Minutes of 5th JCC Meeting

The Assistance Related to Delhi Water Supply Improvement Project

10th March 2016

The 5th JCC meeting started at 16:00 PM

The meeting started with a presentation by Mr. Vikram Singh, SE (Project) Water III and Mapping, DJB, on behalf of the Assistance Related to Delhi Water Supply Improvement Project (the Project) to present agenda, progress and key issues related to the Project.

1. Progress of the Yen – loan project and the Project until December 2015

(1) Activities for the yen- loan Project and the Project

Among the 3 Activities in the Project, activities 1 and 3 have already been completed. DJB is preparing design and tender document of the Yen- loan project using the results of the activities 1 and 3 of the Project.

The remaining activity 2 was scheduled to complete by May 2016. However, the activity 2 needs to be extended due to the delay in installing the SCADA system and the need for improvement of the chambers and other activities required to avoid electricity leakage and accidents which may be caused by water entry to the chambers. For the prevention of accidents that may be caused by electricity leakage due to water logging in the chambers, DJB, JICA Expert Team (JET), and JICA have had series of discussions to find solutions on this issue.

(2) Agreed items in the previous meeting between JICA and DJB

In December 2015 JICA headquarters dispatched a mission to India and came to agree on the following items in the Minutes of Meeting signed on 10 December 2015 (M/M). All parties reconfirmed the contents of M/M.

a) Demarcation of responsibilities for undertaking countermeasures for prevention of electricity leakage in valve chambers
b) Assignment of DJB counterparts for technology transfer during implementation of countermeasures against electricity leakage in valve chambers
c) Implementation schedule of the Project
d) Reasons and justification for extension of the Project duration
e) Amendments to the Records of Discussions (R/D) on the project
f) Ownership and demarcation of responsibilities between stakeholder for construction/installation, operation and maintenance of chambers and SCADA system
g) Maintenance of SCADA system after it is handed over from JICA to DJB
h) Revision of Project Design Matrix (PDM) and Plan of Operation (PO).

2. Revision of PDM and PO

Based on the agreement of M/M, JICA and DJB need to revise PDM and PO to reflect the new implementation schedule extended beyond the original schedule. DJB, JET and JICA agreed on the revised PDM shown in Attachment 1and the revised PO shown in Attachment 2. All parties also confirmed that the revised PDM and PO would take effect after the approval of the Government of India for the Minutes of Meeting between JICA and DJB for amendment of the Records of Discussions, which has already been circulated in the Government of India.

3. Implementation schedule of the project

All parties confirmed the revised tentative implementation schedule of the Project as shown in Attachment 3 which can be supplemental information of PO. JET plans to start the required actions and activities according to Attachment 3 for improvement works of the constructed chambers and others together with the counterparts of DJB listed in M/M.

In connection with improvement works of the chambers and others, DJB indicated test site of DJB Pitampura office for model improvement works of valve chambers. DJB also assured to take improvement measures against side walls of the existing chambers to prevent water ingress through them.

Regarding the test chamber for carrying out the water seepage measures, JET required DJB's cooperation for the following items. DJB agreed on the following proposed items.

(1) In order to inspect the inside of chamber 10 and 11, pump out the water that has accumulated inside.
(2) Permission to construct the test chamber at the Pitampura sewage pumping station.
(3) Arrange water for leak test of test chamber.
(4) Arrange man-power for the various works.
(5) Determination of counterparts from DJB.

In addition, the following items were discussed and agreed:

(1) Joint inspection by both DJB and JET will be done to check if water ingress is stopped or still occurring in two chambers (No.10 & 11).
(2) Mr. V. K. Singh, EE (NW) III is the nodal contact person for Activity 2. JET is requested to contact him for any assistance / coordination that may be required.

4. Sharing knowledge and technology with the Indian side

All parties confirmed that knowledge and technology for preventing the problems on electricity leakage and water ingress throughout the stages of design, tendering, and construction supervision of valve chambers should be transferred to DJB counterparts, while they are working together with JET for the improvement work. DJB also promised to take actions to share its know-how of the countermeasures within DJB such as making guidelines and conducting the seminars.

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In his remarks JICA representative Mr. Itaru Chiba emphasized the active involvement of DJB, knowledge sharing and sustainability. In his closing remarks, Additional CEO (Project Director) Mr. Neeraj Semwal emphasized the need to speed up the work to make for the lost time. He also assured that regular follow-up will be done and whatever beneficial knowledge and experiences are obtained from this project, the same may be utilized by DJB in other projects also.

The 5th JCC meeting closed at 17:00 PM

Mr. Neeraj Semwal

Additional CEO (Project Director)

DJB

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for Mr. Kazufumi MOMOSE

Chief Advisor

JICA Expert Team

Mr. Itaru Chiba

Representative

JICA India Office

Attachments:

1. Revised PDM
2. Revised PO
3. Revised Implementation Schedule of the Project
4. Presentation Sheet including Agenda
5. Attendance list

Attachment 1 Project Design Matrix (PDM, Proposed and Approved at-5th JCC)

Name of project: The Assistance related to Delhi Water Supply Improvement Project	Duration of Period: four years and ten months from June 2013 (June 2013 – March 2018)
Project area: Chandrawal treatment system area and Pitampura area	Target group: DJB personnel

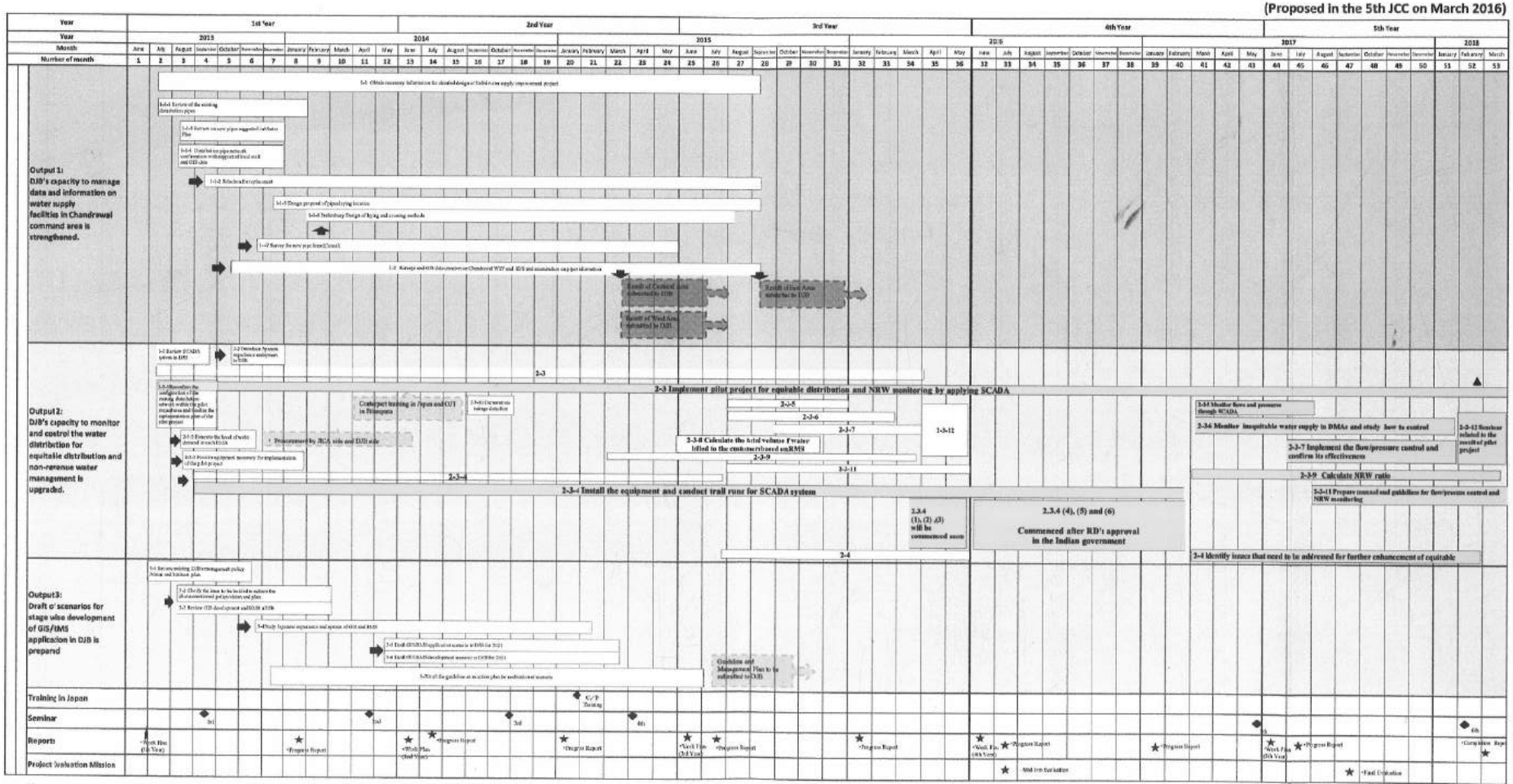
Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal: To achieve the equitable and continuous water distribution in the National Capital Territory of Delhi, by improving the water supply network including service network to customers, thereby contributing in upgrading citizen's living standard	a. Service hours in Chandrawal WTP command area to customers(hours/day) is 24 hours b. NRW ratio in Chandrawal WTP command area is less than 15%. c. Tariff collection ratio in Chandrawal WTP command area is more than 90%	Same as evaluation of "Delhi Water Supply Improvement Project"	
Project Purpose: DJB's capacity for the implementation of "Delhi water supply improvement project" is strengthened.	a. Basic information on pipe-networks is reflected in DPR for components 2-4 of "Delhi Water Supply Improvement Project" prepared by DJB. b. The gap among DMAs in water pressure and volume based on DMAs' demand is reduced. (Pressure: From X meters to Y meters, Volume: From X m^3per connection to Y m^3per connection.) c. Guideline for introduction of asset management based on scenarios for stage wise development of GIS/RMS application is reflected in DPR for component 5 of "Delhi Water Supply Improvement Project" prepared by DJB	a. Confirmation of contents of DPRs b. Reports on water pressure and volume of DMAs c. Confirmation of contents of DPRs	"Delhi Water Supply Improvement Project" is completed as planned
Outputs: 1. DJB's capacity to manage data and information on water supply facilities in Chandrawal command area is strengthened. 2. DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded. 3. Draft of scenarios for stage wise development of GIS/RMS application in DJB is prepared 0. The assistance is managed and coordinated properly	1a. Construction methods of pipe crossing (railways, rivers, and major roads) and laying method (Open-cut and Trenchless) for "Delhi Water Supply Improvement Project" are determined by DJB. 1b. Locations (alignment and depth) of transmission and distribution pipes for "Delhi Water Supply Improvement Project" are determined by DJB 2a. DJB can control the water flow/pressure properly with SCADA based on the manuals and guidelines prepared by the Assistance in the pilot project area 2b. NRW ratio is clarified and continuously observed in the pilot project area 3. Draft of guideline for introduction of asset management is prepared	1a. DJB's Authorization on construction method 1b. DJB's Authorization of Reports on pipeline route 2a. Field Assessment by concerned experts 2b.Record on data of NRW ratio 3. Minutes of Meeting on submission of draft of guideline on asset management to DJB.	Consultants of "Delhi Water Supply Improvement Project" implement the detailed design work as scheduled.

