MINUTES OF MEETING ON

THE 2ND MEETING OF JOINT COORDINATING COMMITTEE

25th July 2018

including Project Monitoring Sheet Ver.2
(January 2018 to July 2018)

MINUTES OF MEETING
ON
THE SECOND MEETING OF JOINT COORDINATING COMMITTEE
FOR
PROJECT FOR STRENGTHENING THE TRAINING CAPACITY OF IBTC
ON NON-REVENUE WATER

HELD AT
HEADQUARTERS, DEPARTMENT OF WATER & SANITATION

Pretoria, 25th July 2018

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Mr. Akinori MIYOSHI
Chief Advisor,
Japan International Cooperation Agency
(JICA) Expert Team

Mr. Aloious Chaminuka
Chief Director: Engineering Services
Department of Water and Sanitation (DWS)
Republic of South Africa

Witness

Mr. Tomohiro Seki
Chief Representative,
JICA South Africa Office

Ms. Dimakatso Hlabangwane
Coordinator,
Municipal Infrastructure & Services
South Africa Local Government Association (SALGA),
Republic of South Africa

Attached Document

For monitoring, discussion on issues, challenges, solutions and way forward of the Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water (hereinafter referred to as "the Project") at the end of the Phase 1, the second meeting of Joint Coordinating Committee (hereinafter referred to as "JCC") was held on 25th July 2018.

1. Remarks

The Chairperson: Mr. Vincent Monene on behalf of Mr. Aloious Chaminuka opened the meeting and gave his thanks to the progress of the Project to date as evidenced by the completed survey report and the skills and capacity building benchmarking exercise conducted by DWS together with stakeholders in Japan. Mr. Chaminuka further expressed his gratitude to the Project Team members towards contribution to implementation of the Project.

As closing remarks, Mr. Tomohiro Seki, Chief Representative of JICA South Africa Office expressed his gratitude to the Project Team members. He further indicated that the results of the JCC meeting including documents and presentation should lead to the actual improvement, and the Project Team should strive to find solution presented by the identified challenges. Finally, he encouraged participants to have a passion for implementing the Project.

2. Presentation

Mr. Akinori Miyoshi, Chief Advisor and Mr. Thabo Masike, Co-Project Manager made a presentation (refer to Appendix 3) jointly, on summary of the results of project monitoring, then requested the JCC members to recognize issues, challenges and solutions, and approve the draft Project Monitoring Sheet (refer to Appendix 4).

Also, Mr. Thabo Masike, Co-Project Manager and Mr. Nobutaka Maruyama, JICA Expert made a presentation (refer to Appendix 5) jointly, on the proposed curriculum for Non-Revenue Water (hereinafter referred to as "NRW") Training based on the result of baseline survey, then requested the JCC members to approve it.

Mr. Akinori Miyoshi, Chief Advisor gave an explanation (refer to Appendix 6), on revision of Project Design Matrix (hereinafter referred to as "PDM") and Plan of Operations (hereinafter referred to as "PO"), then requested the JCC members to approve it (refer to Appendix 7).

Mr. Yoshiki Omura, Senior Advisor, JICA Monitoring Survey Mission expressed, as observation, its grave concern over the absence of IBTC personnel with engineering/technical background. Also, he emphasized some of JICA Experts were withheld from fielding in the country.

The Japanese side highlighted that the delay in implementation of the project affects the planning and operation of the Government of Japan including the cost thereof, as well as that the Government of Japan is concerned about the cancellation of skills transfer trips to Japan by South African counterparts.

2. Main Points discussed

As the result of discussions, all JCC members confirmed the following matters:

2-1. Delay of the Project (Phase 1)

The Project has been delayed for six months in conducting baseline survey, analyzing its result, consequently reviewing roles of IBTC, developing IBTC's NRW training business plan and designing the NRW Training.

Based on the request from South African side to deal with the delay, the JCC members approved to extend the Phase 1 for nine months through revision of PDM and PO. However, the Project keeps the total period of the Project unchanged (The Project will be over in the middle of August 2020).

2-2. The NRW Training based on the result of Baseline Survey

Based on the result of baseline survey, the Project Team concluded to develop the NRW Training not as accredited qualification-oriented training but as problem solving-oriented training with immediate impacts for municipalities. This change of a way of developing the NRW Training affects overall goal, project purpose, outputs, project activities and schedule.

The JCC members approved concepts and contents of the NRW Training based on the result of baseline survey as well as necessary revision of PDM and PO.

2-3. Institutional Collaboration with Stakeholders to conduct the NRW Training (Facilitators and Workplaces)

The Project communicates with and encourages stakeholders such as municipalities, DWS's entities like Water Boards to ensure collaboration and also identification of facilitators and workplace for the NRW Training by concluding memorandums of understanding between DWS and stakeholders. Also, in order to set up the site for workplace of the NRW Training, the Project makes the NRW Training coupled with existing DWS's Schedule 6B funded municipalities suffering from challenges of NRW.

DWS committed to take leadership to ensure facilitators and workplace of the NRW Training with necessary support from SALGA and JICA Experts.

2-4. Assignment of Engineering/Technical Personnel for the NRW Training

To ensure sustainability after the Project and capacity development in the process of any activities, the JICA's Technical Cooperation Project should be

implemented by the South African initiative with support from the Japanese side, which is in accordance with the basic concept of JICA's Technical Cooperation Project.

Now that the overall concept of the NRW Training was settled and the Project advances to more practical stage, engineering/technical personnel and other necessary personnel for the NRW Training (the details are stated in the monitoring sheet) are required to be assigned to develop the NRW Training including teaching/learning materials, training yard and equipment as well as to conduct the NRW Training actually.

DWS is going through procedure for assigning dedicated engineering/technical personnel to IBTC as project member in charge of the NRW Training. Other necessary personnel for implementing the NRW Training such as operation & maintenance of training yard and equipment should also be assigned certainly.

DWS committed to assign dedicated engineering/technical personnel to IBTC as project member for the NRW Training by the end of August 2018 as well as nominate and assign other necessary personnel for the NRW Training appropriately and on a timely basis. Also, as an update, DWS highlighted that the placement of two civil engineers to IBTC was confirmed.

2-5. Recent Absence of SALGA and Reactivation of Collaboration (A Pre-condition for the Project)

The Project encourages SALGA to nominate successor immediately and reactivate collaboration among the JCC and Project members.

DWS committed to enter into the memorandum of understanding with SALGA by the end of September 2018 to clarify its roles and ensure collaboration during the period of the Project.

SALGA committed to provide the project representative to attend all upcoming Project meetings and activities.

2-6. Project Management

Now that the overall concept of the NRW Training was settled and the Project advances to more practical stage, project management need to be improved.

As premises for the basic concept of JICA's Technical Cooperation Project mentioned above, both South African and Japanese side agreed to review roles and responsibilities of the Project Team members and the JICA Experts,

clarify task team and working groups, and improve schedule/time management, communication and information sharing including the minutes' sharing process.

3. Approval of Project Monitoring Sheet (Draft)

As the result of discussions, the JCC members approved the Project Monitoring Sheets (Draft) (refer to Appendix 4).

4. Approval of Concepts and Contents of the NRW Training

As a result of discussions, the JCC members approved the proposed NRW Training based on the result of baseline survey.

5. Approval of Revision of PDM and PO

Based on the Project Monitoring Sheet (Draft) and the result of discussion, the JCC members approved revision of PDM and PO (refer to Appendix 7). Comparison table of PDM revision is as follows:

Comparison Table of PDM Revision

Before Revision	After Revision
Overall Goal	
Non-Revenue Water (NRW) skills development for Municipalities are continuously conducted under the IBTC's direction in collaboration with SALGA.	Non-Revenue Water (NRW) management skills are utilized in NRW reduction projects of participating municipalities.
Objectively Verifiable Indicators	
1. Actual trainings in IBTC (No. of trainings / trades or skills) 2. IBTC organization/individual performance (degree/status) 3. Programmes planned in Strategic Business Model (trades or skills) 4. Actual trainings of NRW in Municipalities (No. of training)	1. NRW reduction projects using developed NRW management skills in participating municipalities are increased. 2. NRW ratio in participating municipalities is decreased.
Means of Verification	
1&4. Annual Training Report 2. Capacity Assessment Report 3. IBTC Strategic Business Model	1. Monitoring report of participating municipalities 2. DWS's No-Drop report and/or report from participating municipalities
Project Purpose	
NRW Skills Programme is continuously provided at IBTC, based on organizational and technical needs.	NRW management skills are developed for participating municipalities through the NRW Training by IBTC.

Before Revision	After Revision
Objectively Verifiable Indicators	
1. Actual trainings (No. of trainings / trades or skills) 2. IBTC organization/individual performance / capacity 3. Programmes planned in Strategic Business Model (trades or skills) 4. Status of accreditation of NRW Unit Standards applied to SETA	1. No. of the NRW Training at IBTC is increased. 2. No. of water balance submission is increased. 3. No. of NRW reduction plan in participating municipalities is increased.
Means of Verification	
1. Annual Training Report 2. Capacity Assessment Report 3. IBTC Strategic Business Model 4. SETA Accreditation Certificate	1. IBTC's annual training report 2&3. DWS's No-Drop report and/or report from participating municipalities
Output 1	
Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities.	Skill development, status-quo and challenges of NRW, and needs in municipalities are analyzed and shared with stakeholders.
Objectively Verifiable Indicators	
1-1. List of training resources (by providers, programmes, human resources, manuals, subsidies/grants, etc.) 1-2. Benchmarked matrix (summary) of Japan and South Africa on water services (comparative features, strength/weakness, methodology, etc.)	1-1. Analyzed/organized information of skills development of municipalities is submitted to DWS (list of no. of staff, attended training, mentor resources, training providers, manuals, workshops and yards, subsidies/grants, good practices, etc.) 1-2. Analyzed/organized information of NRW and needs of municipalities is submitted to DWS. 1-3. Benchmarked matrix of Japan and South Africa on water services is submitted to DWS (comparative feature strength/weakness, methodology, etc.) 1-4. Information sharing occasions are provided.
Means of Verification	
1-1. Baseline Survey Report 1-2. Benchmark Report	1-1&2. Baseline survey report and training curriculum 1-3. Benchmark report 1-4. Seminar report and presentations
Output 2	
IBTC's training management capacity in water supply sector is improved.	IBTC's NRW Training capacity is improved.
Objectively Verifiable Indicators	
2-1. IBTC organization/individual performance / capacity 2-2. Progress of Organizational setting update 2-3. Record of SOPs (actual revisions) 2-4. Progress of update of IBTC Strategic	2-1. Appropriate organizational structure for the NRW Training is established at IBTC. 2-2. No. of revision of Standard Operation Procedures (SOP) of the NRW Training is increased. 2-3. No. of revision of the NRW Training

