID	MPWT
15	Im Vuthan	Technical Manager, PMU3	MPWT
16	Kem Channdoeun	Chief Office, PIM	MEF
17	Chen Phanith	Office Chief	MEF
18	Lay Sopheak	Office 3rd	MEF
19	Takashi Ito	Senior Representative	JICA
20	Daisuke Fukuzawa	Representative	JICA
21	Hidetoshi Kume	JICA Expert	JICA
22	Koichi Ogawa	Chief Advisor/JICA Expert	Expert
23	Yuzo Mizota	Team Leader/JICA Expert	Expert
24	Kazuo Yumita	JICA Expert	Expert
25	Hiroaki Otake	JICA Expert	Expert

Attachment-2: Agenda for the Third JCC Meeting (10 August, 2016)

The Third Joint Coordination Committee Meeting
for
The Project for Strengthening Capacity for Maintenance of Roads and Bridges

Date	:	10 August, 2016
Time	:	15:00 – 17:00
Venue	:	Ministry of Public Works and Transport, 2F Conference Room

Agenda:

Topics	Speaker	Time
1. Moderator /MC	Director, RID Mr. Heng Rathpiseth	15:00 -15:05
2.Opening Remarks and Introduction of Participants	Secretary of State H.E. Tauch Chankosal	15:05 – 15:10
3. Opening Remarks by JICA Cambodia	JICA Representative	15:10 – 15:15
4. Report on activities by August 2016 1) Output 1: Establishment of Bridge Maintenance Cycle 2) Output 2: Road and Bridge Inspection - Nationwide bridge database - DRIMS - Pilot project for overloading control at Tsubasa br. 3) Output 3: Repair works of road and bridge - Bridge crack sealing - Ready mix cold asphalt for AC patching 4) Output 4: Introduction of Road and Bridge Maintenance Cycle to Other DPWTs and Concerning Agencies	RID Official Mr. Chao Sopheak Phibal Ms. Chhay Chakriya Mr. Hay Chandara Mr. Im Vuthan, technical manager of PMU3 Mr. Nin Menakak Mr. Sitthy Panhavuth/ Mr.Yumita Mr. Chao Sopheak Phibal	15:15 - 15:45
5. Project Achievement and items for approval 1) Project Achievement 2) Items for approval	Deputy Director, RID Mr. Chao Sopheak Phibal	15:45 – 16:15
6. Q and A	Mr. Heng Rathpiseth	16:15 – 16:30
7. Approval	Mr. Heng Rathpiseth	16:30 – 16:50
8. Closing Remarks	H.E. Tauch Chankosal	16:50 – 17:00

Td.O. DN

Minutes of the Fourth Joint Coordinating Committee Meeting of the Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia

Date of Issue: 15th of December, 2016

The Fourth Joint Coordinating Committee (4th JCC) meeting among the Ministry of Public Works and Transport (MPWT) of Cambodia, Japan International Cooperation Agency (JICA), and the other agencies concerning "The Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia" (hereafter called the project) was held at the Conference Room of MPWT on the 15th of December, 2016. (The list of attendees is shown in Attachment-1.) Discussion and exchange of opinions were made, which resulted in the mutual agreement on all the items as briefly described below.

1. Items for Approval

The following seven (7) items were confirmed by JCC members.

(1) Revision of Project Design Matrix (PDM) for Equipment Procured in 2016

Equipment for 1) bridge inspection, 2) IRI measurement, and 3) overloading control at Tsubasa Bridge has been procured and handed over to MPWT after the 3rd JCC held on August 10, 2016. Therefore, PDM has been modified from Ver.2 to Ver.3, accordingly, for the following item (refer to PDM Ver.3 under the Monitoring Sheet Ver.4 attached):

Addition of "Equipment Procurement Engineer" for overloading control at Tsubasa Bridge

(2) Acquisition of Global IP Address for Bridge Database System

Necessity of a global IP address for the bridge database system was understood in the meeting in principal. The expected operation cost is 20 USD/month. However, the clause was not approved in the meeting, and the project team will consult with relevant authorities in order to acquire the global IP address.