Activities	Inputs		
1. Strengthening capacity to manage data and information on water supply facilities in Chandrawal command area 1-1. Obtain necessary information for detailed design of Delhi water supply improvement project 1-1-1. Review of the existing distribution pipes 1-1-2. Selection for replacement 1-1-3. Review on new pipes suggested in Master Plan 1-1-4. Distribution pipe network confirmation with support of local staff and GIS data 1-1-5. Design proposal of pipes laying location 1-1-6. Preliminary Design of laying and crossing methods 1-1-7. Survey for new pipe lines 1-2. Surveys and GIS data creation on Chandrawal WTP and booster pumping station and examination on pipes information 2. Upgrading capacity to monitor and control the water distribution 2-1. Summarizing issues by reviewing the situation of SCADA use in DJB 2-2. Introduction of Japanese experience and its system to DJB 2-3. Operation of pilot project (equitable distribution and NRW monitoring) 2-3-1. Confirmation on existing distribution pipes network condition in pilot area 2-3-2. Pilot project operation plan 2-3-3. Quantitative estimate of demand in each DMA 2-3-4. Procurement of equipment and test operation for pilot project 2-3-5. Flow amount and pressure monitoring within SCADA pilot project area 2-3-6. Identification of issues related to equitable water supply and discussion and determination for its solution 2-3-7. Implementation of control method and examination of its effectiveness 2-3-8. Water bill calculation within the pilot area based on revenue management system data 2-3-9. Calculation of NRW ratio 2-3-10. Leakage detection demonstration in the pilot area 2-3-11. Formulation of manual and guideline for flow amount and pressure controls and NRW monitoring 2-3-12. Seminar presenting the results of pilot project 2-4. Identification of issues around equitable distribution and NRW monitoring 3. Draft of scenarios for stage wise development of GIS/RMS application in DJB 3-1. Review on DJB's administration strategy, vision and operation plan 3-2. Identification of obstacles to achieve above strategy, vision and plan 3-3. Review on development situation on RMS and GIS 3-4. Understand the content of system and the example of GIS and RMS usage in Japan 3-5. Formulation of GIS and RMS utilization application scenario by 2021 3-6. Formulation of GIS/RMS development scenario by 2021 3-7. Formulation of asset management introduction guideline 0-1. Organize Joint Coordinating Committee (JCC) meeting at least once a year 0-2. Finalize the indicators of the PDM and the Plan of Operations (PO) for approval of the first JCC meeting 0-3. Prepare a draft Annual Plan of Operations (APO) based on the PO and an annual progress report for review by JCC for approval of the JCC 0-4. Monitor the progress and achievement of the Assistance based on PO/APO and the indicators of the PDM through JCC	[Japanese Side] 1. Japanese Experts: (1)Chief Advisor (2)GIS Application (3)Pipe-Network(1) (4)Pipe-Network(2) (5)GIS Mapping/ Project Coordinator (6)SCADA (7)NRW Analyst (8)DMA (9)Leak Detection (10)Water Supply Management (11)Project Coordinator (12)Others (by Mutual consent) (13)Civil engineer 2. Local Consultants 3. Equipment 4. Training of DJB personnel concerned with the Assistance in Japan 5. Seminars on Japanese water utilities in Delhi 6. Civil work for construction of a demonstration chamber 7. Civil work for improvement of chambers	[DJB Side] (a) Management Personnel 1. Counterpart personnel 1) Project Director 2) Project Manager 3) Deputy Project Manager 4) Officer in charge of Pilot Project (b) Technical personnel 1) WTP &Rising Main in Chandrawal Command Area 2) Distribution network in Chandrawal Command Area 3) Pipe network in Pilot Project area 4) Pumping Station in Pilot project area 5) SCADA 6) GIS Mapping 7) GIS Application 8) RMS 9) Civil in Pilot Project area 10) E&M in Pilot Project area 2. Office Spaces and Facilities 3. Permissions to access DSSDI and existing DJB's GIS data and necessary information 4. Daily payment to CP, cost of operation 5. Civil work for chamber construction 6. Permission for construction from related authorities 7. Civil work for improvement of chambers	1. Water is delivered to UGR in the Pitampura pilot project area from the Haiderpur Water Treatment Plant 2. Pumps and other equipment run without major disruptions **Precondition:** 1. DSSDI GIS data on utilities other than water pipelines can be used. 2. The scope of "Delhi Water Supply Improvement Project" is not changed dramatically.

Notes: Unfixed figures (X and Y) in PDM shall be decided during activity 2-3-5
This PDM is approved at the 5th JCC. The "Duration of Period", however, becomes effective after approval of "Minutes of meetings for amendment of the record of discussions".

Attachment 2 **Plan of Operations (PO) of THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT IN THE REPUBLIC OF INDIA**

(Proposed in the 5th JCC on March 2016)

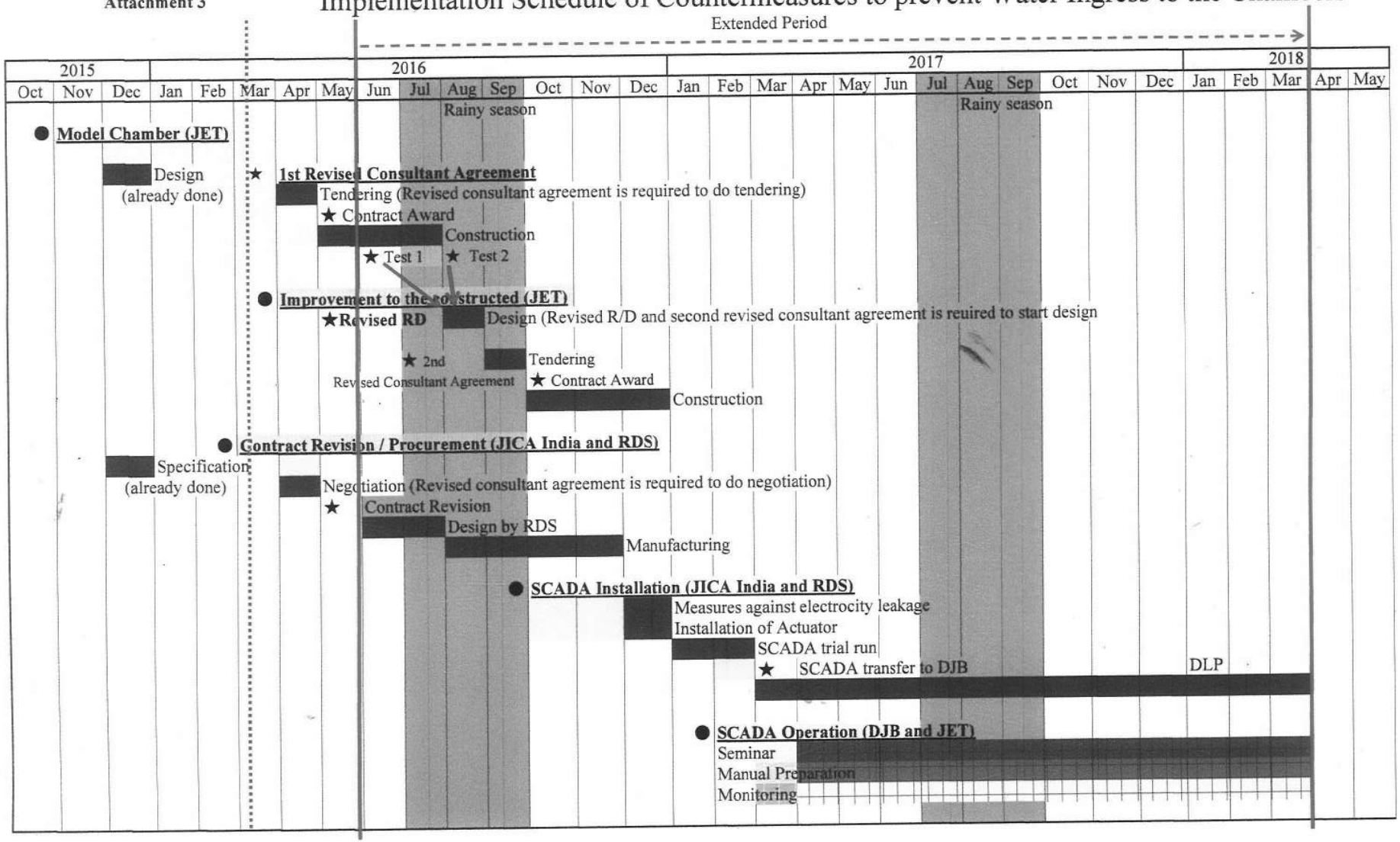


Note 1
Activities 2 shaded by Yellow are revised schedule.

Note 2
2-3-4 Install the equipment and conduct test operation for SCADA system
(1) Construction of a model chamber in a Pilanpura DJB office.
(2) Test and Evaluation of water tightness of the model chamber.
(3) Based on the above (2), propose and execute improvement measures required to the model chamber.
(4) Test and evaluate the improvement works based on (3)
(5) Based on the above (4), prepare specifications for improvement of the existing chambers constructed by DJB.
(6) Execute the improvement measures to the existing chambers.

Attachment 3

Implementation Schedule of Countermeasures to prevent Water Ingress to the Chambers



Attachment - 4.

Japan International Cooperation Agency

The Assistance Related to Delhi Water Supply Improvement Project

5th JCC Meeting

10 March 2016
DJB Conference Hall

Delhi Jal Board
JICA Expert Team

1. Agenda

Time	Contents
16:00	Opening remarks DJB: Mr. Neeraj Semwal, Addl. C.E.O. (Project Director) JICA: Mr. Itaru Chiba, Representative, JICA India Office
16:20	Agenda ● Achievement (July 2015 to December 2015) ● Confirmation of Minutes of Meeting on 10th December 2015 ● Work Plan (January 2016 to June 2016) ● Issues ● Modification of PDM. ● Approval of RD ● Others
16:40	Discussion and decisions on key issues
16:50	Conclusion & Closing remarks DJB: Mr. Neeraj Semwal, Addl. C.E.O. (Project Director)

Participants:

Indian side
DJB: All JCC Members (listed in R/D)

Japanese side
JICA India Office
JICA Experts

Observers
Embassy of Japan

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2. Purpose of the Project

Overall Goal : "Delhi Water Supply Improvement Project" (in Chandrawal WTP Command Area)

To achieve equitable and continuous water distribution in the National Capital Territory of Delhi, by improving the water supply network including service network to customers, thereby contributing to upgrading citizen's living standard.

Project Purpose: "The Assistance related to Delhi Water Supply Improvement Project" (in Chandrawal WTP Command Area)

DJB's capacity for the implementation of Delhi water supply improvement project (in Chandrawal WTP Command Area) is strengthened.

3

3. Purpose of the three Activities

Activity 1:
DJB's capacity to manage data and information on water supply facilities in Chandrawal WTP command area is strengthened.

Activity 2:
DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded.

Activity 3:
Draft of scenarios for stage wise development of GIS/RMS application in DJB is prepared.

* Target Group is DJB's Personnel

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4. Achievement of Assistance Project and Status of PMSC Project

- **Activity 1 and 3**
  - Results Completed and transferred to DJB.
  - DJB/PMSC have prepared or is preparing DPRs
- **Activity 2**
  - On-going

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5. Activity 2

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5.1 Purpose of Activity-2

- DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded.
  - ➢ Acquired know-how can be exported to Chandrawal WTP project.
  - ➢ Know-hows should be shared among every staff of DJB even after Assistance Project.

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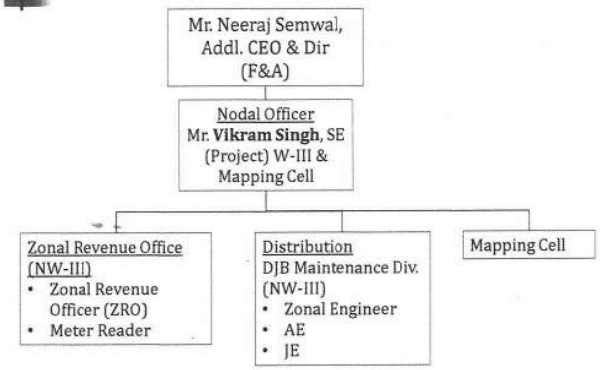
5.2 Organization for Activity 2



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5.3 Achievement Target of DJB staffs in Activity 2

- Basics of SCADA system
- Operate SCADA system for equitable distribution and NRW reduction
- Monitor inflow and pressure
- Monitor billed consumed water amount
- Estimate NRW comparing inflow amount with consumed amount
- Develop manual on SCADA operation and NRW measurement

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6. Progress of Activity 2

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6.1 Project Progress up to June 2015

- Facilities were being constructed under Activity 2.
- DMAs with valves, meters, SCADA system were almost ready for operation.
- Concern arises on water ingress to the constructed valve and meter chambers in May to June 2015.
- Water ingress may cause electricity leakage inside the chambers.

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6.2 Physical Works Suspension from July 2015 to 10 March 2016

- Countermeasures and revised schedule was preliminarily discussed and agreed in the 4th JCC meeting between DJB and JICA expert team.
- The above was further clarified and the minutes were agreed between DJB and JICA in December 2015.
- Field surveys on every connections including both registered and unregistered ones completed.

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7. Contents of M/M agreed on 10 December 2015

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7. (a) Project Extension Agreed

- The following issues are agreed;
  1. Demarcation of responsibilities for undertaking countermeasures for prevention of electricity leakage in valve chambers
  2. Assignments of DJB counterparts for technology transfer
  3. Implementation schedule
  4. Reasons and justifications for extension of the Project duration
  5. Amendments to the Record of Discussions (R/D)
  6. Ownership and demarcation of responsibilities for construction/installation, operation and maintenance of chambers
  7. Maintenance of SCADA system after it is handed over from JICA to DJB.
  8. Revision of PDM and PO
- As a result, the Project is extended for about 2 years to March 2018.