Before Revision	After Revision
Business Model	Business Plan is increased.
Means of Verification	
2-1. Capacity Assessment Report 2-2. Proposed Organogram of IBTC 2-3. Standard Operating Procedure (SOP) 2-4. Draft revised IBTC Strategic Business Model	2-1. Capacity assessment report and/or organogram of IBTC 2-2. Standard Operation Procedures (SOP) of the NRW Training 2-3. The NRW Training Business Plan
Output 3	
Trainings on Non-Revenue Water (NRW) are conducted at IBTC.	The NRW Training is conducted with training improvement cycle.
Objectively Verifiable Indicators	
3-1. Actual trainings on NRW Skills Programme (No. of trainings, trainees) 3-2. Appropriateness of NRW Skills Programme (trainees' evaluation) 3-3 Feed back / utilization of skills trained at IBTC into the water services at sampled Municipality(ies)	3-1. No. of Facilitator Technical Meeting is increased. 3-2. No. of NRW Training is increased. 3-3. Trainee's satisfaction with the NRW Training is increased. 3-4. No. of feedback/utilization of skills trained into water services at municipalities is increased.
Means of Verification	
3-1. IBTC Annual Report 3-2. Training evaluation questionnaire to trainees 3-3. Survey report in sampled Municipality(ies)	3-1&2. IBTC annual report 3-3. Training evaluation questionnaire to trainees (training management/contents and individual achievement) 3-4. Survey of participating municipalities in sampled municipalities
Activity for Output-1	
1-1. Conduct baseline survey on Skills Development in water supply sector (programme, human resources, materials and management). 1-2. Compile and analyze training resources, good practices, lessons learnt in water supply sector. 1-3. Share training resources, good practices, lessons learnt with SALGA and Municipalities. 1-4. Incorporate good practices into training materials. 1-5. Benchmark water supply services and its skills development in Japan. 1-6. Hold a seminar on the result of the baseline survey and benchmark.	1-1. Conduct baseline survey on skills development and NRW in municipalities. 1-2. Compile and analyze skills development and NRW in municipalities. 1-3. Review needs of skills development on NRW, existing qualifications, roles and responsibility of DWS/IBTC. 1-4. Benchmark water supply services and its skills development in Japan. 1-5. Hold a seminar and share on the results of the baseline survey and benchmark with stakeholders.
Activity for Output-2	
2-1. Review roles and responsibility of IBTC for skills development of Municipalities in water supply sector based on the results of Output-1. 2-2. Draft proposed organogram of IBTC including NRW Training Section. 2-3. Prepare Terms of Reference for	2-1. Prepare the NRW Training Business Plan. 2-2. Prepare and take procedures for funding the NRW Training. 2-3. Prepare Terms of Reference for the NRW Training. 2-4. Prepare Standard Operation

Before Revision	After Revision
Training Sections related to skills development in water supply sector. 2-4. Prepare draft Standard Operating Procedures (SOP) of skills development provision. 2-5. Revise the SOP through the activities of Output-3. 2-6. Draft revised IBTC Strategic Business Model. 2-7. Conduct capacity assessment of IBTC's organization, individuals and facilitators developed.	Procedures (SOP) of the NRW Training. 2-5. Revise the SOP of the NRW Training through the activities of Output-3. 2-6. Revise the NRW Training Business Plan through the activities of Output-3. 2-7. Conduct capacity assessment of IBTC.
Activity for Output-3	
3-1. Review situation/needs of skills development on NRW from the results of baseline survey of Activity 1-1. 3-2. Select registered Unit Standards related to NRW from existing qualifications of SAQA. 3-3. Design NRW Skills Programme consisting of the selected Unit Standards and supplementary items if any. 3-4. Select facilitators (qualified/skilled artisans on water reticulation or equivalent) for NRW Skills Programme from Municipalities and IBTC (DWS). 3-5. Schedule Training of Trainer (facilitator) (TOT), Assessors and Moderators for NRW Skills Programme at IBTC. 3-6. Develop training yard for NRW Skills Programme at IBTC. 3-7. Procure equipment, instruments/tools and materials for NRW Skills Programme at IBTC. 3-8. Develop training / learning materials for NRW Skills Programme at IBTC. 3-9. Conduct TOT by both JICA Experts and South African Facilitators for NRW Skills Programme at IBTC. 3-10. Develop NRW Skills Programme as an accredited programme by SETA. a) Apply for registration of facilitators of NRW Skills Programme as assessor/moderator/facilitator from SETA. b) Prepare Quality Management System of NRW Skills Programme at IBTC. c) Apply for accreditation of NRW Skills Programme to SETA. 3-11. Prepare Annual Plan of NRW Skills Programme including budget plan at IBTC. 3-12. Recruit participants from Municipalities through SALGA for NRW Skills	3-1. Design the NRW Training based on the results of Output-1. 3-2. Secure the site(s) for workplace of the NRW Training. 3-3. Secure facilitators (experienced/skilled personnel on water reticulation or equivalent) for the NRW Training from DWS/IBTC and stakeholders. 3-4. Develop training yard for the NRW Training at IBTC. 3-5. Procure equipment, instruments/tools and materials for the NRW Training. 3-6. Develop teaching/learning materials for the NRW Training with incorporating good practices from baseline survey into the materials if any. 3-7. Prepare and conduct Facilitator Technical Meetings by both facilitators and JICA Experts for the NRW Training. 3-8. Prepare for conducting the NRW Training (schedule, budget plan, applying for releasing fund, recruiting participants and etc.). 3-9. Conduct the NRW Training by facilitators with support from JICA Experts. 3-10. Monitor the NRW Training and feed the results back under training improvement cycle. 3-11. Verify effects of the NRW Training in sampled municipalities.

Before Revision	After Revision
Programme at IBTC. 3-13. Conduct trainings by South African Facilitators for NRW Skills Programme at IBTC. 3-14. Monitor implementation of NRW Skills Programme and feed the results back into Annual Plan and Programme. 3-15. Verify effects of NRW Skills Programme and provide necessary support by JICA Experts and IBTC in sampled Municipality(ies) if any.	
Input (South African side)	
1. Project Personnel 5) Training Manager, IBTC 6) Quality Assurer, IBTC 7) NRW Training Personnel, IBTC 8) Municipal Coordinator (Technical), SALGA 9) Municipal Coordinator (HRD), SALGA 10) TOT Facilitator 11) Candidate Facilitator 12) Other project personnel mutually agreed upon as necessary	**1. Project Personnel** 5) Co-Project Manager (PM): Director, Water Use Efficiency 6) Training Manager, IBTC 7) Quality Assurer, IBTC 8) Dedicated NRW Training personnel, IBTC 9) Municipal Coordinator (Technical), SALGA 10) Municipal Coordinator (HRD), SALGA 11) Facilitator 12) Candidate Facilitator 13) Other personnel mutually agreed upon as necessary
Input (Japanese side)	
1. JICA Experts 3) Skills Programme Planning / Organization Coordination **3. Equipment, instruments, tools and materials** 1) Portable ultrasonic water flow meter	**1. JICA Experts** 3) Training Planning / Organization Coordination **3. Equipment, instruments, tools and materials** 1) Bulk water flow meter
Note	
Indicators will be discussed and finalized based on the baseline survey at the beginning of the Project and be agreed at Joint Coordinating Committee (JCC).	Indicators were discussed and finalized based on the baseline survey and were agreed at Joint Coordinating Committee (JCC). As an all-inclusive term, "Facilitator" in the Project may act as facilitator, trainer, mentor, coach and supervisor.

END

Appendix

Appendix 1: Programme/Agenda
Appendix 2: Attendance Register
Appendix 3: Presentation: Results of Project Monitoring
Appendix 4: Project Monitoring Sheet (Draft)
Appendix 5: Presentation: The NRW Training based on the result of Baseline Survey

Appendix 6: Explanatory Material: Revision of PDM and PO
Appendix 7: Revision of PDM (PDM_1 to PDM_2) and PO (PO_1 to PO_2)

Appendix 1

water & sanitation
Department: Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Japan International Cooperation Agency JICA

SALGA

National Water Resource Infrastructure Branch (NWRI)
Infrastructure Branch Training Centre (IBTC)
assisted by
Japan International Cooperation Agency (JICA)

PROJECT FOR STRENGTHENING THE TRAINING CAPACITY OF IBTC ON NON-REVENUE WATER

PROGRAMME/AGENDA FOR 2ND JCC MEETING

Co-Chaired by Mr. Alcious Chaminuka and Mr. Tomohiro Seki
Venue: IBTC, DWS, Pretoria
Date: 10:00, Wednesday, 25th July 2018

10:00 - 10:05 Introduction of Participants

10:05 - 10:15 Remarks by DWS: Mr. Alcious Chaminuka (Chief Director, Engineering Services, National Water Research Infrastructure Branch)

10:15 - 10:25 Remarks by JICA South Africa Office: Mr. Tomohiro Seki (Chief Representative) *Actually moved to Closing Remarks

10:25 - 10:55 Results of Project Monitoring: Mr. Akinori Miyoshi (Chief Advisor, JICA Experts) and Mr. Thabo Masike, Co-Project Manager / Technical (Acting Director, Water Use Efficiency)

10:55 - 11:25 The NRW Training based on result of Baseline Survey: Mr. Thabo Masike, Co-Project Manager / Technical (Acting Director, Water Use Efficiency) and Mr. Nobutaka Maruyama (JICA Expert)

11:25 - 11:55 Revision of Project Design Matrix (PDM) and Plan of Operations (PO): Mr. Akinori Miyoshi (Chief Advisor, JICA Experts)

11:55 - 12:10 Observation and Recommendations by JICA Mission: Mr. Yoshiki Omura (Senior Advisor, JICA Monitoring Survey Mission)

12:10 - 12:40 Questions, Answers and Discussion

12:40 - 12:50 Approval of Draft Project Monitoring Sheets The NRW Training, and Revision of PDM&PO

12:50 - 13:00 Closing Remarks (TBD) *Actually done by JICA South Africa Office: Mr. Tomohiro Seki (Chief Representative)

	NAME	ORGANIZATION	EMAIL	Telephone	Signature
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Appendix 3

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

SALGA
Inspiring service delivery

JICA

Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water

Results of Project Monitoring (January - July 2018)

Presentation Outline

- Project Monitoring Sheets
- Progress of Inputs
- Progress of Activities
- Challenges and Wayforward
- Modification of "Plan of Operation"

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

Appendix 2

SALGA
Inspiring service delivery

JICA

ATTENDANCE REGISTER:

Date: 25 July 2018
Venue: Boardroom 330, Ndinaye Building
Time: 10h15

NAME	ORGANISATION	E-MAIL ADDRESS	TELEPHONE	SIGNATURE
[redacted]				

Project Monitoring Sheets

Contents of Project Monitoring Sheets includes the following:

I. Summary

1. Progress

1-1 Progress of Inputs
1-2 Progress of Activities
1-3 Achievement of Outputs
1-4 Achievement of Project Purpose
1-5 Changes of Risks and Actions for Mitigation
1-6 Other remarkable/considerable issues related/affect to the Project

Project Monitoring Sheets

2. Delay of Work Schedule and/or Problems (Challenges and Wayforward)

2-1 Delay of the Project (Phase-1)
2-2 The NRW Training based on the result of Baseline Survey
2-3 Institutional Collaboration with Stakeholders to conduct the NRW Training
2-4 Assignment of Engineering/Technical Personnel for the NRW Training
2-5 Recent Absence of SALGA and Reactivation of Collaboration
2-6 Project Management

Project Monitoring Sheets

3. Revision of Project Design Matrix and Plan of Operations

3-1 Project Design Matrix (PDM)
3-2 Plan of Operations (PO)

4. Preparation by the South African side after completion of the Project

II. Project Monitoring Sheet I & II

Progress of Inputs (SA)

- **Project Personnel**

All project members including Chairperson, Project Director, Project Manager, and members and associates have been involved in the Project.
However, project members for engineering/technical aspect at IBTC have not yet been assigned adequately, and member from SALGA has been involved less because of personnel transfer.

- **Operational Requirements (Land, Building and Facilities)**

Office spaces and necessary facilities at the IBTC and Water Use Efficiency's office of the DWS have been provided to the Japanese side. WiFi and network have been not available due to DWS's security restriction.

Progress of Inputs (SA)

- **Local Costs**

Administrative costs in IBTC as well as operational costs for official trips of project members, communication and etc. have been provided. However, since April 2018, project members from DWS have faced a challenge in processing official trips.

Progress of Inputs (JPN)

- **JICA Experts**

JICA Expert Team consisting of a Chief Advisor and members for seven areas of expertise were assigned to work in South Africa between January 2018 and July 2018.

- **Equipment**

No progress because preliminary design have been suspended due to delay in baseline survey and developing the NRW Training.

- **Facilities**

Based on provisional training programme, the preliminary design including specifications and quantity survey was done tentatively together with the Directorate of Engineering Services of NWRI of DWS.

Progress of Inputs (JPN)

However, finalization of design and procurement process have been suspended due to delay in baseline survey and developing the NRW Training.

- **Training in Japan**

The first training in Japan was conducted between 16th and 27th of April 2018, for nine delegation officials at the level of management from DWS, SALGA, LGSETA, three Metro Municipalities (Tshwane, Cape Town and Ethekwini) and the Tshwane University of Technology. The officials prepared benchmark report.

Progress of Activities

Output-1: Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities.

- **Activity 1-1: Conduct baseline survey on Skills Development in water supply sector (programme, human resources, materials and management).**

- Progress: 95%, Behind: 6.0 months
- The Project visited/ interviewed 44 Municipalities and 5 Water Boards, then collected answers from 24 and 2 each.
- Interview results supplement answers to questionnaire.
- The Project utilized existing NRW-related reports and information obtained at Water Loss Conference in Cape Town in May 2018.
- Questionnaire survey to 108 Municipalities to be followed up by DWS on behalf of SALGA was not implemented.
- Although SALGA suggested and prepared simple questionnaire to 108 municipalities, DWS requested to suspend it to avoid

Progress of Activities

confusion to municipalities. The Project Team concluded to finalize the survey by using the collected questionnaires as sample.

- **Activity 1-2: Conduct baseline survey on Skills Development in water supply sector (programme, human resources, materials and management).**
  - Progress: 95%, Behind: 4.0 months
  - Baseline Survey report was drafted based on results of baseline survey.
  - To be completed soon.
- **Activity 1-5: Benchmark water supply services and its skills development in Japan.**
  - Progress: 50%, Behind: 0.0 months
  - The first training in Japan (management course) was conducted in April 2018.

Progress of Activities

Output-2: IBTC's training management capacity in water supply sector is improved.

- **Activity 2-1: Review roles and responsibility of IBTC for skills development of Municipalities in water supply sector based on the results of Output-1.**
  - Progress: 95%, Behind: 5.0 months
  - The Project Team had a series of discussions together with Activity 3-3, and shared a common view.
- **Activity 2-2: Draft proposed organogram of IBTC including NRW Training Section.**
  - Progress: 50%, Behind: 3.0 months
  - The Project Team had a series of discussions together with Activity 3-3, and shared a common view.
  - Developing new organizational structure of DWS as well as IBTC is ongoing.
  - The NRW Training Business Plan is being discussed and prepared.

Progress of Activities

- The Project confirmed possibility of collaboration with LGSETA as a funding partner for the NRW Training.
- The Project Team visited several public/private training providers for training management information (Eskom, SAPS, SAAF, NECSA, Water Academy, etc.)
- Ensuring facilitators, workplace training and funding to all necessary expenses is of importance.
- The Project prepares proposal to funding agencies such as LGSETA to establish funding model.

Progress of Activities

Output-3: Trainings on Non-Revenue Water (NRW) are conducted at IBTC.

- **Activity 3-1: Review situation/needs of skills development on NRW from the results of baseline survey of Activity 1-1.**
  - Progress: 95%, Behind: 5.0 months
  - The Project Team had a series of discussions together with Activity 1-1 and 1-2, and shared a common view.
  - The Project referred to existing qualifications, unit standards, newly-developed qualification, private training providers, existing NRW-related reports and information obtained at Water Loss Conference in Cape Town in May 2018.

Progress of Activities

- **Activity 3-2: Select registered Unit Standards related to NRW from existing qualifications of SAQA.**
- **Activity 3-3 Design NRW Skills Programme consisting of the selected Unit Standards and supplementary items if any.**

- Progress: 95%, Behind: 5.0 months
- The Project Team concluded to make our training not accreditation/qualification-oriented but problem-solving-oriented with immediate impacts for municipalities.
- The Project designs the NRW Training by referring to and utilizing existing qualification / training model, for example, Unit Standard (US254118: Apply water loss control principles) and newly-developed qualification (Water Reticulation Practitioner)
- Legacy qualifications based on Unit Standards are no longer provided because of transition to QCTO in quality assurance. Not only theoretical and practical training, but the site for workplace training should be included in the NRW Training.

Baseline Survey (JB Marks LM)

Discussion of Baseline Survey Analysis

Task Team Meeting

Visiting Tshwane Training Centre

The 1st Training in Japan

Course Objective

To benchmark the Japanese cases in framework of water services administration, human resources development, training provision and water supply services by authorities, particularly Non-Revenue Water reduction.

Module Outputs

- To understand comprehensively the framework of water supply administration in Japan.
- To understand human resources development, skills development, training facilities and its operation, issues and challenges such as inter-municipality cooperation, mobilization of private resources, staff aging, skill transfer, knowledge management and training quality assurance in water supply sector of Japan.
- To understand efforts against Non-Revenue Water reduction in water supply sector of Japan.

The 1st Training in Japan

Recommendations from the Training

- NRW management training should as the start, focus on developing practical skills to tackle water losses and NRW in the municipal environment
- IBTC Training must be based on problem solving on job training
- The DWS together with municipalities and other players must pool financial resources to support the IBTC training facility and ensure it offers effective training programs

The 1st Training in Japan

- South Africa municipal water sector there is a need to establish an institution like Japan Water Works Association (JWWA) which can serve as a voluntary organization that encourages municipalities to maintain at certain level of training for its staff involved with water supply and services
- There is also a need to ring fence water budgets so that greater consideration can be given to areas of non-revenue water management such as training, leak detection, preventative maintenance and general asset management.

Courtesy Call on JICA

Some LMs (Joint) in Western Cape

Training Faclity

Training Facility

Challenges and Wayforward

1. **Delay of the Project (Phase-1)**
2. **The NRW Training based on the result of Baseline Survey**
3. **Institutional Collaboration with Stakeholders to conduct the NRW Training**
4. **Assignment of Engineering/Technical Personnel for the NRW Training**
5. **Recent Absence of SALGA and Reactivation of Collaboration**
6. **Project Management**

Challenges and Wayforward

1. Delay of the Project (Phase-1)

Situation

The Project (Phase 1) is behind schedule for maximum six months due to:

- Baseline survey (Activity 1-1) and its analysis (Activity 1-2) have delayed because of unforeseen inactive coordination with municipalities and limited answers from municipalities.
- Additionally, the Project Team needed to review/benchmark the proposed NRW Training with transition the quality assurance systems of occupational qualifications as well as new qualification development on water reticulation.

Challenges and Wayforward

1. Delay of the Project (Phase-1)

- Thus, the Project Team spent time for discussion about reviewing roles of IBTC (Activity 2-1), developing Business Plan (Activity 2-2) and designing the NRW Training (Activity 3-1 to 3-3) with ensuring informed consent.

So, the Project Team has put hold on other activities scheduled in the Phase 1 including training yard construction and equipment procurement.

Challenges and Wayforward

1. Delay of the Project (Phase-1)

Action to be taken and Roles

The Project extends the Phase 1 for nine months in consideration of delay and updated schedule of the Project activities. However, the Project shortens the period by revising project activities related to accreditation process to be omitted and also by streamlining some activities such as facilitator training, so the Project keeps the total period of the Project unchanged (The Project will be over in the middle of August 2020).

Based on the request from South African side, the Project Team requests the JCC members to approve to extend the Phase 1 through revision of PDM and PO for the above action in the JCC meeting.

Challenges and Wayforward

2. The NRW Training based on the result of Baseline Survey

Situation

Although the Project was not able to complete questionnaire collection as originally planned, based on the result of baseline survey including questionnaire, existing reports, knowledge, observation of stakeholders on NRW and training in South Africa, and through a series of discussions, the Project Team concluded to make our training namely "the NRW Training" not as accredited qualification-oriented but as problem solving-oriented with immediate impacts for municipalities.

Challenges and Wayforward

2. The NRW Training based on the result of Baseline Survey

Also, the Project develops the NRW Training in consideration of existing qualification development model, similarities and dissimilarities with existing qualifications and constituent modules by quality assurance bodies for future accreditation. The NRW Training is composed of theory, practice at IBTC and workplace at municipalities/water boards/metros and others if any for 1.5 months cumulatively.