(3) Implementation of Detailed Bridge Inspection for 173 Selected Bridges

The project will carry out detailed bridge inspection for 173 selected bridges as a part of the Maintenance Expert (ME) training program in order to improve bridge inspection skills of officials of Road Infrastructure Department (RID) and Department of Public Works and Transport (DPWT). In this regard, the following two (2) activities will be taken after the completion of the inspection:

- Update of the bridge database information with the latest inspection results
- Holding of a workshop for review on inspection results and information sharing among MPWT and DPWTs

(4) Dissemination of "Guidelines for Repairing Defects of Roads" to the Relevant Organizations

"Guidelines of Repairing Defects of Roads" has been updated from Ver.1 to Ver.2. The updated contents will be shared with all the DPWTs, and the guidelines will be finalized with their comments, accordingly. The finalized guidelines will be disseminated to all the relevant organizations.

(5) Application Policy of IRI Measurement Equipment (ROMDAS and DRIMS)

This clause was not approved in the meeting. It was proposed and agreed by JCC members to have a joint meeting together with H.E PHENG Sovicheano, Secretary of State on this issue to conclude in the minutes. The conclusion shall be proposed to the Senior Minister for his approval.

(6) Institutionalization of Maintenance Expert (ME) Training Program

Maintenance Expert training program is to be institutionalized in order to expand the program to other DPWTs.

(7) Development of Post Project Strategies

Post project strategies will be developed in order to achieve overall goals of the project.

2. Results of the Discussion

2-1. Sustainable Operation of the Bridge Database

Mr.Tanaka, Senior Representative of JICA Cambodia Office, proposed to have sustainable mechanism on the bridge inspection and database to encourage sustainability. It was proposed and agreed in the meeting to record inspector's name in the inspection sheet, which encourage inspector's incentive towards the work as ME.

2-2. Maintenance Expert Program

Mr.Fukuzawa, representative of JICA Cambodia Office, asked difference between ME Master and ME and proposed an institutional framework to encourage this training program. RID explained that ME Master had a role of trainer of ME. RID emphasized the importance of number of ME Masters in order to improve actual quality of the work which is mainly done by DPWT. Institutionalization of the program by Prakas was proposed in the meeting as a means of mainstreaming of ME.

2-3.Update of Bridge Database

H.E.TAUCH Chankosal, Secretary of State, noted necessity of criteria (frequency and level of inspections) for inspecting each bridge soundness category (ex. SD: Seriously damaged, D: damaged). The clear definition helps to request required budget of inspection to MEF. The project team agreed to discuss this issue and include the clear criteria in the guidelines.

2-4. Database Server

H.E.TAUCH Chankosal requested comparative study of server as stand-alone type or cloud type available in the Ministry of Post and Communication. The project team agreed to study pro-or-con of such options.

2-5. Security of database through Global IP address

Mr. KITH Chandararith, Deputy Director of International Cooperation Department, asked about security of the database if the database is accessible in the global address. The project team responded that appropriate access control will be studied in the coming activity.

CONFIRMED BY:

H.E. TAUCH Chankosal
Secretary of State
MPWT

Kotaro Tanaka
Senior Representative
JICA Cambodia Office

H.E. PHY Sophort
Director General of Public Works
MPWT

Koichi Ogawa
Chief Adviser
JICA Expert Team

Heng Rathpiseth
Director, Road Infrastructure Department
MPWT

Yuzo Mizota
Team Leader
JICA Expert Team

Kem Channdoeun
Chief Office, Investment Department
MEF

Attachment-1: The List of Attendees

Date: 15-Dec-16
Meeting: 4th JCC

No	Name	Position	Organization
1	H.E Tauch Chankosal	Secretary of State	MPWT
2	H.E Phy Sophort	Director General of Public Works	MPWT
3	Kotaro TANAKA	JICA Representative	JICA
4	Phana Vennida	Director	CDC/CRDB
5	Chao Sopheak Phibal	Deputy Director/RID	MPWT
6	You Dara	Deputy Director/RID	MPWT
7	Kim Sereyvong	Deputy RMC	MPWT
8	Kit Chandarith	Deputy Director (Department)	MPWT
9	Koy Ratanak Bandith	Deputy Director of SPIED	MPWT
10	Yem Netnarith	Deputy Buraur Chief	MFA
11	Sun Sokuntheavy	Deputy Director	MPWT
12	Hay Chandara	Deputy Chief Office	MPWT
13	Long Davuth	Officer/RID	MPWT
14	Sitthy Panhavuth	Deputy Chief Office/RID	MPWT
15	Chhouk Sochea	Officer	MPWT
16	Rou Vita	Officer	MEF
17	Im Vuthan	Permenance Member of Axle Load	MPWT
18	Daisuke FUKUZAWA	JICA Representative	JICA
19	Eam Sovisoth	Deputy Chief of Office/RID	MPWT
20	Seng Solady	Program Officer	JICA
21	Nin Menakak	Deputy Chief of Office/RID	MPWT
22	Seak Eng	Officer	CDC/CRDB
23	Thong Rithy	Officer	MEF
24	Kem Channdoeun	Chief Officer	MEF
25	Hidetoshi KUME	JICA Expert	JICA
26	Yuzo MIZOTA	JICA Expert	JICA
27	Takashi NAKAJIMA	JICA Expert	JICA
28	Tatsuro MAEDA	JICA Expert	JICA
29	Masatoshi WATANABE	JICA Expert	JICA
30	Koichi OGAWA	JICA Expert	JICA
31	Ken TOKUMASU	JICA Expert	JICA
32	Hiroaki OHTAKE	JICA Expert	JICA

Attachment-2: Agenda for the Fourth JCC Meeting (15 December, 2016)

The Fourth Joint Coordinating Committee Meeting
for
The Project for Strengthening Capacity for Maintenance of Roads and Bridges

Date	:	15 December, 2016
Time	:	15:00 – 17:00
Venue	:	Ministry of Public Works and Transport, 2F Conference Room

Agenda:

Topics	Speakers	Time
1. Moderator /MC	Director, RID Mr. Heng Rathpiseth	15:00 -15:05
2. Opening Remarks and Introduction of Participants	Secretary of State H.E. Tauch Chankosal	15:05 – 15:10
3. Opening Remarks by JICA Cambodia	Mr. Kotaro Tanaka	15:10 – 15:15
4. Report on Performance Made between April to December 2016 and Further Activities 1) Bridge Database by 2000 Bridge Survey Results 2) Bridge Maintenance 3) DRIMS Utilization for Road Maintenance 4) Overloading Vehicle Control (Pilot Project Report) 5) Maintenance Expert System	RID Official Mr. Nin Menakak (5min) Mr. Long Davuth (5 min) Mr. Hay Chandara/Sitthy Panhavuth (5 min) Mr. Im Vuthan, technical manager of PMU3 (5min) Mr. Chao Sopheak Phibal (5min)	15:15 - 15:45
5. Project Achievement and items for approval 1) Project Achievement 2) Items for approval	Deputy Director, RID Mr. Chao Sopheak Phibal	15:45 – 16:15
6. Q and A	Mr. Heng Rathpiseth	16:30 – 16:50
7. Approval	Mr. Heng Rathpiseth	16:15 – 16:30
8. Closing Remarks	H.E. Tauch Chankosal	16:50 – 17:00

Minutes of the Fifth Joint Coordinating Committee Meeting on the Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia

Date of Issue: 23rd of June, 2017

The Fifth Joint Coordinating Committee (5th JCC) meeting among the Ministry of Public Works and Transport (MPWT) of Cambodia, Japan International Cooperation Agency (JICA), and the other agencies concerning "The Project for Strengthening Capacity for Maintenance of Roads and Bridges in Cambodia" (hereafter called the project) was held at the Conference Room of MPWT on the 23rd of June, 2017. (The list of attendees is shown in Attachment-1.) Discussion and exchange of opinions were made, which resulted in the mutual agreement on all the items as briefly described below.

1. Items for Approval

The following four (4) items were confirmed by JCC members.

