



Department of Public Works and Highways



Japan International Cooperation Agency

**DPWH & JICA Assisted-Technical Cooperation Project (TCP)
Phase II and III FY 2016 - 2019**

“Improvement of Quality Management for Highway and Bridge Construction and Maintenance”

➤ **OVERALL GOAL**

- Conditions of roads and bridges administered by DPWH are improved.

➤ **PROJECT PURPOSE**

- Road and bridge maintenance management works of DPWH are improved.

➤ **OUTPUTS**

Output-1: Capability of concerned engineers of all ROs/DEOs on road maintenance management is enhanced.

Output-2: Capability of concerned engineers of all ROs/DEOs on bridge maintenance management is enhanced.

Output-3: Capability of concerned engineers of ROs/DEOs in target Regions (II, III, VII, VIII, and XIII) on special bridge maintenance management is enhanced.

Output-4: Database system to be utilized for road and bridge maintenance management is developed.

JOINT COORDINATING COMMITTEE (JCC) MEETING



ORGANIZATION OF THE JICA-TCP Phase III (February 2016 – January 2019)

I. Joint Coordinating Committee

- | | |
|---------------|--|
| Chairperson | - Usec. Emil K. Sadain, Undersecretary, UPMO Operations and Technical Services |
| Vice-Chairman | - Asec. Gilberto S. Reyes, Asst. Secretary of Technical Services |
| Members | - Directors of PS, BOC, BOD, BOM, BRS, BQS, IMS |
| | - ALL DPWH Regional Directors |
| | - Representative from NEDA |
| Japan | - Resident Representative of JICA Philippines |
| | - JICA Experts |

II. TWG (Technical Working Group) *

- | | |
|-------------|--|
| Chairperson | - Project Manager, Aristarco M. Doroy |
| | - Members and concerned Regional Project Managers (Luzon, Visayas and Mindanao) |

III. CWG (Counterpart Working Group) * Team for:

- Special Bridges
- Bridge Engineering Inspection/Bridge Repair & Maintenance
- Routine Maintenance and Road Slope Protection
- Database System (Maintenance Information for Road and Bridge Repair)

*Note: Members are from Central Office (BOD, BOC, BRS, PS, BOM & Regional Offices)

IV. JICA Counterparts

Team Leader
Hideo NAGAO
Bridge Maintenance



Teruyuki MIYAKAWA
Deputy Team
Leader/ Data Base System



Masaki KANGAWA
Road Maintenance



Hiroshi SHINTANI
Road Slope Pilot Project



Mamoru IZAWA
Bridge Repair Pilot Project



Takao NAKAMURA
Special Maintenance



Tashihiro KURIHARA
Special Bridge Repair
Pilot Project



Mr. Fumino HAKAMADA
Special Bridge Repair
Pilot Project



Ms. Sachiyo MATSUBAYASHI
Monitoring Evaluation/Coordinator



V. Activities and Accomplishments:

A. Meetings

1. Joint Coordinating Committee (27 Meetings)



2. Special Bridge CWG Group (23 Meetings)



3. Bridge Repair and Maintenance (15 Meetings)



4. Road Maintenance and Road Slope (14 Meetings)



5. Database System on Maintenance Information on Road and Bridge (12 Meetings)



B. Completed Pilot Projects

- Standard Bridge Repair (Completed)

REGION	NAME OF PROJECT	FISCAL YEAR
I	• Buraan Br., Burgos, Ilocos Norte	2017
	• Dawel Bridge, Suyo Road,	2018
II	• Rosario Br. 2, B01239LZ, Diadi, Nueva Viscaya	2016
	• Barucboc Bridge, Quezon, Isabela	2018
III	• Bigbiga Bridge # 2, Mayantoc, Tarlac	2017
IV-A	• Teresa Bridge, Morong Rd., Rizal	2016
	• Naic Diversion Br. , Cavite	2016
	• Balubal Bridge, Daang Maharlika, Lucena, Quezon	2018
	• Mayao Bridge ,Manila South Road	2018
IV-B	• Sabang Bridge 1,Buenavista, Marinduque	2016
	• Kasay Bridge, Boac, Marinduque	2016
	• Tan-agan Bridge # 2, Tablas, Romblon	2017
	• Gabawan Bridge, Odiongan, Romblon	2017
V	• Agos Bridge, Agos, Polangui, Albay	2016
	• San Agustin Bridge, Polangui, Albay	2016
	• Begonia Bridge, Virac, Catanduanes	2017
VI	• Ondoy Bridge, Aklan West Road, Nabas, Aklan	2017
	• Putol Bridge, Aklan West Road, Nabas, Aklan	2017
	• Patun-an Bridge, Calatrava, Negros Occidental	2018
VIII	• Pagsanga-an Bridge, Ormoc, Leyte	2017
	• Biliran Bridge, Biliran, Biliran	2018
IX	• Labangan Bridge, Labangan, Zambonga del Sur	2016
X	• Kulaman Bridge, Manolo Fortich, Bukidnon	2017
	• Busco Bridge, Quezon, Bukidnon	2017
XII	• Dumadalig Bridge, Tantangan, South Cotabato	2017
	• Luayan Bridge, Tantangan, South Cotabato	2017
	• Glan Bridge, Glan, Sarangani	2018
XIII	• Pulang Lupa Bridge, Trento, Agusan del Sur	2017
	• Taguibo Bridge, , Butuan City, Agusan del Norte	2018
CAR	• Maraburab Bridge, Sta. Lina, Luna, Apayao	2018
NCR	• Arlegui Bridge, Manila	2017
	• P. Casal Bridge, Manila	2017
	• New Panaderos Bridge, Manila	2018