Challenges and Wayforward

2. The NRW Training based on the result of Baseline Survey

Action to be taken and Roles

This change of a way of developing the NRW training affects overall goal, project purpose, outputs, project activities and schedule, so concepts and contents of the NRW Training based on result of baseline survey as well as necessary revision of PDM and PO need to be presented to JCC for approval.

The Project Team requests the JCC members to approve concepts and contents of the NRW Training based on result of baseline survey as well as necessary revision of PDM and PO in the JCC meeting.

Challenges and Wayforward

3. Institutional Collaboration with Stakeholders to conduct the NRW Training (Facilitators and Workplaces)

Situation

DWS/IBTC is short of practically-experienced/skilled personnel as facilitator-to-be of the NRW Training and is unlikely to provide the sites for workplace of the NRW Training, so the Project relies on stakeholders such as municipalities, DWS's entities like Water Boards to ensure facilitators and workplace as key factors of success in the NRW Training.

Challenges and Wayforward

3. Institutional Collaboration with Stakeholders to conduct the NRW Training (Facilitators and Workplaces)

Action to be taken and Roles

The Project communicates with and encourages these stakeholders for institutional collaboration to ensure facilitators and workplace of the NRW Training by concluding memorandums of understanding between DWS and stakeholders. Also, in order to set up the site for workplace training, the Project makes the NRW Training coupled with existing DWS's Schedule 6B funded municipalities suffering from challenges.

The Project Team request DWS to take leadership in the above actions with necessary support from SALGA and JICA Experts.

Challenges and Wayforward

4. Assignment of Engineering/Technical Personnel for the NRW Training

Situation

In view of the basic concept of JICA's Technical Cooperation Project, "To ensure sustainability after the Project and capacity development in the process of any activities, the JICA's Technical Cooperation Project should be implemented by the South African initiative with support from the Japanese side", the Japanese side has requested engineering/technical personnel to be more involved regularly in the project activities at IBTC for day-to-day technical transfer and communication with JICA Experts during the whole period of project implementation.

Challenges and Wayforward

4. Assignment of Engineering/Technical Personnel for the NRW Training

Now that the overall concept of the NRW Training was settled and the Project advances to more practical stage, engineering/technical personnel and other necessary personnel for the NRW Training are required to be assigned to develop the NRW Training including teaching/learning materials, training yard and equipment as well as conducting the NRW Training actually.

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Challenges and Wayforward

4. Assignment of Engineering/Technical Personnel for the NRW Training

Action to be taken and Roles

Currently, DWS is going through procedure for assigning dedicated engineering/technical personnel to IBTC as project member in charge of the NRW Training. Other necessary personnel for implementing the NRW Training as below mentioned such as operation & maintenance of training yard and equipment from procurement stage, should also be assigned certainly.

Challenges and Wayforward

4. Assignment of Engineering/Technical Personnel for the NRW Training

Action to be taken and Roles

- Training Yard Management
- Equipment Management
- Class Room Management
- Logistic Management (Accommodation, Transportation and Meals)
- Teaching/Learning Materials Management
- Coordination of Facilitator Technical Meeting
- Coordination of Assessor and Moderator (if necessary
- Admission Office
- Cleaning of Training Yard and Workshops)
- Cleaning of Class Rooms
- Cleaning of Accommodation and dining facilities
- Security Guard
- Overall Management

Challenges and Wayforward

4. Assignment of Engineering/Technical Personnel for the NRW Training

Action to be taken and Roles

DWS assigns dedicated engineering/technical personnel to IBTC as project member for the NRW Training by the end of August 2018 as well as nominate and assign other necessary personnel for the NRW Training appropriately and on a timely basis.

The Project Team requests DWS to commit assignment of engineering/technical personnel for the NRW Training.

Challenges and Wayforward

5. Recent Absence of SALGA and Reactivation of Collaboration (a Pre-condition for the Project)

Situation

The Project have suffered from lack of arrangement and coordination with municipalities because of little observance by SALGA in spite of taking-over by DWS after the previous project monitoring.

Although the Project Team observed good performance of SALGA's regional staff, but SALGA headquarters have been less involved in the Project due to personnel transfer of a key counterpart, nonexistence of successor, limited personnel resources in the section in charge.

Challenges and Wayforward

5. Recent Absence of SALGA and Reactivation of Collaboration (A Pre-condition for the Project)

Action to be taken and Roles

The Project encourages SALGA to nominate successor immediately and reactivate collaboration among the JCC and Project members.

The Project Team requests DWS to take responsibility of involving SALGA for the above action with necessary support from the Japanese side, then DWS exchanges the MoU with SALGA to clarify its roles and ensure collaboration during the period of the Project.

Challenges and Wayforward

6. Project Management

Situation

The Project Team had meetings and communications including emails among task team and working group members, but keeping the minutes, schedule and progress management have been not necessarily well functional effectively. Also, sort of communication gap among the Project Team was observed when baseline survey didn't proceed smoothly as well as when the Project Team discussed about the direction of training at which the Project aims.

Challenges and Wayforward

6. Project Management

Action to be taken and Roles

Now that the overall concept of the NRW Training was settled and the Project advances to more practical stage, project management need to be improved.

As premises for the basic concept of JICA's Technical Cooperation Project, the both South African and Japanese sides review roles and responsibility of the Project Team members and the JICA Experts, clarifies task team and working groups, and improves schedule/time management, communication and information sharing including the minutes' sharing process.

The Project Team brings up this issues as an agenda of the JCC meeting to improve the project management.

Risk and others

Changes of Risks and Actions for Mitigation

None.

Other matters to be considered

(1) Funding Sources of the NRW Training

Provision of additional funding for the Project needs to be sought to sustain the implementation thereof. Appropriate partnerships with sector stakeholders needs to be forged. DWS started the process of engaging relevant stakeholders.

(2) Procedural Challenge of Staff Travelling

DWS seems to face a procedural challenge of staff travelling. This may affect smooth implementation of the Project activities.

Risk and others

(3) New Organizational Structure of IBTC

Developing new organizational structure of IBTC is ongoing. DWS will seek to provide additional capacity to IBTC during upscaling of project activities to ensure smooth implementation of the Project.

(4) Transition of Occupational Qualifications from SETA to QCTO as Quality Assurer

Legacy qualifications based Unit Standards will no longer be provided because of transition to QCTO in quality assurance. The Project considers this particularly by including workplace training in addition to theoretical and practical training in developing the NRW Training to align with the proposed QCTO training model.

Risk and others

(5) Newly-developed Qualification "Water Reticulation Practitioner"

New qualification related to water supply namely "Water Reticulation Practitioner" was developed under the Framework Programme for Research, Education & Training in the Water Sector (FETWater). Although training approach differs between them, the Project designs the NRW Training by referring to and utilizing this new qualification, and develops synergistic relationship.

Revision of PDM and PO

The current PDM was prepared in the beginning of the Project. And now that the Project designed concepts and contents of the NRW Training based on the result of baseline survey including observation of other related information and events which affect the Project, it is necessary to set PDM in order based on this.

The below will be reflected to PDM and PO.

- The Project is targeting immediate impact for NRW problem solution of municipalities through the NRW Training at IBTC and workplaces.
- The Project does not make the Project qualification-oriented with accreditation.
- Indicators will be modified based on status quo obtained in the baseline survey.
- The TOT process is replaced by interactive Facilitator Technical Meetings for period shortening (Facilitators will join the second training in Japan.).

Revision of PDM and PO

And also, for better understanding about the Project implementation.

- To simplify expressions and sentences straightforward.
- To coordinate and eliminate duplicated activities across Outputs.

The Project Team kindly requests
JCC members to approve
the progress of
the Project Monitoring Sheets.

Thank You.

THE END

To Chief Representative of JICA South Africa Office

PROJECT MONITORING SHEETS (DRAFT)

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water

Version of the Sheet: Ver. 2 (Term covered: January, 2018 - July, 2018)

Name: Akinori Miyoshi
Title: Chief Advisor
Submission Date: 25 July 2018

Contents

I. Summary

1 Progress

1-1 Progress of Inputs

[The South African Side]

Project Personnel

All project members including Chairperson, Project Director, Project Manager, and members and associates have been involved in the Project (refer to Table 1).

However, project members for engineering/technical aspect at IBTC have not yet been assigned adequately, and member from SALGA has been involved less because of personnel transfer.

Table 1 List of Project Members

Position in the Project	Name
Chairperson	Chief Director, Global Cooperation, IWS, DWS Ms. Nchedi Moripe
Co-Chairperson	Chief Director, Engineering Services, NWRI, DWS Mr. Al Chaminuka
Project Director	Director, Engineering Services, NWRI, DWS Mr. Vincent Monene
Co-Project Director	SALGA Mr. William Moraka
Project Manager (Operational) / Chairperson	Centre Manager, IBTC, DWS Ms. Rosa Mfomadi Rahube
Co-Project Manager (Technical) / Chairperson	Director, Water Use Efficiency, P&I, DWS Mr. Thabo Masike
Member	Director, ODA, IWS, DWS Mr. Albert Mmbidi
Member	Training Manager, IBTC, DWS Ms. Kgoputso Sekgoilane
Member	Quality Assurer, IBTC, DWS Ms. Makola Lerato
Member	Water Use Efficiency, P&I, DWS Ms. Moloko Raletjena
Member	Water Use Efficiency, P&I, DWS Mr. Padi Andries
Member	Water Sector Institutional Development, P&I, DWS Ms. Margaret Matlala
Member	Director, Operational Support, PMU, DWS Ms. Kentse Mathiba
Member	Water Sector Skill Development & Special Project, PMU, DWS Mr. Lekubu Lesego
Member	HRD, DWS Mr. Matome Makwaeba
Secretary	Official Development Assistance, IWS, DWS Ms. Mtsweni Zanu

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Land, Building and Facilities

Office spaces and necessary facilities at the Infrastructure Branch Training Centre (IBTC) and Water Use Efficiency's office of the Department of Water and Sanitation (DWS) have been provided to the Japanese side. WiFi and network have been not available due to DWS's security restriction.

Local Costs

Administrative costs in IBTC as well as operational costs for official trips of project members, communication and etc. have been provided. However, since April 2018, project members from some sections of DWS have faced a challenge in processing official trips.

[The Japanese Side]

JICA Experts

JICA Expert Team consisting of a Chief Advisor and members for seven areas of expertise were assigned to work in South Africa between January 2018 and July 2018 (refer to Table 2).