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7.1 (a) Demarcations of Responsibilities for undertaking countermeasures for prevention of electricity leakage in valve chambers and 7.2 (a) Assignments of DJB counterparts for technology transfer

Countermeasures	Responsible Party	Implementing Agency	Monitoring & Quality Control	
			DJB	JET
1-1 Stopping ingress of rain water from top manhole / opening covers of chambers	JICA	JET	EE (Civil)	Civil Works
1-2 Plugging leakages through the side walls of chambers	DJB	DJB*	EE (Civil)	Civil Works
2 Installation of alarm device and electric circuit breaker	JICA	RDS	EE (E&M)	SCADA
3-1 Procurement of water-proof materials and equipment	JICA (already done)	RDS (already done)	EE (E&M)	SCADA
3-2 Ensuring electrical safety of staff and equipment with grounding and leakage prevention circuit breaker	JICA	RDS	EE (E&M)	SCADA
4 Regular inspection, cleaning and dewatering of chambers	DJB	DJB*	EE (Civil)	Civil Works#
* DJB or Contractor assigned by DJB, # only during the implementation of the Project From Attachment 1, M/M dated 10 December 2015				

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7.1 (b) Demarcations of Responsibilities for undertaking countermeasures for prevention of electricity leakage in valve chambers and 7.2 (b) Assignments of DJB counterparts for technology transfer

- DJB will prepare a manual and hold a seminar on the following issues so as to share the acquired information among DJB:
  - Design and supervision of the proposed countermeasures mentioned in the previous sheet.

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7.3 Implementation schedule

- Refer to Revised PO (Plan of Operation)

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7.4 Reasons and justifications for extension of the Project duration

1. Selection of SCADA agency: 9 months
2. Water ingress into valve chambers: 1 year and 1 month

Refer to item 4, M/M dated on 10 December 2015

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7.5 Amendments to the Record of Discussions (R/D)

- Duration of Assistance" of the Record of Discussion (R/D) should be changed from "3 years from June 2013" to "4 years 10 months from June 2013".
- Documents are now in the hand of MoUD as of 8th March 2016.
- Expected to be approved by MoUD and DEA by May 2016.

Refer to item 5, M/M dated on 10 December 2015

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7.6 (a) Ownership and demarcation of responsibilities between stakeholders for constrcution / installation, operation and maintenance of chambers

Expected Period	Construction	Handover	Operation and Maintenance	
			DLP	After DLP
	to January 2017	February 2017	Feb. 2017 to Oct. 2017	from Oct. 2017
Construction	DJB	-	-	-
Improvement Works	DJB for side walls/ JICA for top slab	-	-	-
Operation	-	-	-	-
Maintenance	DJB	-	DJB	DJB
Ownership	DJB			
Monitoring by JET/ JICA				-

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7.6 (b) Ownership and demarcation of responsibilities between stakeholders for construction / installation, operation and maintenance of SCADA system and 7.7 Maintenance of SCADA system

Expected Period	Installation	Handover	Operation and Maintenance	
			DLP	After DLP
	to January 2017	February 2017	Feb. 2017 to Oct. 2017	from Oct. 2017
Installation	RDS	-	-	-
Operation	-	-	DJB	DJB
Maintenance	DJB	-	DJB	DJB *
Ownership	RDS	JICA	DJB *	
Monitoring by JET/ JICA				-

* DJB or contractor assigned by DJB.
Refer to Attachment 4, M/M dated 10 December 2015

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7.8 (a) Revision of PDM and PO

- PO, refer to revised PO
- PDM, refer to revised PDM

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7.8 (b) Revision of PDM

- One of the "Objectively Verifiable Indicators",
  The gap among DMAs in water pressure and volume based on DMAs' demand is reduced. (Pressure: From **X** meters to **Y** meters, Volume: From **X** m^3 per connection to **Y** m^3 per connection.)
- This was to be decided in 25 months after the project start when SCADA operation was expected to start.
  However, it is to be revised as "within 2 months after the SCADA operation, namely Activity 2-3-5 starts" due to delay of SCADA installation work. Scheduled date will be expected in April 2017.

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8. Project Status and Planned Additional Activities

8.1 Project Status as of March 2016

- Specifications of the model chamber and additional devices of SCADA are already prepared.
- Then, improvements to the existing valve chambers can start in Match by JICA Expert Team together with DJB.

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8.2 Additional Project Plan (1st stage: Model Chamber)

- Firstly, Model chamber similar to the existing chambers already constructed will be constructed within DJB premises by JET.
- Water-tightness of the chamber will be examined.
- Countermeasures will be proposed and implemented based on the examination.

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8.3 Additional Project Plan (2nd stage: Improvements to the Existing Chambers)

- The 2nd stage can start only after RD approval.
- If the implemented countermeasures are acceptable, specifications on improvements of water tightness to the existing chambers will be prepared with cost estimation.
- Improvements to the existing chambers will be implemented.
- Then, SCADA operation will start.

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9. Seminar by Waterworks Bureau of Tokyo Metropolitan Government

No.	Year	Date	Topic / Content
1st	1st	Aug 2013	TMWB's Business Administration, Finance and General Information
2nd		Feb. 2014	Efficient Maintenance Management for Facilities
3rd	2nd	Aug. 2014	NRW Reduction
4th		March 2015	Asset Management Plan
5th	3rd	Feb 2017?	SCADA Operation and Others
6th	4th	Aug. 2017?	To be decided

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Thank You!

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Attachment - 5

Japan International Cooperation Agency

5th JCC
DELHI WATER SUPPLY IMPROVEMENT PROJECT"
Organized By
Delhi Jal Board and Japan International Cooperation Agency
Date: 10th of Mar 2016

Venue: DJB Conference Hall	**Location:** Delhi, India	
Name	Title	Signature
V. K. Singh	EE(NW) III	
B.S. Rawat	EE (Proj.) W-II	
K.e. Verma.	AE (CE Off)	
M.K. Jain	SE (Central)	
R.S. Negi	C.E (water) Projects	
Nidhi Srivastava	DOR	
Naeem Jamaal	ACED	
Itaru Chiba	Representative, JICA	
Masaru Fukushima	SCADA . JBT	
Hiroshi Kojima	JET	

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Japan International Cooperation Agency

5th JCC
DELHI WATER SUPPLY IMPROVEMENT PROJECT"
Organized By
Delhi Jal Board and Japan International Cooperation Agency
Date: 10th of Mar 2016

Venue: DJB Conference Hall	**Location:** Delhi, India	
Name	Title	Signature
ANUPAM JOSHI	JAPANESE LANGUAGE EXPERT.	
PHATTA THAPA	JICA EXPERT	
KAZUFUMI MOMOSE	CHIEF ADVISOR, JICA EXPERT TEAM	
VIKRAM SINGH	SE, (PROJ.) W-III	
Sanjay Prasad	JICA Expert	
Noboru Saito	TSS Tokyo water	

MINUTES OF MEETING

ON

THE SIXTH JOINT COORDINATING COMMITTEE

FOR

THE ASSISTANCE RELATED TO

DELHI WATER SUPPLY IMPROVEMENT PROJECT

IN THE REPUBLIC OF INDIA

Delhi, 4 August 2016

Neeraj Semwal
Project Director
Additional CEO
Delhi Jal Board
India

Kazufumi MOMOSE
Chief Advisor
JICA Expert Team

Takayoshi TANGE
Senior Representative
Japan International Cooperation Agency (JICA)
India Office

The sixth Joint Coordinating Committee (hereinafter referred to as "JCC") meeting for the Assistance Related to Delhi Water Supply Improvement Project (hereinafter referred to as "the Project") was held on 4 August 2016 with the JCC members as shown in Attachment 4 (attendance list) at the conference room of Delhi Jal Board (hereinafter referred to as "DJB"). All parties discussed and agreed on the items below;

1. Progress of the Yen - loan project and the Project until July 2016

Among the 3 Activities in the Project, activities 1 and 3 have already been completed. DJB is preparing design and tender document of the Yen- loan project using the results of the activities 1 and 3 of the Project.

2. Confirmation of PDM

DJB, JET and JICA agreed on the revised PDM (ver.5) shown in Attachment 1 that conforms exactly to the expressions used in the Record of Discussion (R/D) between DJB and JICA. Previously used PDM was same as the one in the R/D in the meanings but different in the expressions.

3. Confirmation of PO

DJB, JET and JICA agreed the PO (Plan of Operation) for the 4th year covering from July 2016 to June 2017 as shown in Attachment 2.

4. Construction of Demonstration Chamber

All parties confirmed the revised implementation schedule of the Project as shown in Attachment 3 which can be supplemental information of PO. According to the schedule, JET has constructed the model chamber in the Pitampura sewage pumping station and JET, DJB and JICA have proved that the constructed model chambers can practically prevent water from entering into the chambers.

5. Improvement Works to Chambers and SCADA System

(1) JET will conduct improvement works to the constructed chambers with the DJB counterparts for the purpose of knowledge and technology sharing while JICA will conduct improvement works to SCADA system in Pitampura.
(2) DJB assured to take improvement measures against side walls and bottom & top slabs (inside plaster only) of the existing chambers to prevent water ingress by the active participation of the relevant counterparts.
(3) DJB also assured to construct the remaining one chamber after installation of the control valve and flow meter by Recktronic Devices and Systems (RDS) was completed.

6. Sharing knowledge and technology with the Indian side

All parties confirmed that knowledge and technology for preventing the problems on water ingress and electricity leakage throughout the stages of design, tendering, and construction supervision of valve chambers should be transferred to DJB assigned counterparts, such as an Executive Engineer NW III (Civil) and an Executive Engineer NW (E&M) while they are working closely with JET for the improvement works. DJB also promised to take actions to share its know-how of the countermeasures within DJB such as making guidelines and conducting seminars.

7. SCADA Operation

(1) DJB re-assured that they will assign engineers and officers by February 2017 when SCADA trial run is scheduled. The assigned engineers and officers need to actively participate in SCADA operation for equitable water distribution and monitoring of non-revenue water particularly at the initial stage and during absence of JET that will be in the Pilot Project site only a few times. The

assigned engineers and officers will also demonstrate and train the acquired know-hows to other engineers and officers who will be responsible for similar operation in Chandrawal WTP command area.

(2) DJB and JET agreed that SCADA operation will be the topic of the seminar to be held in 2017.

8. Utilization of the pilot SCADA system after completion of the Project

DJB re-assured that the pilot SCADA system will continuously be utilized as a training facility for the enhancement of equitable water distribution and NRW monitoring even after completion of the Project.

9. Operation and Maintenance of Pitampura Training Centre for SCADA system

All parties reconfirmed that DJB would be responsible for the operation and maintenance of the SCADA system in Pitampura (Pitampura Training Centre for SCADA system) after handing over of the SCADA from JICA to DJB in February 2017 and a specialized agency will be hired by CE (West), DJB and he should therefore secure necessary budget for this purpose.