- Special Bridge Repair (Completed)

REGION	NAME OF PROJECT	FISCAL YEAR
II	• Magapit Suspension Bridge, Cagayan	2018
III	• Bamban Bridge # 1 Bamban, Tarlac	2016
	• Bamban Bridge # 2 Bamban, Tarlac	2017
VII	• Mandaue Mactan Bridge Pier Footing No. 8, Cebu	2016
	• Mandaue Mactan Bridge Pier Footing No. 7, Cebu	2017
XIII	• Diosdado Macapagal Bridge, Butuan City	2016
	• Taguibo Bridge Pan-Philippine Highway, Butuan City, Agusan Del Norte	2017

- Road Slope Repair Works (Completed)

REGION	NAME OF PROJECT	FISCAL YEAR
I	• K0383+950; Santa, Ilocos Sur	2016
	• Tagudin-Cervantes Road K0337+31.00 – K0337+040	2018
II	• Penablanca-Callao Road (K0483+450 –K0483+650 Brgy. Patague, Penablanca	2018
III	• Pantabangan-Canili-Basal-Baler Road (K0500+088 – K0500+282)	2018
IV-A	• Bauan-Mabini Road (K0160+248 – K0165+200)	2018
IV-B	• Jct. Paglaum Bato Road, Palawan 1 st DEO (K00187+000 – 0187+200	2018
V	• K044+176 – K044-260, Ligao Pio Duran Road	2016
	• (K0500+088 - K0500+282) Albay West Coast Road	2017
VI	• (Km.44+176 - Km.44+260) Guimbal-Igbaras-Tubungan-Leon Road ,	2017
VII	• (K00028+014 – K00028+015)Cebu- Balamban Transcentral Highway, Cebu	2018
VIII	• (K0923+080-K0923+400) Daang Maharlika,	2017
X	• K1465+074 - K1465+145Sayre Highway (Kulaman Section) , Maramag, Bukidnon	2017
XI	• K01773+768.75-K01773+863.30 Fatima-Malabog Road	2018
XII	• K1687+640-K1687+748.69 and K1682+753.10 - K1682+870.89) Davao-Cotabato Rd. Jct. Digos Road	2017
XIII	• K1171+052.50-K1171+152.50 Daang Maharlika, (Surigao-Agusan Section)	2017
	• K1171+196–K1171+245 Daang Maharlika	2018
CAR	• K0266+990 – K0267+206 Acop-Kapangan-Sibunga Road(Bugho-Tublay Section)	2018

- **Completed Pilot Projects**

- **Standard Bridge** - Repair of Asphaltic Joint of Taguibo Bridge



- **Special Bridge** - Rehabilitation of Diosdado Macapagal Bridge (Asphalt Paving Using KT-BEP)



- **Road Slope Protection** - Cebu-Balamban-Transcentral Highway



C. On-the Job Training (Participants are from the 16 Regions & DEO's)

1. Bridge Repair on Pilot Projects NCR – Arlegui Br



- Carbon Fiber Sheet/Plate
- Asphaltic Plug Joint
- Repainting

2. Special Bridge Routine Maintenance (Region VII – Marcelo Fernan Br.)



Cleaning the expansion joint by using water pressure

3. Road Maintenance in RO VII and

Cleaning the roadside pavement by using water pressure



4. Road Slope Protection Works in RO VII, Cebu



Repair Rehabilitation of Road Slope Works Protection

5. Database System on Maintenance Information on Road and Bridge (MIRB)



6. Special Bridge Condition Inspection and Bridge Engineering Insp. Using Non-Destructive Test Equipment



7. Road and Bridge Maintenance Management



Summary of Seminar/Training conducted and Number of Trained Engineers

[illegible]