Table 2 List of JICA Experts

Position in the Project	Name	Month in SA
Chief Advisor / NRW Management	Mr. Akinori MIYOSHI	4.80
Deputy Chief Advisor / NRW Management	Mr. Taketoshi FUJIYAMA	2.77
Skills Programme Planning / Organization Coordination	Mr. Kenichiro SUGIYA	6.00
Water Leakage Detection	Mr. Hiroki NIIMURA	1.00
Water Distribution Control / Commercial Loss	Mr. Hiroyuki MORITA	0.97
Training Yard Design and Supervision	Mr. Masuji IDE	3.53
Procurement / Administrative Coordination	Mr. Toshinobu KASUYA	2.77
Training Management / Human Resource Development	Mr. Nobutaka MARUYAMA	Long-Term
Total		22.99

Equipment

No progress because preliminary design have been put on hold due to delay in baseline survey and developing the NRW Training.

Facilities

Based on provisional training programme, the preliminary design including specifications and quantity survey was done tentatively together with the Directorate of Engineering Services of National Water Resources Infrastructure (NWRI) of DWS.

However, finalization of design and procurement process have been put on hold due to delay in baseline survey and developing the NRW Training.

Training of the South African Project Members

The first training in Japan was conducted between 16th and 27th of April 2018, for nine delegation officials at the level of management from DWS, South African Local Government Association (SALGA), Local Government Sector Education and Training Authority (LGSETA), three Metro

1-2 Progress of Activities

[Activities for Output-1: Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities.]

Table 3 Progress of Activities for Output-1

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
1-1	Conduct baseline survey on Skills Development in water supply sector (programme, human resources, materials and management).	Progress: 35% Behind: 1.0 months - The Project selected 44 out of 152 Municipalities as WSAs and 7 Water Boards to be visited / interviewed through baseline survey (51 targets). - The Project Team has visited/ interviewed 36 municipalities and 5 water boards with questionnaire. - The Project Team received answers from 9 targets. - Questionnaire survey by email to other remaining 108 municipalities has been little progressed. - The Project Team also utilizes existing surveys and reports for NRW-related information.	- The Project Team received answers from 9 targets only, and questionnaire survey by email to other remaining 108 municipalities has been little progressed by SALGA.	Progress: 95% Behind: 6.0 months - The Project visited/ interviewed 44 Municipalities and 5 Water Boards, then collected answers from 24 and 2 each. - Interview results supplement answers to questionnaire. - The Project utilized existing NRW-related reports and information obtained at Water Loss Conference in Cape Town in May 2018. - Questionnaire survey to 108 Municipalities to be followed up by DWS on behalf of SALGA was not implemented.	- Although SALGA suggested and prepared simple questionnaire to 108 municipalities, DWS requested to suspend it to avoid confusion to municipalities. The Project Team concluded to finalize the survey by using the collected questionnaires as sample.
1-2	Compile and analyze training resources, good practices, lessons learnt in water supply sector.	Progress: 0% Behind: 0.0 months	None	Progress: 95% Behind: 4.0 months - Baseline Survey report was drafted based on results of baseline survey.	- To be finalized soon.
1-3	Share training resources, good practices, lessons learnt with SALGA and Municipalities.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 4.0 months	- Due to delay in Activity 1-1 and 1-2, this Activity cannot be completed in the remaining period of the Phase 1.
1-4	Incorporate good practices	Progress: 0%	None	Progress: 0%	- Due to delay in Activity 1-1

PM Form 3-1 Monitoring Sheet Summary

Municipalities (Tshwane, Cape Town and Ethekwini) and the Tshwane University of Technology. The officials prepared benchmark report. Refer to the Annex-1.

PM Form 3-1 Monitoring Sheet Summary

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
				ongoing. - The NRW Training Business Plan is being discussed and prepared. - The Project confirmed possibility of collaboration with LGSETA as a funding partner for the NRW Training. - The Project Team visited several public/private training providers for training management information (Eskom, SAPS, SAAF, NECSA, Water Academy, etc/)	
2-3	Prepare Terms of Reference for Training Sections related to skills development in water supply sector.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 5.0 months	- Due to delay in Activity 2-1 and 2-2, this Activity cannot be completed in the remaining period of the Phase 1.
2-4	Prepare draft Standard Operating Procedures (SOP) of skills development provision.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 5.0 months	- Due to delay in Activity 2-1 and 2-2, this Activity cannot be completed in the remaining period of the Phase 1.
2-5	Revise the SOP through the activities of Output-3.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
2-6	Draft revised IBTC Strategic Business Model.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
2-7	Conduct capacity assessment of IBTC's organization, individuals and facilitators developed.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None

PM Form 3-1 Monitoring Sheet Summary

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
	into training materials.	Behind: 0.0 months		Behind: 3.0 months	and 1-2, this Activity cannot be completed in the remaining period of the Phase 1.
1-5	Benchmark water supply services and its skills development in Japan.	Progress: 0% Behind: 0.0 months	None	Progress: 50% Behind: 0.0 months - The first training in Japan (management course) was conducted in April 2018.	None
1-6	Hold a seminar on the result of the baseline survey and benchmark.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	- Due to delay in Activity 1-1 and 1-2, this Activity cannot be completed in the remaining period of the Phase 1.

[Activities for Output-2: IBTC's training management capacity in water supply sector is improved.]

Table 4 Progress of Activities for Output-2

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
2-1	Review roles and responsibility of IBTC for skills development of Municipalities in water supply sector based on the results of Output-1.	Progress: 0% Behind: 0.0 months	None	Progress: 95% Behind: 5.0 months - The Project Team had a series of discussions together with Activity 3-3, and shared a common view.	None
2-2	Draft proposed organogram of IBTC including NRW Training Section.	Progress: 0% Behind: 0.0 months	None	Progress: 50% Behind: 3.0 months - The Project Team had a series of discussions together with Activity 3-3, and shared a common view. - Developing new organizational structure of DWS as well as IBTC is	- Ensuring facilitators, workplace training and funding to all necessary expenses is of importance. - The Project prepares proposal to funding agencies such as LGSETA to establish funding model.

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
3-3	Design NRW Skills Programme consisting of the selected Unit Standards and supplementary items if any.	Progress: 0% Behind: 0.0 months	None	Progress: 95% Behind: 5.0 months - The Project Team concluded to make our training not qualification-oriented with accreditation but problem-solving-oriented with immediate impacts for municipalities. - The Project designs the NRW Training by referring to and utilizing existing qualification / training model, for example, Unit Standard (US254118: Apply water loss control principles) and newly-developed qualification (Water Reticulation Practitioner)	- Legacy qualifications based on Unit Standards are no longer provided because of transition to QCTO in quality assurance. Not only theoretical and practical training, but the site for workplace training should be included in the NRW Training.
3-4	Select facilitators (qualified/skilled artisans on water reticulation or equivalent) for NRW Skills Programme from Municipalities and IBTC (DWS).	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 5.0 months	- Due to delay in Activity 3-1 to 3-3, this Activity has been suspended and cannot be completed as scheduled in the remaining period of the Phase 1.
3-5	Schedule Training of Trainer (facilitator) (TOT), Assessors and Moderators for NRW Skills Programme at IBTC.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 5.0 months	- Due to delay in Activity 3-1 to 3-3, this Activity has been suspended and cannot be completed as scheduled in the remaining period of the Phase 1.
3-6	Develop training yard for NRW Skills Programme at IBTC.	Progress: 10% Delay: 0.0 month - Ahead of schedule, preliminary designing (facility, specifications, quantity	None	Progress: 35% Behind: 6.0 months - Training yard designing (facility, specifications and quantity survey) was done	- Due to delay in Activity 3-1 to 3-3, this Activity has been suspended and cannot be completed as scheduled in the remaining period of the

[Activities for Output-3: Trainings on Non-Revenue Water (NRW) are conducted at IBTC.

Table 5 Progress of Activities for Output-3

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
3-1	Review situation/needs of skills development on NRW from the results of baseline survey of Activity 1-1.	Progress: 0% Behind: 0.0 months	None	Progress: 95% Behind: 5.0 months - The Project Team had a series of discussions together with Activity 1-1 and 1-2, and shared a common view. - The Project referred to existing qualifications, unit standards, newly-developed qualification, private training providers, existing NRW-related reports and information obtained at Water Loss Conference in Cape Town in May 2018.	None
3-2	Select registered Unit Standards related to NRW from existing qualifications of SAQA.	Progress: 0% Behind: 0.0 months	None	Progress: 95% Behind: 5.0 months - The Project Team concluded to make our training not qualification-oriented with accreditation but problem-solving-oriented with immediate impacts for municipalities. - The Project designs the NRW Training by referring to and utilizing existing qualification / training model, for example, Unit Standard (US254118: Apply water loss control principles) and newly-developed qualification (Water Reticulation Practitioner)	- Legacy qualifications based on Unit Standards are no longer provided because of transition to QCTO in quality assurance. Not only theoretical and practical training, but the site for workplace training should be included in the NRW Training.

PM Form 3-1 Monitoring Sheet Summary

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
3-12	Recruit participants from Municipalities through SALGA for NRW Skills Programme at IBTC.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
3-13	Conduct trainings by South African Facilitators for NRW Skills Programme at IBTC.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
3-14	Monitor implementation of NRW Skills Programme and feed the results back into Annual Plan and Programme	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
3-15	Verify effects of NRW Skills Programme and provide necessary support by JICA Experts and IBTC in sampled Municipality(ies) if any.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None

PM Form 3-1 Monitoring Sheet Summary

No	Activity	Previous Monitoring (as at Dec.2017)		Current Monitoring (as at Jul.2018)	
		Achievement	Issues, Challenges & Solution	Achievement	Issues, Challenges & Solution
		survey and procurement process) is ongoing. Site survey for candidate location was done.		tentatively based on provisional NRW training programme.	Phase 1.
3-7	Procure equipment, instruments/tools and materials for NRW Skills Programme at IBTC.	Progress: 10% Delay: 0.0 month Ahead of schedule, preliminary survey (specifications, quantity and procurement process) was done.	None	Progress: 10% Behind: 6.0 months	- Due to delay in Activity 3-1 to 3-3, this Activity has been suspended and cannot be completed as scheduled in the remaining period of the Phase 1.
3-8	Develop training / learning materials for NRW Skills Programme at IBTC.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 3.0 months	- Due to delay in Activity 3-1 to 3-3, this Activity has been suspended and cannot be completed as scheduled in the remaining period of the Phase 1.
3-9	Conduct TOT by both JICA Experts and South African Facilitators for NRW Skills Programme at IBTC.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
3-10	Develop NRW Skills Programme as an accredited programme by SETA. 3-10a Apply for registration of facilitators of NRW Skills Programme as assessor/moderator/facilitator from SETA. 3-10b Prepare Quality Management System of NRW Skills Programme at IBTC. 3-10c Apply for accreditation of NRW Skills Programme to SETA.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None
3-11	Prepare Annual Plan of NRW Skills Programme including budget plan at IBTC.	Progress: 0% Behind: 0.0 months	None	Progress: 0% Behind: 0.0 months	None

No	Indicator	Previous Monitoring (as at Dec.2017)	Current Monitoring (as at Jul.2018)
	Strategic Business Model		
Verification of Achievement and Implementing Process Indicators won't be obtained and there is no implementation during this monitoring period.			