Attachments:

1. PDM (ver.5)
2. PO (4th Year)
3. Implementation Schedule of Improvements to Chambers and SCADA System
4. Attendance list

Project Design Matrix(PDM)

PDM Version 5 as of 4 August 2016

Title of the Project: "The Assistance related to Delhi Water Supply Improvement Project"
Project Area: Chandrawal Command Area and part of Pitampura area in Delhi
Executing and Implementing Organization: Delhi Jal Board (DJB)
Duration of the Project: four years and ten months from June 2013 (June 2013 -March 2018)
Beneficiary: DJB

Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumption
<Overall Goal> To achieve the equitable and continuous water distribution in the National Capital Territory of Delhi, by improving the water supply network including service network to customers, thereby contributing in upgrading citizen's living standard	a. Service hours in Chandrawal WTP command area to customers(hours/day) is 24 hours b. NRW ratio in Chandrawal WTP command area is less than 15%. c. Tariff collection ratio in Chandrawal WTP command area is more than 90%	Same as evaluation of "Delhi Water Supply Improvement Project"	
<Project Purpose> DJB's capacity to implement, operate and maintain "Delhi water supply improvement project" is strengthened.	a. Basic information on pipe-networks is reflected in DPR for components 2-4 of "Delhi Water Supply Improvement Project" prepared by DJB. b. The gap among DMAs in water pressure and volume based on DMAs' demand is reduced. (Pressure: From X meters to Y meters, Volume: From Xm^3 per connection to Ym^3 per connection*) c. Guideline for introduction of asset management based on scenarios for stage wise development of GIS/RMS application is reflected in DPR for component 5 of "Delhi Water Supply Improvement Project" prepared by DJB	a&c. Confirmation of contents of DPRs b. Report on water pressure and volume of DMAs	"Delhi Water Supply Improvement Project" is completed as planned.
<Outputs> 1. DJB's capacity to manage data and information on water supply facilities in Chandrawal command area is strengthened.	1a. Construction methods of pipe crossing (railways, rivers, and major roads) and laying method (Open-cut and Trenchless) for "Delhi Water Supply Improvement Project" are determined by DJB. 1b. Locations (alignment and depth) of transmission and distribution pipes for "Delhi Water Supply Improvement Project" are determined by DJB	1a. DJB's Authorization on construction method 1b. DJB's Authorization of Reports on pipeline route	Consultants of "Delhi Water Supply Improvement Project" implement the detailed design work as scheduled.
2. DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded.	2a. DJB can control the water flow/pressure properly with SCADA based on the manuals and guidelines prepared by the Assistance in the pilot project area 2b. NRW ratio is clarified and continuously observed in the pilot project area	2a. Field Assessment by concerned experts 2b.Record on data of NRW ratio	
3. Draft of scenarios for stage wise development of GIS/RMS application in DJB is prepared	3. Draft of guideline for introduction of asset management is prepared	3. Minutes of Meeting on submission of draft of guideline on asset management to DJB	
0. The assistance is managed and coordinated properly			

*Note: Unfixed figures (X and Y) in PDM shall be decided during activity 2-3-5.

<Activities>

1.Strengthing capacity to manage data and information on water supply facilities in Chandrawal command area

1-1. Obtain necessary information for detailed design of Delhi water supply improvement project.
1-1-1. Review of data of existing pipeline.
1-1-2. Select pipelines to be replaced.
1-1-3. Review of results of "the Study on Improvement of water supply system in Delhi" to install new pipes.
1-1-4. Obtain data and information on underground utilities by using DSSDI GIS data, and reconfirm pipeline network data with support of DJB field staff.
1-1-5. Draft pipe alignment and depth.
1-1-6. Draft pipe laying method (Open-cut and Trenchless) and crossing method (railways, rivers, drainage and major roads).
1-1-7. *Carry out topographic survey along pipe-alignment.*
1-2. Carry out survey and GIS mapping of WTPs, UGEs and BPSs, and verification of the data (location and size, etc) of pipes in Chandrawal WTP command area.

2. Upgrading capacity to monitor and control the water distribution

2-1. Review SCADA application in DJB
2-2. Introduce Japanese experience and system to DJB
2-3. Implement pilot project for equitable distribution and non-revenue (NRW) monitoring by applying SCADA
2-3-1. Reconfirm the configuration of the existing distribution network within the pilot project area and finalize the implementation plan of the pilot project
2-3-2. Estimate the level of water demand in each DMA
2-3-3. Procure equipment necessary for implementation of the pilot project
2-3-4. (a) Construct a demonstration chamber to check its performance
(b) Implement improvement works for water ingress of the constructed chambers
(c) Install the equipment and conduct trial runs of SCADA system
2-3-5. Monitor flows and pressures within the pilot project area through SCADA system
2-3-6. Monitor inequitable water supply in DMAs and study how to control flow/pressure to enhance equitable water supply
2-3-7. Implement the flow/pressure control and confirm its effectiveness
2-3-8. Calculate the total volume of water billed to the customers in the area based on the RMS
2-3-9. Calculate NRW ratio in the area
2-3-10. Demonstrate leakage detection activities in the area
2-3-11. Prepare manuals and guidelines for flow/pressure control and NRW monitoring
2-3-12. Hold a seminar to disseminate the scope and outcome of the pilot project across the entire DJB
2-4. *Identify issues that need to be addressed for further enhancement of equitable distribution and NRW* monitoring

3. Draft of scenarios for stage wise development of GIS/RMS application in DJB

3-1. Review existing DJB's management policy/vision and business plan
3-2. Clarify the issue to be tackled to achieve the above-mentioned policy /vision and plan
3-3. Review GIS development and Revenue Management System (RMS) in DJB
3-4. Study Japanese experience and system of GIS and RMS
3-5. Draft GIS and RMS application scenario in DJB for year 2021
3-6. Draft GIS and RMS development scenario in DJB for year 2021
3-7. Draft the guideline as an action plan for realization of scenarios

0. Assistance Management and Coordination

0-1. Organize Joint Coordinating Committee (JCC) meeting at least once a year
0-2. Finalize the indicators of the PDM and the Plan of Operations (PO) for approval of the first JCC meeting
0-3. Prepare a draft Annual Plan of Operations (APO) based on the PO and an annual progress report for review by JCC for approval of the JCC
0-4. Monitor the progress and achievement of the Assistance based on PO/APO and the indicators of the PDM through JCC

<Inputs>

DJB Side

1. Counterpart personnel
(a) Management Personnel
1) Project Director
2) Project Manager
3) Deputy Project Manager
4) Officer in charge of Pilot Project
(b) Technical personnel
1) WTP &Rising Main in Chandrawal Command Area
2) *Distribution network in Chandrawal* Command Area
3) Pipe network in Pilot Project area
4) Pumping Station in Pilot project Area
5) SCADA
6) GIS Mapping
7) GIS Application
8) RMS
2. Office Spaces and Facilities
3. Permissions to access DSSDI and existing DJB's GIS data and Necessary Information
4. Allowance and Running Expenses
5. *Civil Works for Pilot Project*
6. Permission from related authorities

Japanese Side

1. Japanese Experts
(1) Chief Advisor
(2) GIS Application
(3) Pipe-Network
(4) GIS Mapping
(5) SCADA
(6) NRW Analyst
(7) DMA
(8) *Leak Detection*
(9) Water Supply Management
(10) Project Coordinator
(11) Others (by Mutual consent)
e.g.Civil Work
2. Local Experts
3. Equipment
4. Training of DJB personnel concerned with the Assistance in Japan
5. Seminars on Japanese water utilities in Delhi

1.Water is delivered to UGR in the Pitampura pilot project area from the Halderpur Water Treatment Plant

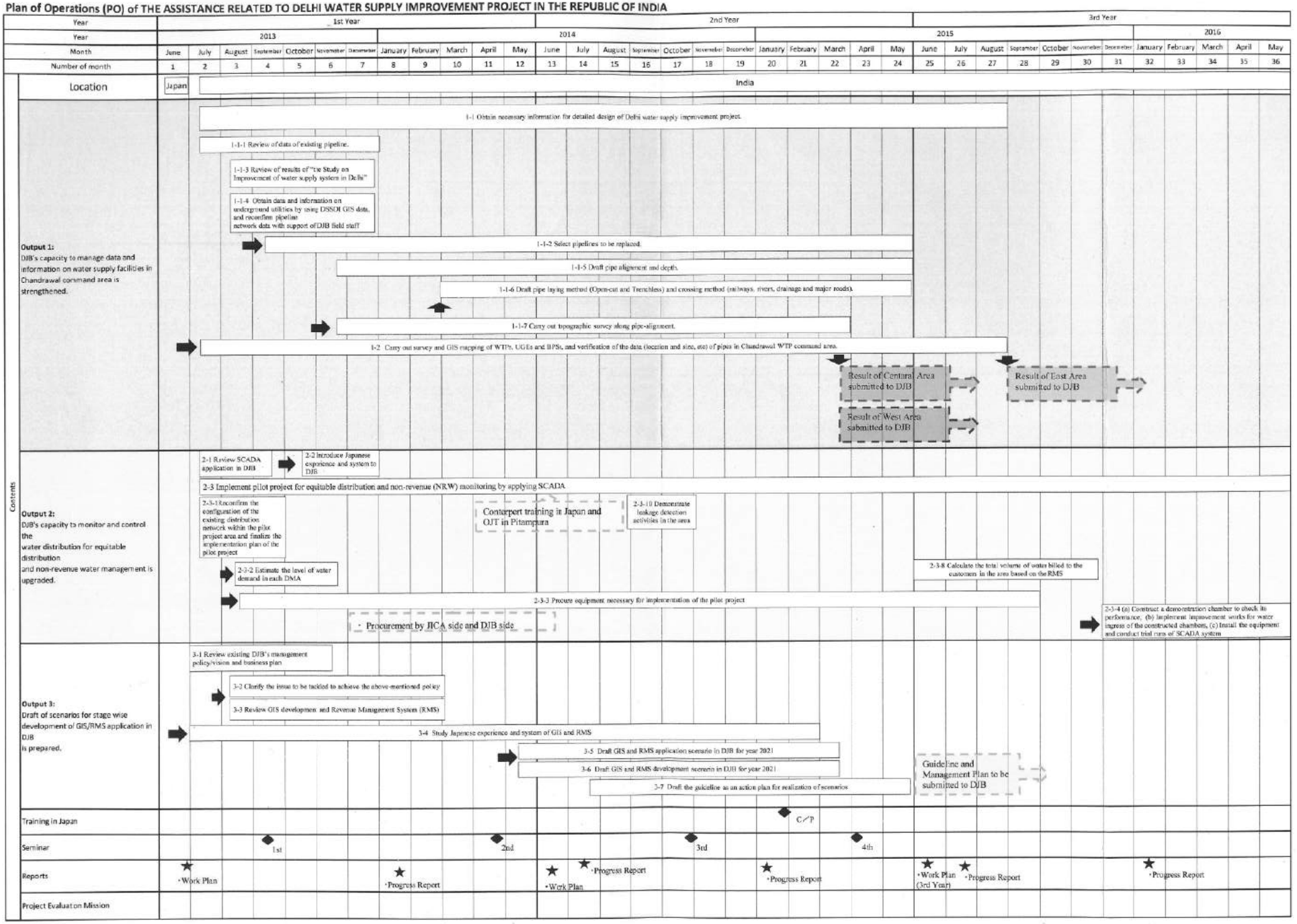
2. Pumps and other equipment run without major disruptions

Precondition:

1. DSSDI GIS data on utilities other than water pipelines can be used for the "Assistance Project".

2. The scope of "Delhi Water Supply Improvement Project" is not changed dramatically.

Plan of Operations (PO) of THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT IN THE REPUBLIC OF INDIA



Plan of Operations (PO) of THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT IN THE REPUBLIC OF INDIA

4th Edition

Year	4th Year												5th Year									
Year	2016												2017							2018		
Month	June	July	August	September	October	Novemeber	Decemeber	January	February	March	April	May	June	July	August	September	October	Novemeber	Decemeber	January	Feburary	March
Number of month	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58

Contents

Location: India

Output 1:
DJB's capacity to manage data and information on water supply facilities in Chandrawal command area is strengthened.

Output 2:
DJB's capacity te monitor and control the
water distribution for equitable distribution
and non-revenue water management is upgraded.

- 2-3 Implement pilot project for equitable distribution and non-revenue (NRW) monitoring by applying SCADA
- 2-3-5 Monitor flows and pressures within the pilot project area through SCADA system
- 2-3-6 Monitor inequitable water supply in DMAs and study how to control flow/pressure t o enhance equitable water supply
- 2-3-7 Implement the flow/pressure control and confirm its effectiveness
- 2-3-9 Calculate NRW ratio in the area
- 2-3-12 Hold a seminar to disseminate the coope and outcome of the pilot project across the entire DJB
- Use of available RMS data in Pilot project
- 2-3-4 (a) Construct a demonstration chamber to check is performance, (b) Implement improvement works for water ingress of the constructed chambers, (c) Install the equipment and conduct trial runs of SCADA system
- 2-3-11 Prepare manuals and guidelines for flow/pressure control and NRW monitoring
- 2-4 Identify issues that need to be addressed for further enhancement of equitable distribution and NRW monitoring

Output 3:
Draft of scenarios for stage wise development of GIS/RMS application in DJB
is prepared.