(1) Revision of Project Design Matrix (PDM) for Additional JICA Experts

Three (3) JICA Experts, namely 1) "Bridge Inspection Engineer (2)", 2) "Bridge Repair Engineer (3)", and 3) "Database Expert", have been assigned to the project in 2017. Therefore, PDM has been modified from Ver.3 to Ver.4, accordingly, for the following item (refer to PDM Ver.4 under the Monitoring Sheet Ver.5 attached):

(2) Implementation of the Action Plan for Bridge Maintenance Cycle

Implementation of the Action Plan, which institutionalizes the following four (4) issues regarding bridge maintenance cycle circulation, has been approved by JCC members.

1) Responsibility of RID in the Bridge Maintenance Cycle
2) Maintenance Operation Meeting
3) Maintenance Expert Program
4) Document Management

The Action Plan is to be officially approved by issuance of the Director's Order of Road Infrastructure Department.

(3) Official Launch of Manuals and Guidelines Developed in the Project

Official launch of the following four (4) technical documents (manuals and guidelines) developed in the project has been approved by JCC members.

1) Guidelines for Routine Road Maintenance Using IRI
2) Guidelines for Repairing Defects of Roads
3) Bridge Inspection Manual
4) Bridge Repair Manual

The manuals/guidelines are to be officially launched with preface of MPWT top management by December 2017.

(4) Submission of Budget Proposal to MEF

It was confirmed by JCC members that MPWT is going to submit the budget proposal for the financial year 2018 including necessary costs for implementation of:

1) The Action Plan for bridge maintenance management (including inspection and minor repair) and
2) IRI measurement by Dynamic Response Intelligent Monitoring System (DRIMS).

(5) Post Project Strategy

The following three (3) post project strategies have been approved by JCC members for project sustainability and formation of MPWT's ownership.

1) Implementation of the Action Plan for bridge maintenance cycle circulation
2) Dissemination of the road/bridge maintenance system developed in the project from MPWT to 25 DPWTs through the Maintenance Expert training program.
3) Coordination with Academic institutions such as Institute of Technology of Cambodia (ITC)
   Ex. - Memorandum of understanding for cooperation between MPWT and Academic institutions
   - Invitation of lecturers from academic institutions to seminars/workshops hosted by MPWT
   - Sharing of information stored in database developed in the project

2. Results of the Discussion

2-1. The Action Plan for Bridge Maintenance Cycle Circulation

JICA asked if the Action Plan includes the bridge inspection plan and update of the 3-year bridge maintenance plan. In response to the question, MPWT gave the following answer:

[Bridge Inspection Plan]

An annual bridge inspection plan is developed as a part of the Action Plan. The necessary budget for implementation of the inspection plan is USD70,000 per year.

[Update of the 3-year Bridge Maintenance Plan]

Update of the 3-year Bridge Maintenance Plan is included in the Action Plan in order to certainly implement annual activities that will result in smooth circulation of bridge maintenance cycle. MPWT is going to annually update bridge maintenance plans for budget proposal, referring to the 3-year Bridge Maintenance Plan.

The Action Plan includes both routine/periodic maintenance (Chapter 61) and investment (Chapter 21). In case of the financial year 2017 (FY2017), USD10million were requested to Ministry of Economic and Finance (MEF). As a result, USD2million were allocated to MPWT for replacement of four (4) bridges. Although bridge repair budget (under Chapter 61) was not requested for FY2017, MPWT will consider it in the budget proposal for FY2018.

2-2. Bridge Database

The JCC chairperson made the following comments on database management:

- Information stored in the database developed in the project should be shared with other departments of MPWT in cooperation with the data management center that is under consideration for establishment.
- All the Ministry information including information on roads and bridges should be managed by the data management center. In this regard, Road Infrastructure Department (RID) has to manage database information on roads and bridges, coordinating with the data management center.
- On the other hand, extreme care should be taken in establishing database for data share among departments. Database cloud service is not suitable for storage of ministry data in terms of security risk management. Also, MPWT's database should be independent from that managed by Ministry of Telecommunications in order to avoid security risks.

In response to the above comment, the JICA project team commented that the project intends to focus on establishment of road and bridge database individually.