D. Bridge Condition Data Review (BMS Coordinator and CWG Members)

Region Office VII - 7 Bridges

Regional Office VIII - 11 Bridges

Regional Office II – 6 Bridges

Regional V – 9 Bridges

Regional Office X - 5 Bridges

Regional Office IV-B - 10 Bridges

Regional Office CAR - 3 Bridges

Regional Office III - 5 Bridges

Regional Office NCR - 5 Bridges



Bridge Condition Data Review

E. Bridge Engineering Inspection (Japanese Counterpart and Local Counterpart)



PIER 3 EXPANSION JOINT, SOUTH SIDE
(SILTED EXPANSION JOINT; MISSING STEEL PLATE COVER)



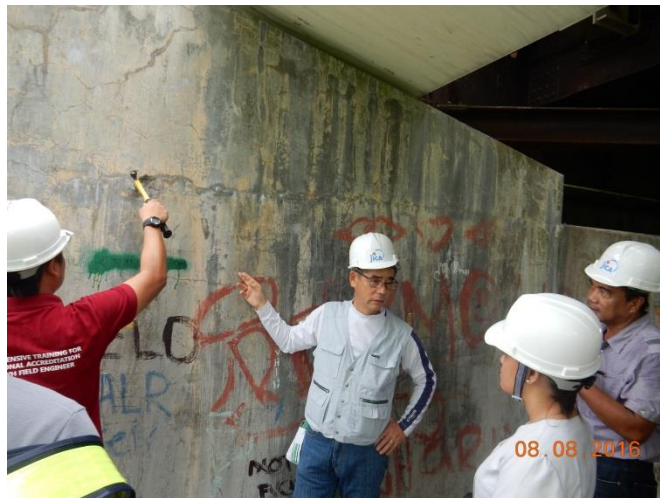
PIER 3 COPING
(CRACKING & WATER LEAKAGE; VEGETATION)



PIER 2 COPING
(SPALLING)