Training in Japan

Seminar: 5th; 6th

Reports:
- Work Plan (4th Year)
- Progress Report
- Progress Report
- Work Plan (5th Year)
- Progress Report
- Completion Report

Project Evaluation Mission:
- Mid-term Review
- Final Review

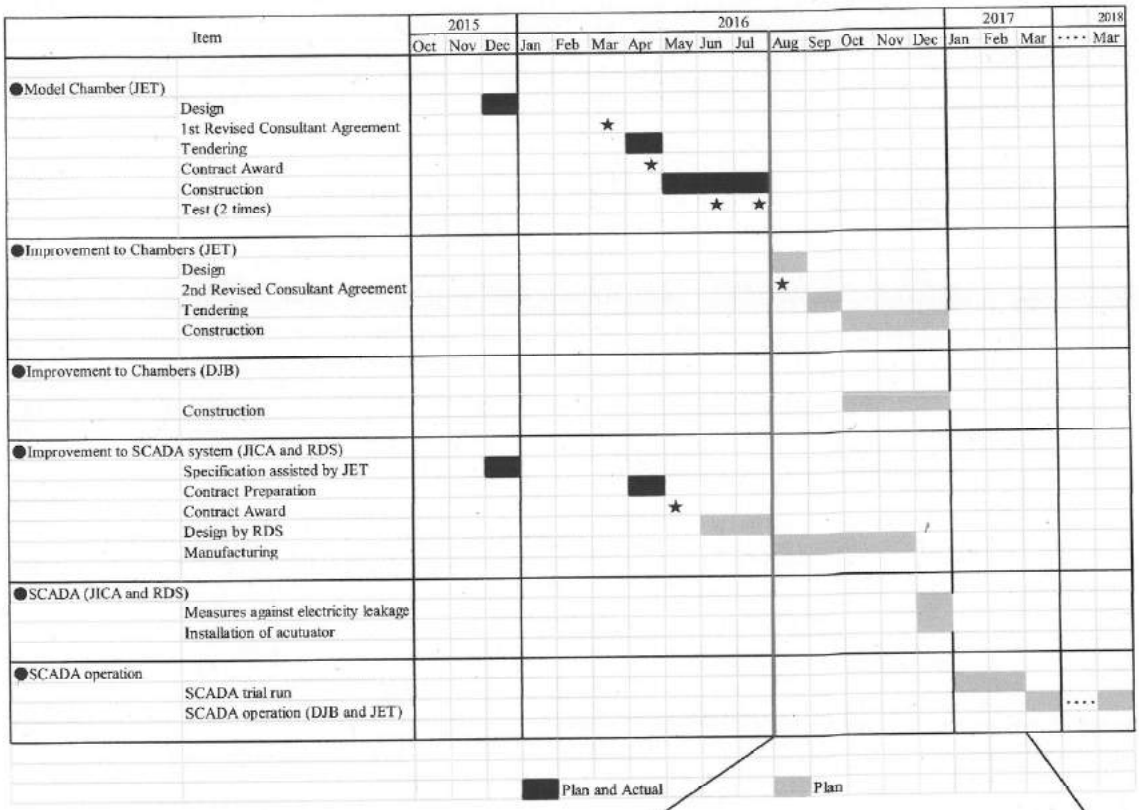
Annual Plan of Operation (APO-4th Year) of

THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT IN THE REPUBLIC OF INDIA

4th Edition

Year	4th Year												Person in charge	Equipment & Materials		Progress as of 31May 2016
Year	2016							2017						Items	Budget	
Month	June	July	August	September	October	Novemeber	Decemeber	January	February	March	April	May				
Number of month	37	38	39	40	41	42	43	44	45	46	47	48				
Contents / Output-1																Completed by 3rd year
Output-2: DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded.	2-3 Implement pilot project for equitable distribution and non-revenue (NRW) monitoring by applying SCADA												JICA Experts; SCADA, DMA, NRW Analyst, Civil DJB; S.E. (Project) Water-III S.E. (NW) E.E. (E&M) W&S N/W	- Procurement/ Installation of Equipment (SCADA, Control valves, Flow meters, Pressure gauges, Measures against electricity leakage) - Construction of demonstration chamber and water tightness test - Sealing the openings on man-hole covers and carry-in openings - Construction of chambers - Improvement of side walls and top slab - Operation cost (electricity and communication)	-JICA India office -JICA Expert Team by JICA fund -DJB	[Completed] 2-1. Review SCADA application in DJB 2-2. Introduce Japanese experience and system to DJB 2-3-1 Reconfirm the configuration of the existing distribution network within the pilot project area and finalize the implementation plan of the pilot project 2-3-2 Estimate the level of water demand in each DMA 2-3-3 Procure equipment necessary for implementation of the pilot project 2-3-8 Calculate the total volume of water billed to the customers in the area based on the RMS 2-3-10 Demonstrate leakage detection activities in the area [In Progress] 2-3. Implement pilot project for equitable distribution and non-revenue (NRW) monitoring by applying SCADA 2-3-4 (a) Construct a demonstration chamber to check its performance (b) Implement improvement works for water ingress of the constructed chambers (c) Install the equipment and conduct trial runs of SCADA system [Not yet started] 2-3-5 Monitor flows and pressures within the pilot project area through SCADA system 2-3-6 Monitor inequitable water supply in DMAs and study how to control flow/pressure to enhance equitable water supply 2-3-7 Implement the flow/pressure control and confirm its effectiveness 2-3-9 Calculate NRW ratio in the area 2-3-11 Prepare manuals and guidelines for flow/pressure control and NRW monitoring 2-3-12 Hold a seminar to disseminate the scope and outcome of the pilot project across the entire DJB 2-4 Identify issues that need to be addressed for further enhancement of equitable distribution and NRW monitoring
	2-3-4 (a) Construct a demonstration chamber to check its performance, (b) Implement improvement works for water ingress of the constructed chambers, (c) Install the equipment and conduct trial runs of SCADA system															
	2-3-5 Monitor flows and pressures within the pilot project area through SCADA system															
	2-3-6 Monitor inequitable water supply in DMAs and study how to control flow/pressure to enhance equitable water supply															
	2-3-9 Calculate NRW ratio in the area															
	· Use of available RMS data in Pilot project															
	2-3-11 Prepare manuals and guidelines for flow/pressure control and NRW monitoring															
	2-4 Identify issues that need to be addressed for further enhancement of equitable distribution and NRW monitoring															
Output-3																Completed by 2nd year
Seminar													Tokyo MWB & DJB	---	---	---
Reports	★ ·Work Plan (4th Year)		★ ·Progress Report					★ ·Progress Report					All Experts	---	---	---
Project Evaluation Mission			★ ·Mid-term Review										JICA	---	---	---

Implementation Schedule of Improvements to Chambers and SCADA System



Implementation Schedule and Responsibilities 2016.07.29

S.N.	Activity	Responsibilit	Aug 2016	Sep	Oct	Nov	Dec	Jan 2017	Feb
1	Contract preparation for chamber improvement	DJB							
2	Road cutting permission for the remaining No. 9 chamber	DJB							
3	Digging, pipe cutting, installation of flow meter, valve and actuator at No. 9 chamber location	RDS							
4	Construction of chamber as per revised specification	DJB							
5	Improvement to the constructed chambers								
5.1	Installation of actuators and SCADA system	RDS							
5.2	Improvement of side walls and top slab	DJB							
5.3	Sealing the openings on man-hole covers and carry-in openings	JET							
6	Measures against electricity leakage	RDS							
7	SCADA trial run	RDS, JET, DJB							

Japan International Cooperation Agency

Reporting of Mid Term Review & Signing of the Minutes
and
6th Joint Coordinating Committee (JCC)
under
"The Assistance Related to Delhi Water Supply Improvement Project"
Organized By
Delhi Jal Board andJapan International Cooperation Agency
Date: 04th of Aug 2016

Venue: DJB Conference Hall	**Location**: Delhi, India	
Name	Title	Signature
Addl. CEO- Sh. Neeraj Semwal.	In chair. DJB	
B.S. Rawat	EE (Proj.) W-II	
CHANDER PARKASH	EE (Mapping)	
Naresh Kumar	Dy. Dir. Rev. (HQ) III	
Minoru IKEI	JICA Expert Team Leader/Chief Advisor/Pipe Network	
Momoko Furuichi	Representative, JICA India Office	
M.P. Singh	Chief development specialist JICA India office.	
Shinjo Fujiwara	Water Resources Group. JICA HQs	
Sadanobu SAWARA	JICA H/Qs	
Takayoshi TANGE	JICA India	
Kazufumi Monzen	JICA Expert, Chief Advisor	
Phatta Thapa	JICA Expert, Pipe Network (1)	

Japan International Cooperation Agency

Reporting of Mid Term Review & Signing of the Minutes
and
6th Joint Coordinating Committee (JCC)
under
"The Assistance Related to Delhi Water Supply Improvement Project"
Organized By
Delhi Jal Board andJapan International Cooperation Agency
Date: 04th of Aug 2016

Venue: DJB Conference Hall	**Location**: Delhi, India	
Name	Title	Signature
Rajesh Maithani	CE(W) Proj DJB	
AJAY KUMAR	SE(P&) W-III DJB	
Mukesh Jindal	EE (NW)-III	
M.K. Jain	SE (Central)	
K.C. Verma	AE (E/M)	
Pukhraj Singh	AE(PP) W-II	
Sanjay Prasad	JICA Expert	
Hiroko Onizato	JICA Mid-term Review Mission	
Manabu Fukushima	JICA Expert SCADA	
ANUPAM JOSHI	JICA EXPERT. LANGUAGE	
Hiroshi Kojima	JICA EXPERT Civil	

MINUTES OF MEETING

ON

THE SEVENTH JOINT COORDINATING COMMITTEE

FOR

THE ASSISTANCE RELATED TO

DELHI WATER SUPPLY IMPROVEMENT PROJECT

IN THE REPUBLIC OF INDIA

Delhi, 29 August 2017

Ms. Nidhi Srivastava

Project Director
Additional CEO
Delhi Jal Board (DJB)
India

Kazufumi MOMOSE
Chief Advisor
JICA Expert Team (JET)

The seventh Joint Coordinating Committee (hereinafter referred to as "JCC") meeting for the Assistance Related to Delhi Water Supply Improvement Project (hereinafter referred to as "the Project")was held on 29August 2017 with the JCC members as shown in Attachment1(attendance list) at Hotel Crowne Plaza, Rohini, Delhi. All parties discussed and agreed on the items below;

1. Confirmation of Plan of Operation (PO)

DJB, JICA Expert Team(JET) and JICA agreed the PO for the 5th year covering from July 2017 to March 2018as shown in Attachment 2. DJB and JET agreed the weekly schedule as shown in Attachment 7 based on the PO and the both parties agreed further to monitor it and revise it, if required.

2. Focal points for SCADA Operation

DJB re-assured that the following from DJB will be responsible for operation and maintenance of SCADA system and related facilities;

Overall:	Addl. CEO (Project Director);Ms. Nidhi Srivastava
Nodal Officer:	CE (West); Mr. Ramesh Thakur
Civil (chambers):	EE (NW) III; Mr. Mukesh Jindal
SCADA system:	EE (NW) E&M; Mr. U. K. Rastogi
Non-revenue Water:	Director (Revenue); Ms. Nidhi Srivastava
	EE (NW) III; Mr. Mukesh Jindal
	EE (Mapping cell); Mr. Chander Prakash

3. Improvement Works to Chambers and SCADA System before Handover to DJB

Each party will conduct the followings until handover to DJB by JICA:

(1) DJB will continue to monitor water ingress to the chambers after every significant rainfall.
(2) JICA will continue to improve SCADA system(both equipment and chambers in chambers No. 6, 7 and 10 and other small works) in Pitampura.
(3) When ingress is observed, DJB (Civil) will drain water out of chamber(s) while JICA will check function of SCADA system.
(4) If required, DJB (Civil) will conduct improvement works to chamber(s) immediately.

4. SCADA system will be transferred to DJB immediately after completion of SCADA installation. The trainings will be conducted as per the plan shown in Attachment 4.

5. Operation and Maintenance of SCADA system by DJB

All parties reconfirmed that DJB would be responsible for the operation and maintenance of the SCADA system in Pitampura starting after transferring to DJB. DJB Chief Engineer (West) shall appoint a specialized agency for O&M of the SCADA system and he should therefore start the required process including (i) budget preparation, (ii) preparation of TOR for hiring the agency, (iii) request for quotation, and (iv) contract documentation by 1stDecember 2017 at the latest. Schedule of contract documentation is attached to Attachment 5.

6. DJB has confirmed that of SCADA system including the chambers will be inspected at least two times every year (once before and once after the rainy season) plus after every major rainfall event during rainy season. Responsible section, method and frequency of inspection are outlined in Attachment 6.

7. Utilization of the SCADA system as a Training Facility after the Project
   DJB reconfirmed that after handing over from JICA to DJB, the SCADA system in Pitampura will be developed as 'Pitampura Training Centre for SCADA System' and will continuously be utilized as a training facility for the enhancement of equitable water distribution and NRW monitoring in future. The trainings will be conducted as per the plan shown in Attachment 4.