[Output-3: IBTC's training management capacity in water supply sector is improved.]

Table 8 Achievement of Output-3

No	Indicator	Previous Monitoring (as at Dec.2017)	Current Monitoring (as at Jul.2018)
3-1	Actual trainings on NRW Skills Programme (No. of trainings, trainees)	None (as scheduled).	None (as scheduled).
3-2	Appropriateness of NRW Skills Programme (trainees' evaluation)	None (as scheduled).	None (as scheduled).
3-3	Utilization of IBTC's skills training at sampled Municipality(ies)	None (as scheduled).	None (as scheduled).
Verification of Achievement and Implementing Process Indicators won't be obtained and there is no implementation during this monitoring period.			

1-3 Achievement of Outputs

[Output-1: Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities.]

Table 6 Achievement of Output-1

No	Indicator	Previous Monitoring (as at Dec.2017)	Current Monitoring (as at Jul.2018)
1-1	List of training resources (by providers, programmes, human resources, manuals, subsidies/grants, etc.)	None (as scheduled).	- Baseline Survey report was drafted.
1-2	Benchmarked matrix (summary) of Japan and South Africa on water services (comparative features, strength/weakness, methodology, etc.)	None (as scheduled).	- Benchmark report was prepared, then submitted to the DWS management.
Verification of Achievement and Implementing Process To be of reference to South Africa for improvement, the benchmark report covers similarities and dissimilarity between two countries, and wide-ranging categories with considerations such as water supply administration, human resources development, skills development, training system and facilities, training provision, skill transfer, knowledge management and quality assurance. Recommendations are as below and the report is expected to be utilized for project implementation as well as policy making for human resources development, training provision and WC/WDM including NRW. Recommendations: long-term commitment on human resources development and skills development, adequate funding to NRW reduction, structured training programme for practical impacts, necessity of an organization like Japan Waterworks Association, collaboration with municipalities in training provision.			

[Output-2: IBTC's training management capacity in water supply sector is improved.]

Table 7 Achievement of Output-2

No	Indicator	Previous Monitoring (as at Dec.2017)	Current Monitoring (as at Jul.2018)
2-1	IBTC organization / individual performance / capacity	None (as scheduled).	None (as scheduled).
2-2	Progress of Organizational setting update	None (as scheduled).	None (as scheduled).
2-3	Record of SOPs (actual revisions)	None (as scheduled).	None (as scheduled).
2-4	Progress of update of IBTC	None (as scheduled).	None (as scheduled).

1-5 Changes of Risks and Actions for Mitigation

None.

(1) Progress of Actions undertaken by the Japanese side

None.

(2) Progress of Actions undertaken by the South African side

None.

1-6 Other matters to be considered (such as other JICA's projects, activities of counterparts, other donors, private sectors, NGOs etc.)

(1) Funding Sources of the NRW Training

Provision of additional funding for the Project needs to be sought to sustain the implementation thereof. Appropriate partnerships with sector stakeholders needs to be forged. DWS started the process of engaging relevant stakeholders.

(2) Procedural Challenge of Staff Travelling

DWS seems to face a procedural challenge of staff travelling. This may affect smooth implementation of the Project activities.

(3) New Organizational Structure of IBTC

Developing new organizational structure of IBTC is ongoing. DWS will seek to provide additional capacity to IBTC during upscaling of project activities to ensure smooth implementation of the Project.

(4) Transition of Legacy Qualifications to QCTO as Quality Assurer

Legacy qualifications based Unit Standards will no longer be provided because of transition to QCTO in quality assurance. The Project considers this particularly by including workplace training in addition to theoretical and practical training in developing the NRW Training to align with the proposed QCTO training model.

(5) Newly-developed Qualification "Water Reticulation Practitioner"

New occupational qualification related to water supply namely "Water Reticulation Practitioner" has been developed under the Framework Programme for Research, Education & Training in the Water Sector (FETWater). Although training approach differs between them, the Project designs the NRW Training by referring to and utilizing this new qualification, and develops synergistic relationship.

1-4 Achievement of the Project Purpose

[Project Purpose: NRW Skills Programme is continuously provided at IBTC, based on organizational and technical needs.]

Table 9 Achievement of the Project Purpose

No	Indicator	Previous Monitoring (as at Dec.2017)	Current Monitoring (as at Jul.2018)
1	Actual trainings (No. of trainings / trades or skills)	None (as scheduled).	None (as scheduled).
2	IBTC organization / individual performance / capacity	None (as scheduled).	None (as scheduled).
3	Programmes planned in Strategic Business Model (trades or skills)	None (as scheduled).	None (as scheduled).
4	Status of accreditation of NRW Unit Standards applied to SETA	None (as scheduled).	None (as scheduled).
Verification of Achievement and Implementing Process Indicators won't be obtained and there is no implementation during this monitoring period.			

2 Delay of Work Schedule and/or Problems (if any)

2-1 Delay of the Project (Phase-1)

(1) Details and Cause

The Project (Phase 1) is behind schedule for six months due to:

- Baseline survey (Activity 1-1) and its analysis (Activity 1-2) have been delayed because of unforeseen inactive coordination with municipalities and limited answers from municipalities.
- Additionally, the Project Team needed to review/benchmark the NRW Training with transition in the quality assurance systems of occupational qualifications as well as new qualification development on water reticulation.
- Thus, the Project Team has spent time to outline roles of IBTC (Activity 2-1), developing business plan (Activity 2-2) and designing NRW Training (Activity 3-1 to 3-3) to ensure proper planning to sustain the Project beyond training

So, the Project Team has put hold on other activities scheduled in the Phase 1 including training yard construction and equipment procurement.

(2) Action to be taken

The Project extends the Phase 1 for nine months in consideration of delay and updated schedule of the Project activities. However, the Project shortens the period by revising project activities related to accreditation process to be omitted and also by streamlining some activities such as facilitator training, so the Project keeps the total period of the Project unchanged (The Project will be over in the middle of August 2020).

(3) Roles of Responsible Persons/Organization

Based on the request from South African side, the JCC members will approve to extend the Phase 1 through revision of PDM and PO for the above action in the JCC meeting.

2-2 The NRW Training based on the result of Baseline Survey

(1) Details and Cause

The current PDM specifies that the Project develops the NRW Skills Programme as an accredited training for qualification.

Although the Project was not able to complete questionnaire collection as originally planned, based on the result of baseline survey including questionnaire, existing reports, knowledge, observation of stakeholders on NRW and training in South Africa, and through a series of discussions, the Project Team concluded to make our training namely "the NRW Training" not as accredited qualification-oriented but as problem solving-oriented with immediate impacts for municipalities. Refer to the Annex 2.

Also, the Project develops the NRW Training in consideration of existing qualification

development model, similarities and dissimilarities with existing qualifications and constituent modules by quality assurance bodies for future accreditation. The NRW Training is composed of theory, practice at IBTC and workplace at municipalities/water boards/metros and others if any for 1.5 months cumulatively. Refer to the Annex 3.

(2) Action to be taken

This change of a way of developing the NRW training affects overall goal, project purpose, outputs, project activities and schedule, so concepts and contents of the NRW Training based on result of baseline survey as well as necessary revision of PDM and PO need to be presented to JCC for approval.

(3) Roles of Responsible Persons/Organization

The JCC members will approve concepts and contents of the NRW Training based on result of baseline survey as well as necessary revision of PDM and PO in the JCC meeting.

2-3 Institutional Collaboration with Stakeholders to conduct the NRW Training (Facilitators and Workplaces)

(1) Details and Cause

DWS/IBTC is short of practically-experienced/skilled personnel as facilitator-to-be of the NRW Training and is unlikely to provide the sites for workplace of the NRW Training, so the Project relies on stakeholders such as municipalities, DWS's entities like Water Boards to ensure facilitators and workplace as key factors of success in the NRW Training.

(2) Action to be taken

The Project communicates with and encourages these stakeholders for institutional collaboration to ensure facilitators and workplace of the NRW Training by concluding memorandums of understanding between DWS and stakeholders. Also, in order to set up the site for workplace training, the Project makes the NRW Training coupled with existing DWS's Schedule 6B funded municipalities suffering from challenges.

(3) Roles of Responsible Persons/Organization

DWS takes leadership in the above actions with necessary support from SALGA and JICA Experts.

The Project Team brings up this issues as an agenda of the JCC meeting to get a specific commitment from DWS.

2-4 Assignment of Engineering/Technical Personnel for the NRW Training

(1) Details and Cause

This issue has been highlighted since the previous project monitoring in December 2017.
DWS has assigned the request-based engineering/technical personnel from DWS Headquarters such as the Directorates of Engineer Services and Water Use Efficiency.
However, in view of the basic concept of JICA's Technical Cooperation Project, "To ensure sustainability after the Project and capacity development in the process of any activities, the JICA's Technical Cooperation Project should be implemented by the South African initiative with support from the Japanese side", the Japanese side has requested engineering/technical personnel to be more involved regularly in the project activities at IBTC for day-to-day technical transfer and communication with JICA Experts during the whole period of project implementation.
Now that the overall concept of the NRW Training was settled and the Project advances to more practical stage, engineering/technical personnel and other necessary personnel for the NRW Training are required to be assigned to develop the NRW Training including teaching/learning materials, training yard and equipment as well as conducting the NRW Training actually.

(2) Action to be taken

Currently, DWS is going through procedure for assigning dedicated engineering/technical personnel to IBTC as project member in charge of the NRW Training. Other necessary personnel for implementing the NRW Training as below mentioned such as operation & maintenance of training yard and equipment from procurement stage, should also be assigned certainly.

- Training Yard Management
- Equipment Management
- Class Room Management
- Logistic Management (Accommodation, Transportation and Meals)
- Teaching/Learning Materials Management
- Coordination of Facilitator Technical Meeting
- Coordination of Assessor and Moderator (if necessary)
- Admission Office
- Cleaning of Training Yard and Workshops
- Cleaning of Class Rooms
- Cleaning of Accommodation and dining facilities
- Security Guard
- Overall Management

(3) Roles of Responsible Persons/Organization

DWS assigns dedicated engineering/technical personnel to IBTC as project member for the NRW Training by the end of August 2018 as well as nominate and assign other necessary

personnel for the NRW Training appropriately and on a timely basis.
The Project Team brings up this issues as an agenda of the JCC meeting to get a specific commitment from DWS.