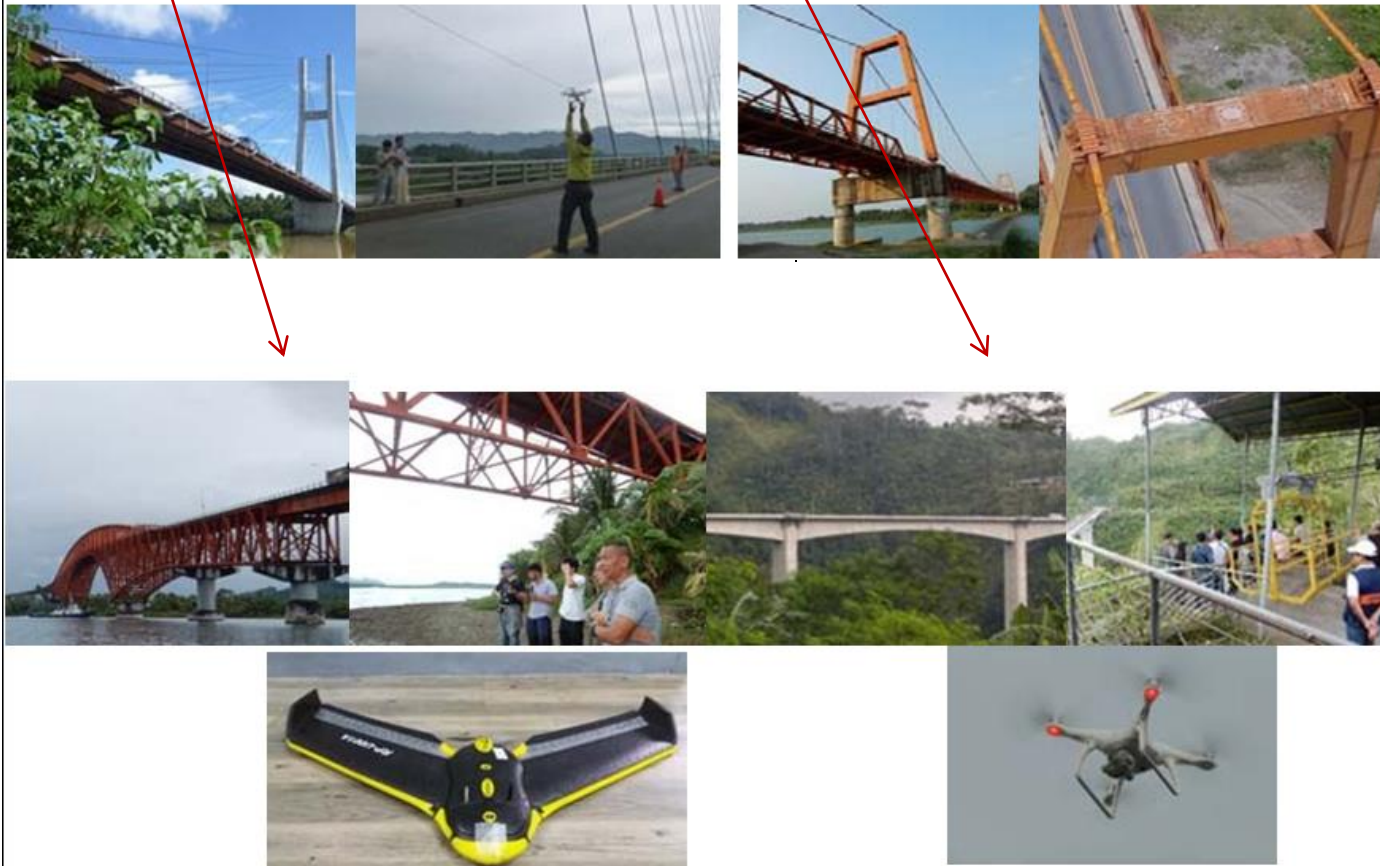


PIER 9 COPING
(WATER LEAKAGE)



VI. Conduct of Inspection on Special Bridge using Drone Technology using Fixed Wing Type Drone and Rotar Type Drone

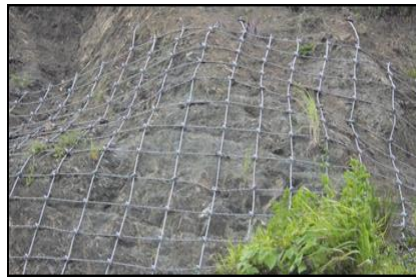
- 5. A.1 Regiona XIII, Butuan - Diosdado Macapagal Bridge
- 5. A 2 Region II, Cagayan - Magapit Suspension Br.
- 5. A 3 Region VIII, TaclobanL and Leyte - San Juanico Br.
- 5. A 4 Region VIII. Southern Leyte – Agas-agas Bridge



VII. Monitoring of Completed Projects

1. RO VIII Road Slope Protection Works – Daang Maharlika K0923+080 -K0923+350 (Rope Net and Rock Fence)

Road Slip



2. RO XIII Bridge Repair of Diosdado Macapagal r – Region XIII



3. RO II – Major Repair of Talaca



VIII. Training Abroad for Technical and Counterpart Working Group Members(T/WG)



First Batch of Training
November 2-15, 2016



3. Third Batch of Training
September 2-15, 2018



2. Second Batch of Training
September 18 – October 5, 2017



Third Country Training (Cambodia)
December 9-17, 2017



OBSERVATION TRIP FOR THE ROAD AND
BRIDGE MAINTENANCE (JAPAN)
October 15-24, 2017



IX. TECHNICAL MANUALS DEVELOPED/AMENDED

JICA TECHNICAL COOPERATION PROJECT, PHASE II

Developed Technical Manuals for Road and Bridge

1. Bridge Engineering Inspection Manual
2. Bridge Inspection Manual for Cable Stayed Bridge (Special Bridge)
3. Bridge Inspection Manual for PC Box Girder Bridge (Special Bridge)
4. Bridge Inspection Manual for PC Extra dosed Bridge (Special Bridge)
5. Bridge Inspection Manual for Steel Arch Bridge (Special Bridge)
6. Bridge Inspection Manual for Steel Truss Bridge (Special Bridge)
7. Bridge Inspection Manual for Suspension Bridge (Special Bridge)
8. Bridge Inspector's Handbook (2nd Edition)
9. Bridge Repair Manual (2nd Edition)
10. Guidebook for Road Construction and Maintenance Management
11. Manual for Load Rating of Bridges (3rd Edition)
12. Philippine Highway Maintenance Management Manual
13. Pocketbook on Routine Maintenance
14. Quality Control Manual on Concrete and Steel Bridge Structures (2nd Edition)
15. Road Project Management and Supervision Manual Vol I Main Text (2nd Edition)
16. Road Project Management and Supervision Manual Vol II Sample Forms and Document (2nd Edition)

JICA TECHNICAL COOPERATION PROJECT, PHASE III

Developed New Manuals for Road and Bridge Maintenance and Database System for Roads and Bridge