8. Sharing Knowledge and Technology with the Indian Side
   All parties reconfirmed that knowledge and technology for preventing the problems on water ingress and electricity leakage throughout the stages of design, tendering, and construction supervision of valve chambers should continue to be transferred to DJB assigned counterparts, such as the Executive Engineers NWIII (Civil) and NW (E&M) while they are working closely with JET for the improvement works. DJB also promised to take actions to share its know-how of the countermeasures within DJB such as making guidelines and conducting seminars.

Attachments:

1. Attendance list
2. Plan of Operation (5th Year)
3. Project Design Matrix
4. Plan of training in Pitampura Training Centre for SCADA
5. Schedule of contract documentation for maintenance of SCADA equipment
6. Responsible section, method and frequency of inspection of SCADA equipment and chamber
7. Weekly Schedule

Note : FEE (NW) II should be read as EE (NW) III.

Japan International Cooperation Agency

THE SEVENTH JCC UNDER
"THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT"
Organized By
Delhi Jal Board and Japan International Cooperation Agency
Date: 29th of Aug 2017

Venue: Crystal Ball Room, Crowne Plaza | 03.00 PM Onwards, **Location**: Delhi, India

Name	Designation	Contact Number	Signature
Rajesh Mittal	CE(W) Proj	[redacted]	
M.P. Singh	Chief Dev Specialist DJB		
Ramesh Thakur	Chief Engineer W		
AJAY KUMAR	SE(Proj) W-III, DJB		
M.K. Hans	SE(E&M)WC/NW		
B.S. Rawat	EE (Proj.) W-II		
Pramod Kr Jain	SE(NW)		
Shesh Ram Singh	SE(C&M) WSP		
U.K. Rastogi	EE/E&M)KG/NW		
Mukesh Jindal	EE(NW)-III		
R.P. Goswami	AE(C&M)-II		
SANDEEP SHARMA	AE-I NW III		
Yogendra Singh	JE(C&M) OSB		
Kuldeep Chauhan	JE(C&M) DJB		
SHIMIZU Wataru	JET		
Saito Nobumi	〃		
PHATTA THAPA	〃		
Fukushima Manabu	〃		
Hiroshi Kojima	〃		
ANUPAM JOSHI	〃		
Yamamoto Yoichi	THWB		
Yosuke Saito	↑		
Kaori Hada	JICA India		
Fujita Akiko	JICA HQ		

A8-100

Attachment-1

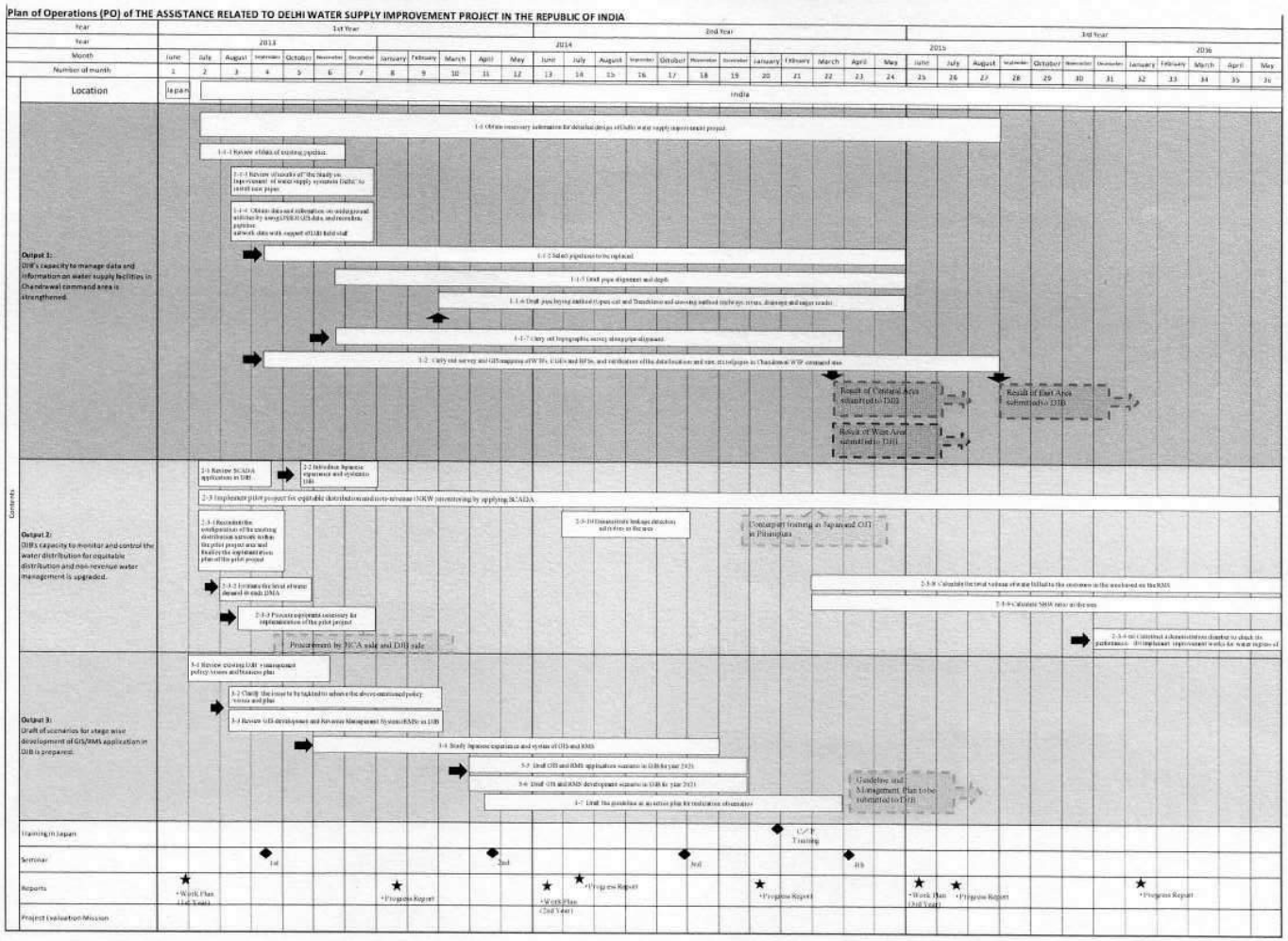
Japan International Cooperation Agency

THE SEVENTH JCC UNDER
"THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT"
Organized By
Delhi Jal Board and Japan International Cooperation Agency
Date: 29th of Aug 2017

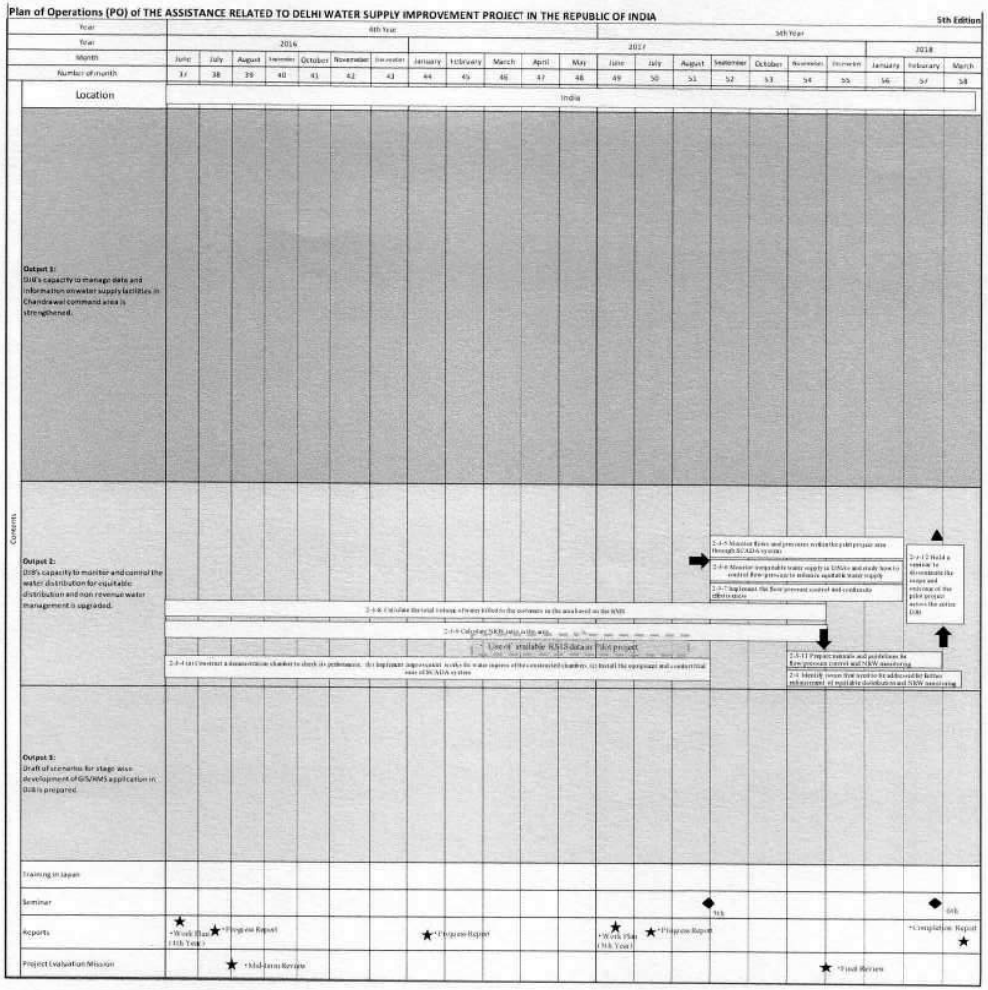
Venue: Crystal Ball Room, Crowne Plaza | 03.00 PM Onwards, **Location**: Delhi, India

Name	Designation	Contact Number	Signature
Momose Kazufumi	JET	[redacted]	
Takayoshi Tange	JICA India		
Eriko Tamura	JICA HQ		
Nidhi Srivastava	Addl CEO DJB		
M.K. Jain	SE (Central)		
Sanjay Prasad	JET		
MANTRANA	TEC Int. Co. Ltd.		

Attachment 2 (1/3)Plan of Operation (1/2)



Attachment 2 (2/3)Plan of Operation (2/2)



Attachment 2 (3/3)Annual Plan of Operation

Annual Plan of Operation (APO-5th Year) of

THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT IN THE REPUBLIC OF INDIA

5th Edition

Year	5th Year										Person in charge	Equipment & Materials		Progress as of 15 June 2017
Year	2017							2018				Items	Budget	
Month	June	July	August	September	October	Novemeber	Decemeber	January	February	March				
Number of month	49	50	51	52	53	54	55	56	57	58				
Output-1														**Completed by 3rd year**
Contents **Output-2:** DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded.	**2-3 Implement pilot project for equitable distribution and non-revenue (NRW) monitoring by applying SCADA** 2-3-4 (a) Construct a demonstration chamber to check its performance, (b) Implement improvement works for water ingress of the constructed chambers. (c) Install the equipment and conduct trial runs of SCADA system 2-3-5 Monitor flows and pressures within the pilot project area through SCADA system 2-3-6 Monitor inequitable water supply in DMAs and study how to control flow/pressure to enhance equitable water supply 2-3-7 Implement the flow/pressure control and confirm its effectiveness 2-3-12 Hold a seminar to disseminate the scope and outcome of the pilot project across the entire DJB 2-3-8 Calculate the total volume of water billed to the customers in the area based on the RMS 2-3-9 Calculate NRW ratio in the area ・Use of available RMS data in Pilot project 2-3-11 Prepare manuals and guidelines for flow/pressure control and NRW monitoring 2-4 Identify issues that need to be addressed for further enhancement of equitable distribution and NRW monitoring										JICA Experts; SCADA, DMA, NRW Analyst, Civil DJB; S.E. (Project) Water-III S.E. (NW) E.E. (E&M) W&S N/W	- Procurement/ Installation of Equipment (SCADA, Control valves, Flow meters, Pressure gauges, Measures against electricity leakage) - Construction of demonstration chamber and water tightness test - Sealing the openings on man-hole covers and carry-in openings - Construction of chambers - Improvement of side walls and top slab - Operation cost (electricity and communication)	-JICA India office -JICA Expert Team by JICA fund -DJB	[Completed] 2-1. Review SCADA application in DJB 2-2. Introduce Japanese experience and system to DJB 2-3-1 Reconfirm the configuration of the existing distribution network within the pilot project area and finalize the implementation plan of the pilot project 2-3-2 Estimate the level of water demand in each DMA 2-3-3 Procure equipment necessary for implementation of the pilot project 2-3-8 Calculate the total volume of water billed to the customers in the area based on the RMS 2-3-10 Demonstrate leakage detection activities in the area [In Progress] 2-3. Implement pilot project for equitable distribution and non-revenue (NRW) monitoring by applying SCADA 2-3-4 (a) Construct a demonstration chamber to check its performance (b) Implement improvement works for water ingress of the constructed chambers (c) Install the equipment and conduct trial runs of SCADA system [Not yet started] 2-3-5 Monitor flows and pressures within the pilot project area through SCADA system 2-3-6 Monitor inequitable water supply in DMAs and study how to control flow/pressure to enhance equitable water supply 2-3-7 Implement the flow/pressure control and confirm its effectiveness 2-3-9 Calculate NRW ratio in the area 2-3-11 Prepare manuals and guidelines for flow/pressure control and NRW monitoring 2-3-12 Hold a seminar to disseminate the scope and outcome of the pilot project across the entire DJB 2-4 Identify issues that need to be addressed for further enhancement of equitable distribution and NRW monitoring
Output-3														**Completed by 2nd year**
Training in Japan											Tokyo MWB + DJB Engineers	---	---	**Completed on 2nd year**
Seminar											Tokyo MWB & DJB	---	---	---
Reports	★・Work Plan (5th Year)		★・Progress Report					★・Completion Repor			All Experts	---	---	---
Project Evaluation Mission			★・Final Review								JICA	---	---	---