CONFIRMED BY:

H.E. TAUCH Chankosal
Secretary of State
MPWT

H.E. PHY Sophort
Director General of Public Works
MPWT

Heng Rathpiseth
Director, Road Infrastructure Department
MPWT

Phat Kong
Vice chief office, Investment Department
MEF

Kotaro Tanaka
Senior Representative
JICA Cambodia Office

Koichi Ogawa
Chief Adviser
JICA Expert Team

Yuzo Mizota
Team Leader
JICA Expert Team

Attachment-1: The List of Attendees

No	Name	Position	Orgaization
1	H.E Touch Chankosal	Secretary of State	MPWT
2	Thou Samnang	Deputy Director General of Technique	MPWT
3	Chanthy Sochiva	Deputy Director General	MPWT
4	Heng Rathpiseth	Director of RID	MPWT
5	Chhim Phalla	Director of ICD	MPWT
6	Tan Thira	Director of PID	MPWT
7	You Dara	Deputy Director	MPWT
8	Prak Vanna	Deputy Director of RID	MPWT
9	Mew Monikanak	Deputy Director of Finance	MEF
10	Leng Song	Deputy Director of RMD	MPWT
11	Kry Thong	Deputy Director	MPWT
12	Prum Virak	Deputy Director	MPWT
13	Hay Chandara	Deputy Chief Office	MPWT
14	Nin Menakak	Deputy Chief Office	MPWT
15	Eam Sovisoth	Deputy Chief Office	MPWT
16	Yin Sereivoth	NITT.PT	MPWT
17	Phat Kong	Deputy Officer OPIM.DL	MEF
18	Sim Rinnaroth	Officer OPIM.DL	MEF
19	Chhan Sophea	Spides	MEF
20	Yem Netra	Deputy Representative	MFA
21	Chan Rith	Officer	MPWT
22	Sitthy Panhavuth	Vice Chief Office RID	MPWT
23	Sou Sountheara	Deputy of HERCD	MPWT
24	Chiba Taizo	Second Secretary	EOJ
25	Daisuke Fukuzawa	Representative	JICA
26	Seng Solady	Program Officer	JICA
27	Koichi Ogawa	Project Consultant	MPWT/JICA
28	Yuzo Mizota	Expert	MPWT/JICA
29	Koh Ibayashi	Expert	MPWT/JICA
30	Kumagai Takahiro	Expert	MPWT/JICA
31	Masatoshi Watanabe	Expert	MPWT/JICA
32	Hiroaki Otake	Expert	MPWT/JICA

Attachment-2: Agenda

The Fifth Joint Coordinating Committee Meeting
for
The Project for Strengthening Capacity for Maintenance of Roads and Bridges

Date	:	23 June, 2017
Time	:	9:00AM – 11:00AM
Venue	:	Ministry of Public Works and Transport, 2F Conference Room

Agenda:

Topics	Speaker	Time
1. Moderator /MC	Director, RID Mr. Heng Rathpiseth	9:00 -9:05
2.Opening Remarks and Introduction of Participants	Secretary of State H.E. Tauch Chankosal	9:05 – 9:10
3. Opening Remarks by JICA Cambodia	JICA Representative	9:10 – 9:15
4. Report on Performance Made from December 2016 to June 2017 and Further Activities 1) Action Plan of Bridge Maintenance Cycle 2) Bridge Inspection and Bridge Database 3) Road Maintenance Plan Using DRIMS 4) Bridge Repair 5) Maintenance Expert Program (ME)	RID Official Mr. You Dara (5 min) Mr. Nin Menakak (5 min) Mr. Hay Chandara(5 min) Mr. Eam Sovisoth (5min) Mr. You Dara (5min)	9:15 - 9:45
5. Project Achievement and Items for Approval 1) Project Achievement 2) Items for Approval	Deputy Director, RID Mr. You Dara	9:45 – 10:15
6. Q and A	Mr. Heng Rathpiseth	10:15 – 10:35
7. Approval	Mr. Heng Rathpiseth	10:35 – 10:50
8. Closing Remarks	H.E. Tauch Chankosal	10:50 – 11:00