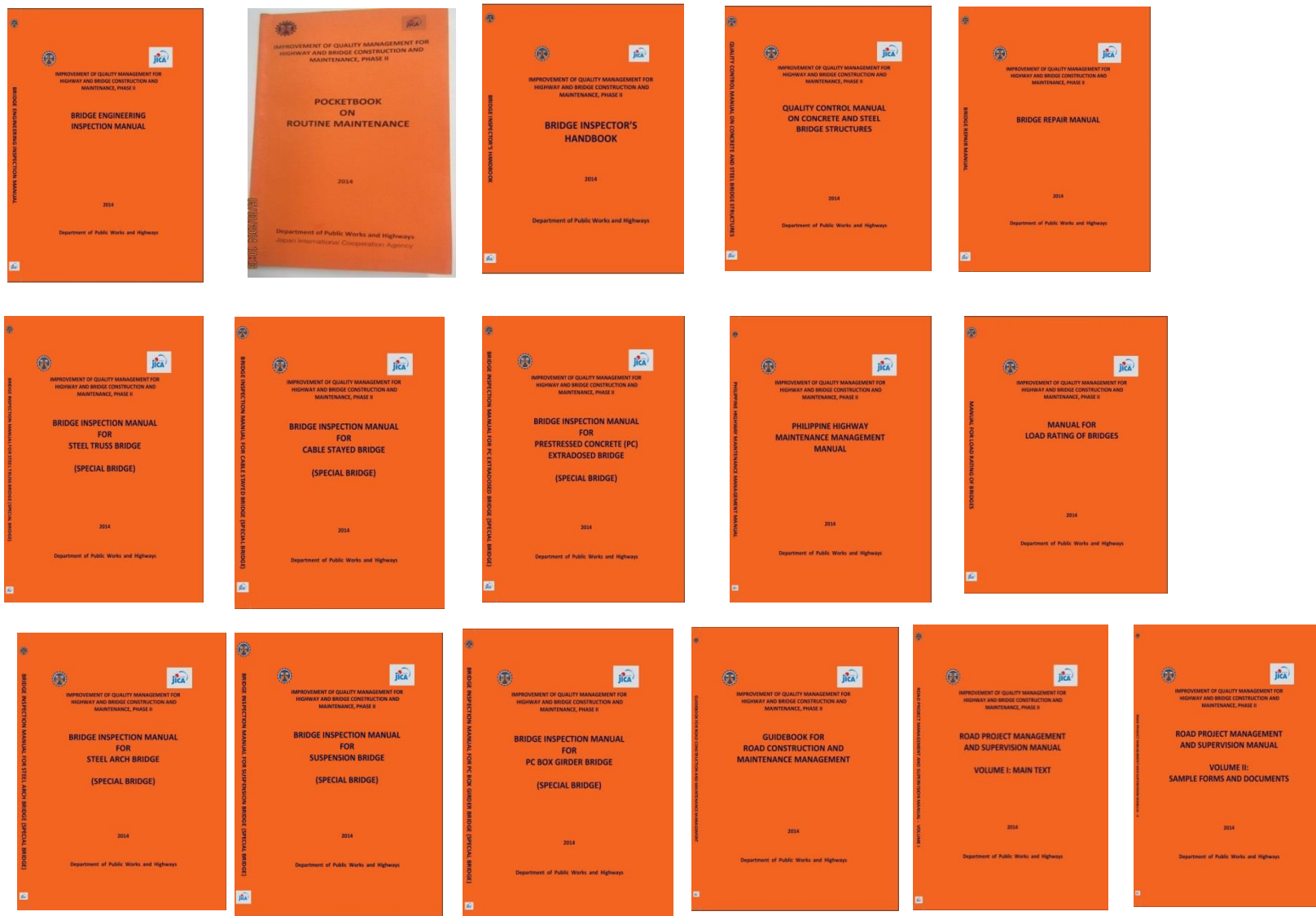
1. Routine Maintenance Manual for Special Bridge per D.O. No. 24, s. 2019
2. Road Slope Protection Manual per D.O. No. 24, s. 2019
3. Maintenance Information System on Road Slope and Bridge Repair (MIRB) per D.O. No. 23, s. 2019

Amended Technical Manual:

1. Pocketbook on Routine Maintenance

NOTE: Can be uploaded at DPW Intranet (References)

❖ JICA Technical Manuals under TCP , PHASE II for Road and Bridge Maintenance



Disseminated to Regional Office and District Engineering Offices thru Department Order No. 94 s. 2014

❖ JICA Technical Manuals under TCP III for Road and Bridge and Database System