Project Design Matrix(PDM)

Title of the Project: "The Assistance related to Delhi Water Supply Improvement Project"
Project Area: Chandrawal Command Area and part of Pitampura area in Delhi
Executing and Implementing Organization: Delhi Jal Board (DJB)
Beneficiary: DJB

PDM ver. 5 as of July/2016
Duration of the Project: four years and ten months from June 2013(June 2013 -March 2018)

Narrative Summary	Objectively Verifiable Indicator	Means of Verification	Important Assumption
<Overall Goal> To achieve the equitable and continuous water distribution in the National Capital Territory of Delhi, by improving the water supply network including service network to customers, thereby contributing in upgrading citizen's living standard	a. Service hours in Chandrawal WTP command area to customers(hours/day) is 24 hours b. NRW ratio in Chandrawal WTP command area is less than 15%. c. Tariff collection ratio in Chandrawal WTP command area is more than 90%	Same as evaluation of "Delhi Water Supply Improvement Project"	
<Project Purpose> DJB's capacity to implement, operate and maintain "Delhi water supply improvement project" is strengthened.	a. Basic information on pipe-networks is reflected in DPR for components 2-4 of "Delhi Water Supply Improvement Project" prepared by DJB b. The gap among DMAs in water pressure and volume based on DMAs' demand is reduced. (Pressure: From X meters to Y meters, Volume: From Xm³ per connection to Ym³ per connection*) c. Guideline for introduction of asset management based on scenarios for stage wise development of GIS/RMS application is reflected in DPR for component 5 of "Delhi Water Supply Improvement Project" prepared by DJB	a&c. Confirmation of contents of DPRs b. Report on water pressure and volume of DMAs	"Delhi Water Supply Improvement Project" is completed as planned
<Outputs> 1.DJB's capacity to manage data and information on water supply facilities in Chandrawal command area is strengthened.	1a. Construction methods of pipe crossing (railways, rivers, and major roads) and laying method (Open-cut and Trenchless) for "Delhi Water Supply Improvement Project" are determined by DJB. 1b. Locations (alignment and depth) of transmission and distribution pipes for "Delhi Water Supply Improvement Project" are determined by DJB	1a. DJB's Authorization on construction method 1b. DJB's Authorization of Reports on pipeline route	Consultants of "Delhi Water Supply Improvement Project" implement the detailed design work as scheduled.
2.DJB's capacity to monitor and control the water distribution for equitable distribution and non-revenue water management is upgraded.	2a. DJB can control the water flow/pressure properly with SCADA based on the manuals and guidelines prepared by the Assistance in the pilot project area 2b. NRW ratio is clarified and continuously observed in the pilot project area	2a. Field Assessment by concerned experts 2b.Record on data of NRW ratio	
3.Draft of scenarios for stage wise development of GIS/RMS application in DJB is prepared	3. Draft of guideline for introduction of asset management is prepared	3. Minutes of Meeting on submission of draft of guideline on asset management to DJB	
0. The assistance is managed and coordinated properly			

*Note: . Unfixed figures (X and Y) in PDM shall be decided during activity 2-3-5.

<Activities>	<Inputs>	
1.Strengthing capacity to manage data and information on water supply facilities in Chandrawal command area 1-1. Obtain necessary information for detailed design of Delhi water supply improvement project. 1-1-1. Review of data of existing pipeline. 1-1-2. Select pipelines to be replaced. 1-1-3. Review of results of "the Study on Improvement of water supply system in Delhi" to install new pipes. 1-1-4. Obtain data and information on underground utilities by using DSSDI GIS data, and reconfirm pipeline network data with support of DJB field staff. 1-1-5. Draft pipe alignment and depth. 1-1-6. Draft pipe laying method (Open-cut and Trenchless) and crossing method (railways, rivers, drainage and major roads). 1-1-7. Carry out topographic survey along pipe-alignment. 1-2. Carry out survey and GIS mapping of WTPs, UGEs and BPSs, and verification of the data (location and size, etc) of pipes in Chandrawal WTP command area.	DJB Side 1. Counterpart personnel (a) Management Personnel 1) Project Director 2) Project Manager 3) Deputy Project Manager 4) Officer in charge of Pilot Project (b) Technical personnel 1) WTP &Rising Main in Chandrawal Command Area 2) Distribution network in Chandrawal Command Area 3) Pipe network in Pilot Project area	1.Water is delivered to UGR in the Pitampura pilot project area from the Halderpur Water Treatment Plant 2. Pumps and other equipment run without major disruptions
2. Upgrading capacity to monitor and control the water distribution 2-1. Review SCADA application in DJB 2-2. Introduce Japanese experience and system to DJB 2-3. Implement pilot project for equitable distribution and non-revenue(NRW) monitoring by applying SCADA 2-3-1. Reconfirm the configuration of the existing distribution network within the pilot project area and finalize the implementation plan of the pilot project 2-3-2. Estimate the level of water demand in each DMA 2-3-3. Procure equipment necessary for implementation of the pilot project 2-3-4. (a) Construct a demonstration chamber to check its performance (b) Implement improvement works for water ingress of the constructed chambers (c) Install the equipment and conduct trial runs of SCADA system 2-3-5. Monitor flows and pressures within the pilot project area through SCADA system 2-3-6. Monitor inequitable water supply in DMAs and study how to control flow/pressure to enhance equitable water supply 2-3-7. Implement the flow/pressure control and confirm its effectiveness 2-3-8. Calculate the total volume of water billed to the customers in the area based on the RMS 2-3-9. Calculate NRW ratio in the area 2-3-10. Demonstrate leakage detection activities in the area 2-3-11. Prepare manuals and guidelines for flow/pressure control and NRW monitoring 2-3-12. Hold a seminar to disseminate the scope and outcome of the pilot project across the entire DJB 2-4. Identify issues that need to be addressed for further enhancement of equitable distribution and NRW monitoring 3. Draft of scenarios for stage wise development of GIS/RMS application in DJB 3-1. Review existing DJB's management policy/vision and business plan 3-2. Clarify the issue to be tackled to achieve the above-mentioned policy /vision and plan 3-3. Review GIS development and Revenue Management System (RMS) in DJB 3-4. Study Japanese experience and system of GIS and RMS 3-5. Draft GIS and RMS application scenario in DJB for year 2021 3-6. Draft GIS and RMS development scenario in DJB for year 2021 3-7. Draft the guideline as an action plan for realization of scenarios 0. Assistance Management and Coordination 0-1. Organize Joint Coordinating Committee (JCC) meeting at least once a year 0-2. Finalize the indicators of the PDM and the Plan of Operations (PO) for approval of the first JCC meeting 0-3. Prepare a draft Annual Plan of Operations (APO) based on the PO and an annual progress report for review by JCC for approval of the JCC 0-4. Monitor the progress and achievement of the Assistance based on PO/APO and the indicators of the PDM through JCC	4) Pumping Station in Pilot project Area 5) SCADA 6) GIS Mapping 7) GIS Application 8) RMS 2. Office Spaces and Facilities 3. Permissions to access DSSDI and existing DJB's GIS data and Necessary Information 4. Allowance and Running Expenses 5. Civil Works for Pilot Project 6. Permission from related authorities Japanese Side 1. Japanese Experts (1) Chief Advisor (2) GIS Application (3) Pipe-Network (4) GIS Mapping (5) SCADA (6) NRW Analyst (7) DMA (8) Leak Detection (9) Water Supply Management (10) Project Coordinator (11) Others (by Mutual consent) e.g. Civil Work 2. Local Experts 3. Equipment 4. Training of DJB personnel concerned with the Assistance in Japan 5. Seminars on Japanese water utilities in Delhi	**Precondition:** 1. DSSDI GIS data on utilities other than water pipelines can be used for the "Assistance Project". 2. The scope of "Delhi Water Supply Improvement Project" is not changed dramatically.

Attachment 4

Tentative program of training in Pitampura Training Centre for SCADA System

S N	Trainer	Trainees	Duration	Schedule								
				Sep 17	Oct 17	Nov 17	Dec 17	Jan 18	Feb 18	2018/ Mar ~	2019	2020
1	RDS	EE (NW) III EE (NW) E&M ZE (NW) III AE (NW) E&M	1 day	■								
2	JICA Expert	EE (NW) III EE (NW) E&M ZE (NW) III AE (NW) E&M	1 day each time	■	■	■						
3	The trainees of S.N. 1 and 2 above	Group 1	1 day each time				■	■	■	■	■■	■■
		Group 2	1 day each time				■	■	■	■	■■	■■
		Group 3	1 day each time				■	■	■	■	■■	■■

Trainees:

Group 1: EE and EE E&M (4 persons), from Chandrawal, Wazirabad, and other WTP areas

Group 2: ZE and AE E&M (4 persons)

Group 3: ZE and AE E&M (4 oersons)

Note: Training is organized by DJB.

Contract for SCADA System Maintenance

1. Target of Contract

End of November 2017 at the latest.

If contract can start 1st December SCADA equipment are to be guaranteed seamlessly after defect liability period between JICA and RDS expires at the end of November 2017.

2. Terms of Reference

Prepared by 8thSeptember

General Condition: DJB format

Particular Condition:

- Daily Inspection: excluded and to be conducted by EE (E & M)
- Regular Inspection: included, 1 to 2 times, items to be inspected, refer to inspection sheet prepared by JET
- Emergency call: included, 2 ways; one is fixed amount regardless of repairs and another is on-call basis that will require cost quotation or pre-arranged cost at the contract.

The above can be discussed with RDS and reflected into particular condition, if necessary. Meeting is to be held on 4th September.

3. Budget Arrangement

End of November 2017 by the latest.

4. Tendering Schedule

Procedure	Required Minimum Time	Time Line
0. Preparation of Tender Document		8 September
1. Selection of Bidder		
2. Preparation of Bid	30 days ?	
3. Notice and Receiving of Bid		
4. Evaluation of Bid		
5. Decision of Contractor by Board	15 days ? or when board meeting is scheduled in October?	
6. Contract Award		1 November at the latest

To be finalized after hearing from DJB

4. Reporting of Tendering Process to JET

Inspection of SCADA System

I. Responsible Section

Overall:	Addl. CEO (Project Director); Ms. Nidhi Srivastava
Nodal Officer:	CE (West); Mr. Ramesh Thakur
Civil (chambers):	EE (NW) III; Mr. Mukesh Jindal
SCADA equipment:	EE (NW) E&M; Mr. U. K. Rastogi
Non-revenue Water:	Director (Revenue); Ms. Nidhi Srivastava
	EE (NW) III; Mr. Mukesh Jindal
	EE (Mapping cell); Mr. Chander Prakash Time of Inspection

II. Inspection of SCADA Equipment

1. Frequency of Inspection

(1) Regular Inspection

Twice a year (According to schedule of chamber inspection)

① Pre-monsoon season

SCADA server, clients: Visual appearance inspection of the exterior of the equipment, checking the normal operation of each application and checking for alarms and errors. If alarms and errors are occurring frequently, identify the cause and respond.