2-5 Recent Absence of SALGA and Reactivation of Collaboration (A Pre-condition for the Project)

(1) Details and Cause

This issue has been highlighted since the previous project monitoring in December 2017.
The Project have suffered from lack of arrangement and coordination with municipalities because of little observance by SALGA in spite of taking-over by DWS after the previous project monitoring.
Although the Project Team observed good performance of SALGA's regional staff, but SALGA headquarters have been less involved in the Project due to personnel transfer of a key counterpart, nonexistence of successor, limited personnel resources in the section in charge.

(2) Action to be taken

The Project encourages SALGA to nominate successor immediately and reactivate collaboration among the JCC and Project members.

(3) Roles of Responsible Persons/Organization

DWS takes responsibility of involving SALGA for the above action with necessary support from the Japanese side, then DWS exchanges the MoU with SALGA to clarify its roles and ensure collaboration during the period of the Project.
The Project Team brings up this issues as an agenda of the JCC meeting to get a specific commitment from DWS.

2-6 Project Management

(1) Details and Cause

The Project Team had meetings and communications including emails among task team and working group members, but keeping the minutes, schedule and progress management have been not necessarily well functional effectively. Also, sort of communication gap among the Project Team was observed when baseline survey didn't proceed smoothly as well as when the Project Team discussed about the direction of training at which the Project aims.

(2) Action to be taken

Now that the overall concept of the NRW Training was settled and the Project advances to more practical stage, project management need to be improved.

(3) Roles of Responsible Persons/Organization

As premises for the basic concept of JICA's Technical Cooperation Project mentioned above, the both South African and Japanese sides review roles and responsibility of the Project Team members and the JICA Experts, clarifies task team and working groups, and improves schedule/time management, communication and information sharing including the minutes' sharing process.

The Project Team brings up this issues as an agenda of the JCC meeting to improve the project management.

3 Revision of Project Design Matrix and Plan of Operations

3-1 Project Design Matrix (PDM)

The current PDM was prepared in the beginning of the Project. And now that the Project designed concepts and contents of the NRW Training based on the result of baseline survey including observation of other related information and events which affect the Project, it is necessary to set PDM in order based on this.

In particular and essentially, the below will be reflected to PDM.

- The Project is targeting immediate impact for NRW problem solution of municipalities through the NRW Training at IBTC and workplaces.
- The Project does not make the Project qualification-oriented with accreditation.
- Indicators will be modified based on status quo obtained in the baseline survey
- The TOT process is replaced by interactive Facilitator Technical Meetings for period shortening (Facilitators will join the second training in Japan.).

And also, for better understanding about the Project implementation.

- To simplify expressions and sentences straightforward.
- To coordinate and eliminate duplicated activities across Outputs.

3-2 Plan of Operations (PO)

Same as the above, and the Project revises schedule of activities and inputs.

4 Preparation by the South African side toward after completion of the Project

DWS is likely to recognize the NRW Training as a pilot differing from existing model, to be a part of water-related occupational qualifications including Water Reticulation Practitioner.

II. Project Monitoring Sheet I & II (as attached)

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Annex

Annex-1: The 1st Training in Japan and Benchmark Report
Annex-2: Baseline Report (Draft)
Annex-3: The NRW Training

Abbreviations

CoGTA	: Department of Cooperative Governance and Traditional Affairs
DIRCO	: Department of International Relations and Cooperation
DWS	: Department of Water and Sanitation
ECSA	: Engineering Council of South Africa
EWSETA	: Energy and Water Sector Education and Training Authority
IBTC	: Infrastructure Branch Training Centre (under NWRI)
IWS	: International Water Support (a Branch of DWS)
JCC	: Joint Coordinating Committee
JICA	: Japan International Cooperation Agency
LGSETA	: Local Government Sector Education and Training Authority
NRW	: Non-Revenue Water
NWRI	: National Water Resources Infrastructure (a Branch of DWS)
PDM	: Project Design Matrix
PMU	: Programme Management Unit (a Branch of DWS)
PO	: Plan of Operations
P&I	: Planning and Information (a Branch of DWS)
QCTO	: Quality Council for Trades and Occupations
SALGA	: South African Local Government Association
SETA	: Sector Education and Training Authority
WRC	: Water Research Commission
WSA	: Water Services Authority

Project Monitoring Sheet I (Revision of Project Design Matrix)

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water
Project Period: August 2017 to July 2020 (36 months)
Implementing Organization: Department of Water and Sanitation (DWS) / IBTC
Dicrect Beneficiaries: DWS, IBTC and its personnel, Facilitators selected
Indicrect Beneficiaries: Municipalities
End Beneficiaries: Customers / Consumers of water supplied by Municipalities
Project Site: Gauteng Province

Version 1
Dated 17 Aug. 2017

Monnitoring: 25 July 2018

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<Overall Goal>					
Non-Revenue Water (NRW) skills development for Municipalities are continuously conducted under the IBTC's direction in collaboration with SALGA.	1. Actual trainings in IBTC (No. of trainings / trades or skills) 2. IBTC organization/individual performance (degree/status) 3. Programmes planned in Strategic Business Model (trades or skills) 4. Actual trainings of NRW in Municipalities (No. of training)	1&4. Annual Training Report 2. Capacity Assessment Report 3. IBTC Strategic Business Model		None.	
<Project Purpose>					
NRW Skills Programme is continuously provided at IBTC, based on organizational and technical needs.	1. Actual trainings (No. of trainings / trades or skills) 2. IBTC organization/individual performance / capacity 3. Programmes planned in Strategic Business Model (trades or skills) 4. Status of accreditation of NRW Unit Standards applied to SETA	1. Annual Training Report 2. Capacity Assessment Report 3. IBTC Strategic Business Model 4. SETA Accreditation Certificate	- Dramatic reduction of budget and public grants on skills development for Municipalities does not happen.	None.	
<Outputs>					
1. Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities.	1-1. List of training resources (by providers, programmes, human resources, manuals, subsidies/grants, etc.) 1-2. Benchmarked matrix (summary) of Japan and South Africa on water services (comparative features, strength/weakness, methodology, etc.)	1-1. Baseline Survey Report 1-2. Benchmark Report		- Baseline Survey report was drafted. - Benchmark report was prepared, then submitted to the DWS management.	
2. IBTC's training management capacity in water supply sector is improved.	2-1. IBTC organization/individual performance / capacity 2-2. Progress of Organizational setting update 2-3. Record of SOPs (actual revisions) 2-4. Progress of update of IBTC Strategic Business Model	2-1. Capacity Assessment Report 2-2. Proposed Organogram of IBTC 2-3. Standard Operating Procedure (SOP) 2-4. Draft revised IBTC Strategic Business Model		None.	
3. Trainings on Non-Revenue Water (NRW) are conducted at IBTC.	3-1. Actual trainings on NRW Skills Programme (No. of trainings, trainees) 3-2. Appropriateness of NRW Skills Programme (trainees' evaluation) 3-3 Feed back / utilization of skills trained at IBTC into the water services at sampled Municipality(ies)	3-1. IBTC Annual Report 3-2. Training evaluation questionnaire to trainees 3-3. Survey report in sampled Municipality(ies)		None.	

Note:

Activities	Inputs		Important Assumption
Activities for Output 1 1-1. Conduct baseline survey on Skills Development in water supply sector (programme, human resources, materials and management). 1-2. Compile and analyze training resources, good practices, lessons learnt in water supply sector. 1-3. Share training resources, good practices, lessons learnt with SALGA and Municipalities. 1-4. Incorporate good practices into training materials. 1-5. Benchmark water supply services and its skills development in Japan. 1-6. Hold a seminar on the result of the baseline survey and benchmark.	**The South African Side** **1. Project Personnel** 1) JCC Chairperson: Chief Director of Global Cooperation, DWS 2) Project Director (PD): Director of NWRI, DWS 3) Co-Project Director (PD): SALGA 4) Project Manager (PM): Centre Manager, IBTC 5) Training Manager, IBTC 6) Quality Assurer, IBTC 7) NRW Training Personnel, IBTC 8) Municipal Coordinator (Technical), SALGA 9) Municipal Coordinator (HRD), SALGA 10) TOT Facilitator 11) Candidate Facilitator 12) Other project personnel mutually agreed upon as necessary	**The Japanese Side** **1. JICA Experts** 1) Chief Advisor / NRW Management 2) Deputy Chief Advisor / NRW Management 3) Skills Programme Planning / Organization Coordination 4) Water Leakage Detection 5) Water Distribution Control / Commercial Loss 6) Training Yard Design and Supervision 7) Procurement / Administrative Coordination 8) Training Management / Human Resource Development 9) Other Expert(s) if necessary	**Pre-Conditions** - DWS and SALGA agree on their collaboration and cooperation for the Project - DWS allocates/ assigns personnel in charge of NRW Skills Programme at IBTC.
Activities for Output 2 2-1. Review roles and responsibility of IBTC for skills development of Municipalities in water supply sector based on the results of Output-1. 2-2. Draft proposed organogram of IBTC including NRW Training Section. 2-3. Prepare Terms of Reference for Training Sections related to skills development in water supply sector. 2-4. Prepare draft Standard Operating Procedures (SOP) of skills development provision. 2-5. Revise the SOP through the activities of Output-3. 2-6. Draft revised IBTC Strategic Business Model. 2-7. Conduct capacity assessment of IBTC's organization, individuals and facilitators developed.			
Activities for Output 3 3-1. Review situation/needs of skills development on NRW from the results of baseline survey of Activity 1-1. 3-2. Select registered Unit Standards related to NRW from existing qualifications of SAQA. 3-3. Design NRW Skills Programme consisting of the selected Unit Standards and supplementary items if any. 3-4. Select facilitators (qualified/skilled artisans on water reticulation or equivalent) for NRW Skills Programme from Municipalities and IBTC (DWS). 3-5. Schedule Training of Trainer (facilitator) (TOT), Assessors and Moderators for NRW Skills Programme at IBTC. 3-6. Develop training yard for NRW Skills Programme at IBTC. 3-7. Procure equipment, instruments/tools and materials for NRW Skills Programme at IBTC. 3-8. Develop training / learning materials for NRW Skills Programme at IBTC. 3-9. Conduct TOT by both JICA Experts and South African Facilitators for NRW Skills Programme at IBTC. 3-10. Develop NRW Skills Programme as an accredited programme by SETA. a) Apply for registration of facilitators of NRW Skills Programme as assessor/moderator/facilitator from SETA. b) Prepare Quality Management System of NRW Skills Programme at IBTC. c) Apply for accreditation of NRW Skills Programme to SETA. 3-11. Prepare Annual Plan of NRW Skills Programme including budget plan at IBTC. 3-12. Recruit participants from Municipalities through SALGA for NRW Skills Programme at IBTC. 3-13. Conduct trainings by South African Facilitators for NRW Skills Programme at IBTC. 3-14. Monitor implementation of NRW Skills Programme and feed the results back into Annual Plan and Programme. 3-15. Verify effects of NRW Skills Programme and provide necessary support by JICA Experts and IBTC in sampled Municipality(ies) if any.	**2. Land, Building and Facilities** 1) Office space and facilities for JICA Experts, including water, electricity, internet connection and air conditioners if necessary 2) Land for training yard 3) Other facilities mutually agreed upon as necessary **3. Local Cost** 1) Allowance, accommodation, travelling cost and foods for project personnel, facilitators and trainees in South Africa (born by DWS, Municipalities, etc.) 2) Administration and operational costs including cost for demurrage at local customs point and licensing of equipment/instruments if necessary 3) Other costs mutually agreed upon as necessary	**2. Facilities** 1) Training yard 2) Web site development and maintenance 3) Other facilities mutually agreed upon as necessary **3. Equipment, instruments, tools and materials** 1) Portable ultrasonic water flow meter 2) Leak detection equipment/instruments 3) Tools for training 4) Materials such as pipe, fittings, valve, meter and etc. 5) Other equipment, instruments, tools and materials mutually agreed upon as necessary **4. Training** 1) Training in Japan 2) Training in the third country if necessary	