MINUTES OF MEETING
BETWEEN
JAPAN INTERNATIONAL COOPERATION AGENCY
AND
ROAD INFRASTRUCTURE DEPARTMENT
MINISTRY OF PUBLIC WORKS AND TRANSPORT
ON
THE JOINT REVIEW OF
THE PROJECT FOR STRENGTHENING CAPACITY FOR
MAINTENANCE OF ROADS AND BRIDGES

The Joint Review Meeting on "The Project for Strengthening Capacity for Maintenance of Roads and Bridges" (hereinafter referred to as "the Project") was held on 7th February, 2018 at Ministry of Public Works and Transport (hereinafter referred to as "MPWT") and chaired by Mr. Chhim Phalla, the Director of the Road Infrastructure Department (hereinafter referred to as "RID").

In the Meeting, the JICA Project Team (hereinafter referred to as "the Team") and RID confirmed that all the indicators given to the Outputs and the Project Purpose were achieved, and also agreed to the result of the Joint Review described in the Report.

The main points discussed and confirmed during the Meeting are as per attached.

Phnom Penh, 7th February, 2018

Mr. Chhim PHALLA
Director
Road Infrastructure Department
Ministry of Public Works and Transport

Mr. Kotaro TANAKA
Senior Representative
Japan International Cooperation Agency
Cambodia Office

Mr. Yuzo Mizota
Team Leader of Expert Team

Mr. Koichi OGAWA
Chief Advisor

ATTACHMENT

1. The results of the Joint Review

The Expert Team and MPWT confirmed the result of the joint review of the Project by means of the criteria of Development Assistance Committee (hereinafter referred to as "DAC"), international committee acting under the auspices of the Organisation for Economic Co-operation and Development (OECD) as follows:

Project Rating : **Highly satisfactory** / Satisfactory / Partially satisfactory / Unsatisfactory

DAC Criteria evaluation result:

Criteria	Perspective	Result
Relevance	Examines the consistency of Japan's assistance to the needs and the attainment of objectives.	**High;** 1. It was associated with the Japan's ODA policy to Cambodia on quality infrastructure 2. It was associate with the MPWT's policy on road and bridge maintenance as well as policy on MEF inquiring program budget
Effectiveness	Measures the extent to which a project attains its objectives	**High;** 1. Building database for 2369 bridges 2. Introduction of road monitoring method using IRI 3. Both of the data collection is managed by affordable tool 4. These data is used for PDCA cycle of bridge maintenance 5.
Impact	Examines positive and negative changes, direct and indirect effects (both expected and unexpected).	**Fair;** 1. MEF approved required budget for bridge repair and inspection (4 bridges were reconstructed in FY2017) 2. Action plan for bridge maintenance cycle was adopted by RID Director 3. Link of academic entities between Japan and Cambodia was enhanced (Tokyo University and ITC)
Efficiency	Measures the outputs in relation to the inputs (in terms of funds/time).	**Fair;** 1. Total person month of JICA project team was increased 6.1% to achieve the project purpose 2. Target DPWTs were increased from 3 to 25 in order to achieve the project purpose within the project period. However, project input was remained without significant increase. 3. Master Trainers: Total 26 4. Maintenance Expert: Total 112 (DPWTs)
Sustainability	Whether the benefits of the project are likely to continue.	**High;** 1. After restructure of MPWT, RID remains as the responsible department of road and bridge maintenance 2. The database and tools meet requirement from MEF 3. ME training program was established 4. Approval of budget for periodic inspection of bridge and road by MEF

2. Comments

(1) Comments from JICA

- It was well understood that the project supported RID to successfully allocate budget for bridge

maintenance for the first time from MEF.

- It was good to observe that clear seeds of starting of systematic mechanism on budgeting of bridge maintenance based on the bridge maintenance cycle established during the project.
- For monitoring purpose and support of post project activities, JICA Cambodia office requested to RID to submit following reports and it was agreed;
  1) In June: Road inspection (IRI) progress, Bridge inspection progress
  2) In December: Budget plan, Achievement of bridge repair (reconstruction bridges etc.,)
- JICA Cambodia recognize this project as one of model project in terms of breakthrough the budget allocation from MEF. JICA Cambodia proposed to organize a joint presentation to MEF to share achievement and collect comments/opinions from MEF for further input to other project. This proposition was agreed.