Local station: Visual appearance inspection of the local panel. Also, operating the switch from the local panel and checking the operation.

② Post-rainy season

In addition to ①, at the timing of opening the chamber, Visual appearance inspection of the equipment and wiring inside the chamber, checking the valve opening / closing operation and sound together. Respond immediately when there is any serious damage.

(2) Emergency Response

① After occurrence of water level alarm and draining of accumulated water in chambers by EE (Civil),checking the equipment inside the chamber.

② If any equipment in the chamber has failed, identify the cause and respond.

2. Inspection Method

(1) SCADA server, clients

① Error contents and frequency of the operating system

② Alarm contents and frequency of the SCADA screen

③ Operation and soundness of each application

④ Operation and soundness from the clients

⑤ GPRS network communication

(2) Local panel

① Slippage, rattling, deformation, and cracking of panel

② Indicators and lamps of panel

③ Cracking, corroding, and damaging of parts inside panel

④ Working condition of each equipment such as PLC, modem, relay, etc.

⑤ Opening / closing operation by electric valve switch

(3) Equipment in the chamber

① Opening / closing operation from the local panel

② Slippage, rattling, deformation, cracking of flow meter, pressure gauge and wiring

III. Inspection of Chamber

(1) Regular Inspection

Two times a year

① Before rainy season

Appearance inspection of outer wall

② After rainy season

Appearance inspection of outer and inner walls

(2) Emergency Response

① After receiving accident warning signal of water level alarm from EE (E&M), inspect water in chamber and drain accumulated water in chambers after rainfall.

② Analyze causes of water ingress and repair it.

(3) Other Inspection

Inspection of chambers can be conducted when SCADA equipment is inspected. Coordination between EE (Civil) and EE (E&M) is required. Whenever chambers are opened for their inspection and repair, conduct sealing works on manholes and openings immediately after the repair is finished, based on the procedures JET conducted during the Project.

2. Inspection Method

(1) Top Slab (Appearance)

① Crack and fracture

② Slippage, rattling, deformation, cracking of manholes and openings including their frames

③ Cracking and peeling-off of joints and caulking compound

④ Parked cars and goods (Garbage, material etc.)

(2) Inside of Chamber

① Loss of material (peeling, scaling, cracking, deformation, damage) on water-proofing mortar

② Exposure of I-steel and reinforced bars and their rust

③ Cracking, corrosion, and damage of joints of steps with wall

④ Exposure of bricks

⑤ Deformation of walls and scaling of water-proofing mortar

⑥ Trace of water on slab, walls, and floor

⑦ Water or trace of water

(3) Pipe and Appurtenances

① Corrosion of pipe, appurtenances, and flange bolts

② Leakage from joints of pipe and appurtenances.

Monitoring Sheet (1/2)

	Installation (SCADA)		Construction (Civil)		Training (TOT)		Training (DJB)	
	JET	DJB	JET	DJB	JET	DJB	JET	DJB
PIC	Fukushima	U.K.Rastogi	Saito, Kojima	Mukesh Jindal	Fukushima	U.K.Rastogi		U.K.Rastogi
Weekly Plan								
28-Aug	- Visiting India - Supervise Construction - Quality checking SCADA system - Evaluate cost of additional							
4-Sep	- Check and approve of Test procedure for Trial run			- Improvement work at No. 7				
11-Sep	- Visit India -Supervise installation of No6,7 setuators and No10 flowmeter -Supervise internal trial run by RDS		- Visit India -Supervise seating work of at No. 2, 6, 7, 8, 10				- Confirm Planning of Training	
18-Sep	- Visit India - Supervise Construction - Trial Run - Approve of Submitted final drawings and documents - Make Completion	- Trial Run (17:30-20:30 20th,21th,22th) - Agree with Completion Certificate			- Visit India - Assist training from RDS to DJB	- Training from RDS using Instruction Manual (15:00-17:30, 18th,19th,20th,21th,22th)		
25-Sep								-Submit JET the Planning of Training
2-Oct								will be decided later
9-Oct								
16-Oct								
23-Oct								
30-Oct								
6-Nov								
13-Nov			If the monsoon was over - Visit India - Supervise improvement work at No. 6, 7 of DJB	If the monsoon was over - Execution of improvement work at No. 6, 7				
20-Nov			- OJT of chamber inspection after monsoon	- OJT of chamber inspection after monsoon			- Look over of training to other divisions of DJB	- Training to other division of DJB
27-Nov								
4-Dec								
11-Dec								
18-Dec								- Training to other divisions of DJB
25-Dec								
1-Jan								
8-Jan								
15-Jan								- Training to other divisions of DJB
22-Jan								
29-Jan								
5-Feb								
12-Feb								
19-Feb								- Training to other divisions of DJB
26-Feb								

Monitoring Sheet (2/2)

	SCADA Operation		Manual and Guideline		Maintenance Contract		NRW		
PIC	JET Fukushima	DJB U.K.Rastogi	JET Fukushima	DJB U.K.Rastogi	JET Munose	DJB U.K.Rastogi	JET Shimizu	DJB Mukesh Jindal	DJB Revenue
Weekly Plan									
28-Aug					- Support of Tender Document - Leave India				
4-Sep			- Quality check of Instruction manuals of operation and maintenance						
11-Sep	- Visit India - Prepare weekly report and daily record format		- Visit India - Quality check of Instruction manuals of operation and maintenance from RDS		- Support of Tender Document	- Preparation of Tender Document		- Door to door Survey	
18-Sep	- Visit India - Prepare weekly report and daily record format		- Study of manual and guideline contents	- Study of manual and guideline contents and schedule				- Door to door Survey - Check Data every week (Pressure, Flow) - Send Data to JET by e-mail (Pressure, Flow)	
25-Sep		- Daily operation and record of monitor flows and pressures - Report to Mr. Fukushima		- Making manual and guideline - Report to Mr. Fukushima every end of month by mail				- Door to door Survey - Check Data every week (Pressure, Flow)	
2-Oct		- Daily operation and record of monitor flows and pressures - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline		- Bidding		- Door to door Survey - Check Data every week (Pressure, Flow) - Send Data to JET by e-mail (Pressure, Flow)	
9-Oct	- Visit India - Identify issues of monitoring operation - Study how to control flow/pressure to enhance equitable water	- Identify issues of monitoring operation - Study how to control flow/pressure to enhance equitable water	- Visit India - checking progress - Review of mimual and guideline from flows and pressures monitoring operation	- Review of manual and guideline from flows and pressures monitoring operation		- Decision of Contractor by Board		- Door to door Survey - Check Data every week (Pressure, Flow)	
16-Oct	- Support of control flow/pressure to enhance equitable water	- Try to control flow/pressure to enhance equitable water		- Making manual and guideline				- Door to door Survey - Check Data every week (Pressure, Flow)	
23-Oct		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline				- Door to door Survey - Check Data every week (Pressure, Flow)	
30-Oct		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline - Report to Mr. Fukushima every end of month by mail		- Contract Award		- Door to door Survey - Check Data every week (Pressure, Flow)	
6-Nov		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline				- Door to door Survey - Check Data every week (Pressure, Flow) - Send Data to JET by e-mail (Pressure, Flow)	
13-Nov	- Visit India - Identify issues of equitable water controlling operation - Study of improvement on equitable water controlling	- Identify issues of equitable water controlling operation - Study of improvement on equitable water controlling operation	- Visit India - checking progress - Review of mimual and guideline from equitable water controlling operation	- Review of manual and guideline from equitable water controlling operation				- Door to door Survey - Check Data every week (Pressure, Flow)	
20-Nov	- Support of control flow/pressure to enhance equitable water	- Try to control flow/pressure to enhance equitable water		- Making manual and guideline				- Door to door to Survey - Check Data every week (Pressure, Flow)	
27-Nov		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline - Report to Mr. Fukushima every end of month by mail		- Handing over SCADA system from JICA		- Door to door Survey - Check Data every week (Pressure, Flow)	
4-Dec		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline		- Start Maintenance Contract	- Calculate NRW(Trial)	- Check Data every week (Pressure, Flow) - Send Data to JET by e-mail (Pressure, Flow) - Calculate NRW(Trial)	- Send Revenue Data to Mr. Jindal and JET(DMA1,2 and 3)
11-Dec		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline			- Calculate NRW(Trial)	- Check Data every week (Pressure, Flow) - Calculate NRW(Trial)	
18-Dec		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline			- Calculate NRW(Trial)	- Check Data every week (Pressure, Flow) - Calculate NRW(Trial)	
25-Dec		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline - Report to Mr. Fukushima every end of month by mail			- Calculate NRW(Trial)	- Check Data every week (Pressure, Flow) - Calculate NRW(Trial)	
1-Jan		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline				- Check Data every week (Pressure, Flow) - Send Data to JET by e-mail (Pressure, Flow) - Calculate NRW(Trial)	
8-Jan		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline				- Check Data every week (Pressure, Flow)	
15-Jan		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline				- Check Data every week (Pressure, Flow)	
22-Jan		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline				- Check Data every week (Pressure, Flow)	
29-Jan		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline - Report to Mr. Fukushima every end of month by mail				- Check Data every week (Pressure, Flow)	
5-Feb		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline			- Visit India - Check DMA site and Check NRW	- Calculate NRW	
12-Feb		- Daily operation and record of equitable water controlling - Report to Mr. Fukushima every Friday by mail		- Making manual and guideline					
19-Feb	- Visit India - Identify issues that need to be addressed for further enhancement of equitable distribution	- Identify issues that need to be addressed for further enhancement of equitable distribution - Report to entire DJB on	- Visit India - Support of Finalize of manual and guideline	- Finalize of manual and guideline					
26-Feb									

MINUTES OF MEETING

ON

THE EIGHTH JOINT COORDINATING COMMITTEE

FOR

THE ASSISTANCE RELATED TO

DELHI WATER SUPPLY IMPROVEMENT PROJECT

IN THE REPUBLIC OF INDIA

Delhi, 29 January 2018

Ms. Nidhi Srivastava

Project Director
Additional CEO
Delhi Jal Board (DJB)
India

Kazufumi MOMOSE
Chief Advisor
JICA Expert Team (JET)

The eighth Joint Coordinating Committee (hereinafter referred to as "JCC") meeting for the Assistance Related to Delhi Water Supply Improvement Project (hereinafter referred to as "the Project") was held on 29 January 2018 at the DJB Conference Room, Delhi with the JCC members as shown in Attachment 1 (attendance list). Following the opening remarks made by the Additional C.E.O of DJB and the Senior Representative of JICA India Office, one of the DJB counterparts to the Project presented the progress and outcome of the Project, which was then followed by the presentation of the results of the terminal evaluation of the Project by the Joint Terminal Evaluation Team. The JCC meeting then discussed some technical issues, in which DJB agreed to the following:

1. The DJB's Training Cell in collaboration with Chief Engineer (West) will implement training on SCADA according to the long-term training plan on SCADA developed in the Project and also utilizing the pilot SCADA system located in Pitampura.
2. Draft Guidelines for operation and maintenance of SCADA system, calculation of NRW and periodic reporting which was prepared in the Project is accepted by DJB as being the final version.

Attachments:

Attendance list

Japan International Cooperation Agency

THE EIGHTH JCC UNDER
"THE ASSISTANCE RELATED TO DELHI WATER SUPPLY IMPROVEMENT PROJECT"

Organized By

Delhi Jal Board and Japan International Cooperation Agency

Date: 29th of Jan 2018

Venue: DJB Conference Hall		02.00 PM Onwards, **Location**: Delhi, India	
Name	Designation	Contact Number	Signature
Mr. Nidhi Srivastava	Add CEO	[redacted]	
B.S. Rawat	EE (Proj.) W-II		
AJAY KUMAR	SE (PS) W-III		
Mukesh Jindal	E.E. (PLD)-III		
Pramod Kr Jain	SE (NW)		
U.K. Rastogi	EE (E&M) WB/NW		
RAMESH THAKUR.	CE (West)		
Takayoshi Tange	Sen. Rep./Dty. C.R.		
Sadanobu SAWARA	Senior Advisor to		
M.P. SINGH	chief dev. specialist		
Fujita Akiko	Deputy Director		
Kaori Honda	Programme Specialis		
Kazufumi Maezono	JICA Expert Tea		
Akiko Hirano			
Minoru Ikei	JICA Expert Tean		
MANTRANA	JET		
Sanjay Prasad	JICA Expert Tea		
Pradeep Kumar	AE (Proj) WWL		
Arun Verma	JE (Proj) WWL		
Alok Chhabra	JE (Project) W-II		