(2) Comments from RID

- RID appreciate this project for strengthen them on budget preparation of road and bridge maintenance budget by collecting data (such as IRI and bridge inventory, inspection)
- RID insists of importance of human capacity development of the officials in order to improve quality of infrastructure. RID would like to request continuous technical support from JICA on road and bridge management.
- MEF is supporting the road and bridge maintenance policy of the project and allocating budget. It is very important for RID to continue inspection activities learned in the project (ex, bridge inspection and road inspection) after the project in order to maintain good plan making to persuade MEF negotiation.

3. Project Completion Report

The RID, JICA Cambodia Office and the Expert Team basically agreed to the contents of draft of the Report describing project activities, outcomes and so on, and confirmed that the Report would be finalized by RID and the Expert Team as early as possible.

4. Post Project Strategy and Monitoring of the Project

It was agreed to take continuous action to achieve overall goal and monitor the project as proposed in Annex 2.

ANNEX 1. Actions to take for overall goal achievement/ Monitoring Plan

ANNEX 2. Project Completion Report (Draft)

KINGDOM OF CAMBODIA
NATION RELIGION KING

MINISTRY OF PUBLIC WORKS AND TRANSPORT

General Directorate of Public Works

Road Infrastructure Department

ATTENDANCE LIST

Joint Review Meeting

7 Feb 2018

N°	Name	Position	Organization	Phone Number	Signature
01	CHHIM Phalla	Director RID	MPWT		
02	You Dara	Deputy Director	MPWT		
03	chhouk Sochea	officer	RID		
04	Nut Sovanneth	Official	RID		
05	Keichi OGAWA	JICA Expert	JICA		
06	YUZO MIZUTA	Team Leader	CTII		
07	TAKASHI NAKAJIMA	Deputy Team Leader	CTII		
08	Sokan Piseth	Officer	RID		
09	Eam Sovisoth	Deputy chief office	RID		
10	IWASE HIDEAKI	Project Formulation Adviser	JICA		
11	Kotaro TANAKA	Deputy Chief	JICA		
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Annex 1 Actions to take for overall goal achievement/ Monitoring Plan

Table 1 Actions to Take for Overall Goal Achievement

Overall Goal: Appropriate maintenance of roads and bridges is managed by MPWT.		
Indicators	Target in 3 years	Actions to take
1) The road and bridge database is updated once / a year.	[Road] 1) Data collection to cover all major road inspected (target 5,000km/ year→5,000km x 3 =15,000km) 2) Increase of the DRIMS team (target 4 teams in RID and 4 teams in DPWTs (2 experts / team)) 3) Maintenance of DRIMS equipment	1) To make clear division of area/ province of responsibility for inspection. RID 4 team Expand to selected 4 DPWTs for operation of DRIMS 2) Set the "Annual Road Condition Survey" using DRIMS in 5,000km every year 3) Allocation of budget for DRIMS survey
	[Bridge] 1) Implementation of bridge inspection plan Target: ● Periodic Inspection:1,500 ● Detailed Inspection:20 2) Database system ● Continue to use the provided server and program 3) System improvement ● License update of File Maker 4) Data sharing and communication ● Share bridge database with in MPWT	1) To make clear division of area/ province of responsibility for inspection. 2) Set one official responsible person in charge of database maintenance , the Road Inventory and Ferry Department will be in charge 3) Set some support staff for operation of the database 4) Allocation of budget for routine bridge inspection
2) Road and bridge maintenance plans are updated once / a year based on the result of the road and bridge database updated.	[Road/Bridge] 1. Maintenance plan Revision of bridge maintenance list for 3 times 2. Implementation of MOM periodically FY 2018 :2 times FY 2019 :2 times FY 2020: 2 times Total 6 times	1) To survey road and bridge condition for base of planning (related to Item 1) 2) Based on 1) update the 3 Year Plan 3) Expand and share the 3 Year Plan with provincial level (RID → DPWT)
3) Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID.	1. Status of the bridge should be improved; In 2020 SD 63 → 48 (5 bridges reconstruction /year x 3 =15, so the number of SD bridges will be reduced from 63 to 48) D 167 →143 (8 bridges repair/ year x 3=24, so the number of D bridges will be reduced from 167 to 143)* assuming crack sealing and CFC	1) Budget request to MEF Chapter 21 (2.0M/ year) Chapter 61 (0.2 M/year) 2) To set periodical skill training (Maintenance Expert Program) in repair 3) Use of repair method introduced in the project Crack sealing (Bridge) CFC (Bridge) Cold Mix Asphalt (Road)
4) The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1) Dissemination of road and bridge repair manual to DPWTs 10 manuals each to DPWT 2) Review of manual and guideline including addition and revision of job code 1 time in 3 years 3) Implementation of Maintenance Expert Training 1 time /year x 3 =3 times	1) To set periodical technical training of RID and DPWT 2) To set standard/ guideline review group (3 RID officials in charge) 3) Budget request for ME training

Table 2 Monitoring Plan (Report Form)

[ ] to fill actual achievement

Overall Goal: Appropriate maintenance of roads and bridges is managed by MPWT.			
Monitoring Schedule	1st	January 2019 (in 1 year (10 months from project completion))	
	2nd	January 2020 (in 2 years)	
	3rd	January 2021 (in 3 years)	
Indicators	Target in 3 years		Monitoring Method **[Year]**
1) The road and bridge database is updated once / a year.	[Road] In order to achieve the predetermined indicator, major challenges are; 1) Data collection to cover all major road inspected (target 5000km/year) 2) Increase of the DRIMS team (target 4 teams in RID and 4 teams in DPWTs) 3) Maintenance of equipment DRIMS		1) Cumulative length of the road measured **[km]** 2) Nos of DRIMS MT **[teams]** 3) Equipment condition **[Good ,** **Poor ( )]**
	[Bridge] 1) Implementation of bridge inspection plan Target: ● Periodic Inspection:1,500 ● Detailed Inspection:20 2) Database system ● Continue to use the provided server and program 3) System improvement ● License update of File Maker 4) Data sharing and communication ● Share bridge database with in MPWT		1) Number of bridges inspected **[bridges]** 2) Bridge database **[Good ,** **Poor ( )]** 3) System Improvement [ ] 4) Data sharing and communication [ ]
2) Road and bridge maintenance plans are updated once / a year based on the result of the road and bridge database updated.	[Road/Bridge] 1. Reflect of the maintenance plan to the program budget Revision of bridge maintenance list for 3 times 2. Implementation of MOM periodically FY 2018 :2 times FY 2019 :2 times FY 2020: 2 times Total 6 times		1) Bridge maintenance short list **Reconstruction** **[bridges]** Rehabilitation **[bridges]** 2) Number of MOM and meeting minutes **[1st MOM date]** **[2nd MOM date]**

Overall Goal: Appropriate maintenance of roads and bridges is managed by MPWT.			
Monitoring Schedule	1st	January 2019 (in 1 year (10 months from project completion))	
	2nd	January 2020 (in 2 years)	
	3rd	January 2021 (in 3 years)	
3) Road and bridge maintenance is carried out based on the road and bridge maintenance plan and the maintenance and repair manuals, under supervision of RID.	1. Status of the bridge should be improved; In 2020 SD 63 → 48 (5 bridges reconstruction /year x3=15) D 167 →143 (8 bridges repair/ year x 3=24)* assuming crack sealing and CFC		**1)** Result of periodic bridge **inspection result** **Number of bridges** **[SD :]** **[D :]** **[O :]** **[N :]**
4) The road maintenance and repair manuals, and the bridge maintenance and repair manuals are regularly reviewed.	1) Dissemination of road and bridge repair manual to DPWTs 10 manuals each to DPWT 2) Review of manual and guideline including addition and revision of job code 1 time in 3 years 3) Implementation of Maintenance Expert Training 4) 1 time /yearx3=3 times		1) Nos of copies made [ ] 2) Update of road maintenance manual [ ] 3) ME training record Date of training [ ] [ ] [ ]

Annex 1 Project Completion Report (Draft)