Issues & Countermeasures

1. Delay of the Project (Phase-1)
The Project has been delayed for six months. The Project needs to extend the Phase 1 for 9 months (The Project will be over in the middle of August 2020).

2. The NRW Training based on the result of Baseline Survey
The Project Team concluded to develop the NRW Training not as accredited qualification-oriented training but as problem solving-oriented training with immediate impacts for municipalities. This change of a way of developing the NRW Training affects overall goal, project purpose, outputs, project activities and schedule, so concepts and contents of the NRW Training as well as necessary revision of PDM and PO need to be presented to JCC for approval.

3. Institutional Collaboration with Stakeholders to conduct the NRW Training
The Project communicates with and encourages stakeholders to ensure facilitators and workplace of the NRW Training by concluding memorandums of understanding between DWS and stakeholders. Also, in order to set up the site for workplace if needed, the Project makes the NRW Training coupled with existing DWS's Schedule 6B funded municipalities suffering from challenges. DWS needs to takes leadership to ensure facilitators and workplace.

4. **Assignment of Engineering/Technical Personnel for the NRW Training**
Engineering/technical personnel and other necessary personnel for the NRW Training are required to be assigned to develop the NRW Training as well as to conduct the NRW Training actually. DWS needs to assigns dedicated engineering/technical personnel by the end of August 2018 as well as nominate and assign other necessary personne appropriately and on a timely basis.

5. Recent Absence of SALGA and Reactivation of Collaboration
The Project have suffered from lack of arrangement and coordination with municipalities because of little observance by SALGA in spite of taking-over by DWS
The Project encourages SALGA to nominate successor immediately and reactivate collaboration among the JCC and Project members. DWS needs to take responsibility of involving SALGA, then exchange the memorandum of understanding with SALGA to clarify its roles and ensure collaboration during the period of the Project.

6. Project Management
Now that Project advances to more practical stage, project management need to be improved. the both South African and Japanese side need toreview roles and responsibility of the Project Team members and the JICA Experts, clarify task team and working groups, and improve

Note: Indicators will be discussed and finalized based on the baseline survey at the beginning of the Project and be agreed at Joint Coordinating Committee (JCC)

Project Monitoring Sheet II (Revision of Plan of Operation)

PO4

Version 1

Dated 17 Aug. 2017

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water

Years: 2017 (months 7–12), 2018 (1–12), 2019 (1–12), 2020 (1–8). Phase 1: 2017/8 – 2018/7; Phase 2: 2018/8 – 2020/7.

Activities		
	Behind 0.0 month	50%

Input	Plan/Actual	Notes
Experts		
①-1 Chief Advisor / NRW Management	Plan	
Akinori MIYOSHI	Actual	
①-2 Deputy-Chief Advisor / NRW Management	Plan	
Taketoshi FUJIYAMA	Actual	
②Skills Programme Planning / Organization Coordination	Plan	
Kenichiro SUGIYA	Actual	
③Water Leakage Detection	Plan	
Hiroki NIIMURA	Actual	
④Water Distribution Management / Commercial Loss	Plan	
Hiroyuki MORITA	Actual	
⑤Training Yard Design and Supervision	Plan	
Masuji IDE	Actual	
⑥Procurement / Administrative Coordination	Plan	
Toshinonbu KASUYA	Actual	
Long-Term Expert		
⑦Training Management / Capacity Development	Plan	
Nobutaka MARUYAMA	Actual	
Equipment Procurement		
Equipment for Water Leakage Detection	Plan	
	Actual	
National Consultant/Contractor		
Training Yard Construction	Plan	
	Actual	
Web Site Development and Maintenance	Plan	
	Actual	
Training in Japan		
Phase-1 Training in Japan (for Managerment / Decision Making Level)	Plan	
	Actual	
Phase-2 Training in Japan (for Candidate Facilitators / Working Level)	Plan	
	Actual	

Monitoring phases: 第1期 (2017/8 – 2018/7); 第2期 (2018/8 – 2020/7).

Monitoring	Plan/Actual	Notes
Monitoring		
Joint Coordination Committee	Plan	
	Actual	Kick-off; 1st JCC
Set-up the Detailed Plan of Operation	Plan	
	Actual	
Submission of Monitoring Sheet	Plan	
	Actual	Ver.0; Ver.1
Monitoring Mission from Japan	Plan	
	Actual	
Joint Monitoring	Plan	
	Actual	Ver.0; Ver.1
Post Monitoring	Plan	
	Actual	
Reports/Documents		
Project Progress Report	Plan	▲ (2018/7); ▲ (2019/8)
	Actual	
Project Completion Report	Plan	▲ (2020/7)
	Actual	

Project Monitoring Sheet II (Revision of Plan of Operation)

PO4

Version 1

Dated 17 Aug. 2017

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water

Activities		Year	2017						2018							2019												2020							
		Phase							Phase 1							Phase 2																			
		Month	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Project Brief Note		Plan													▲														▲							▲		
		Actual																																						
Public Relations																																							
Web Site		Plan																																						
		Actual																																						
Press Release, Press Conference, Public Relations Magazine, Newsletter		Plan																																						
		Actual																																						

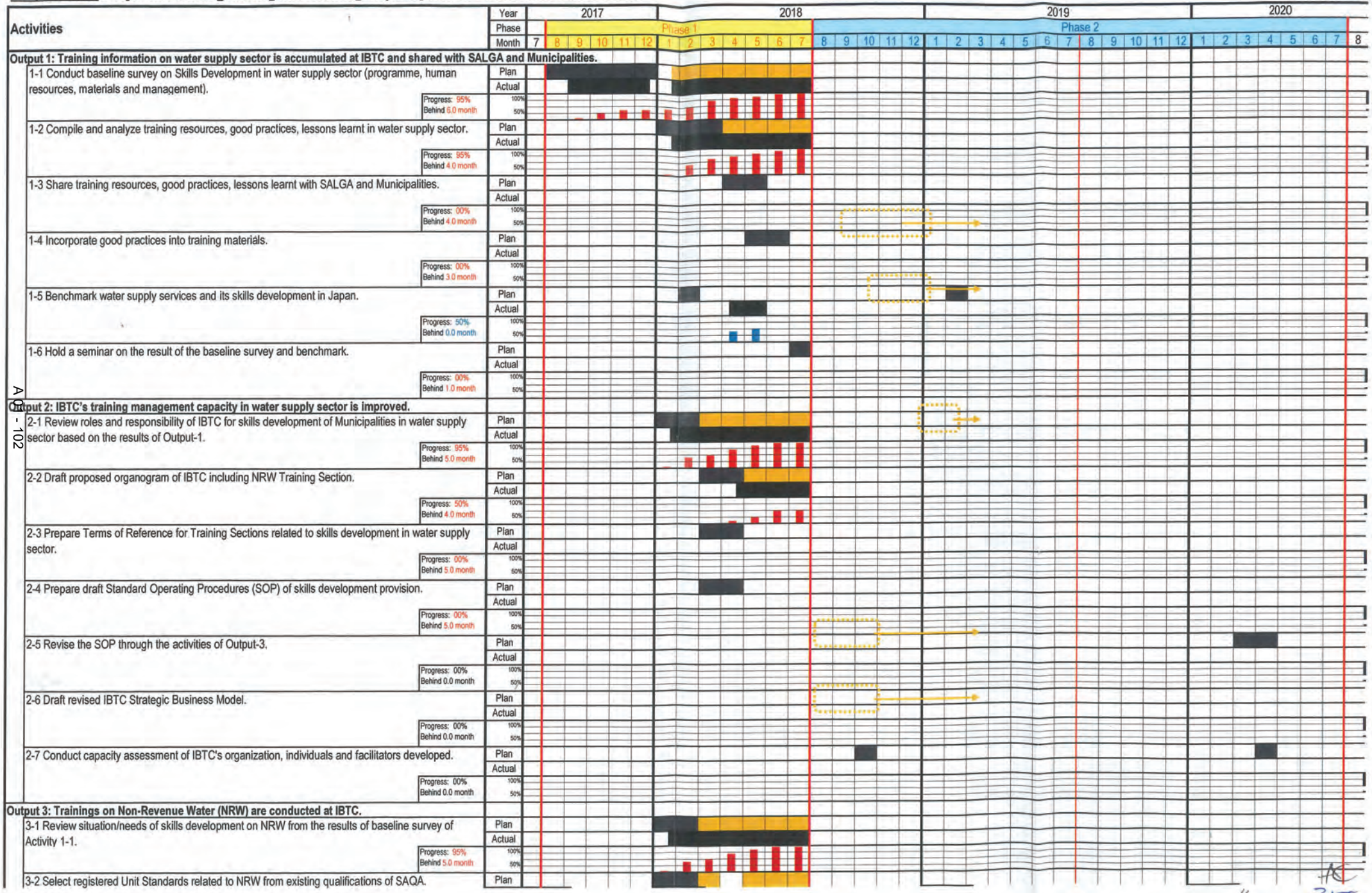
Project Monitoring Sheet II (Revision of Plan of Operation)

PO4

Version 1

Dated 17 Aug. 2017

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water



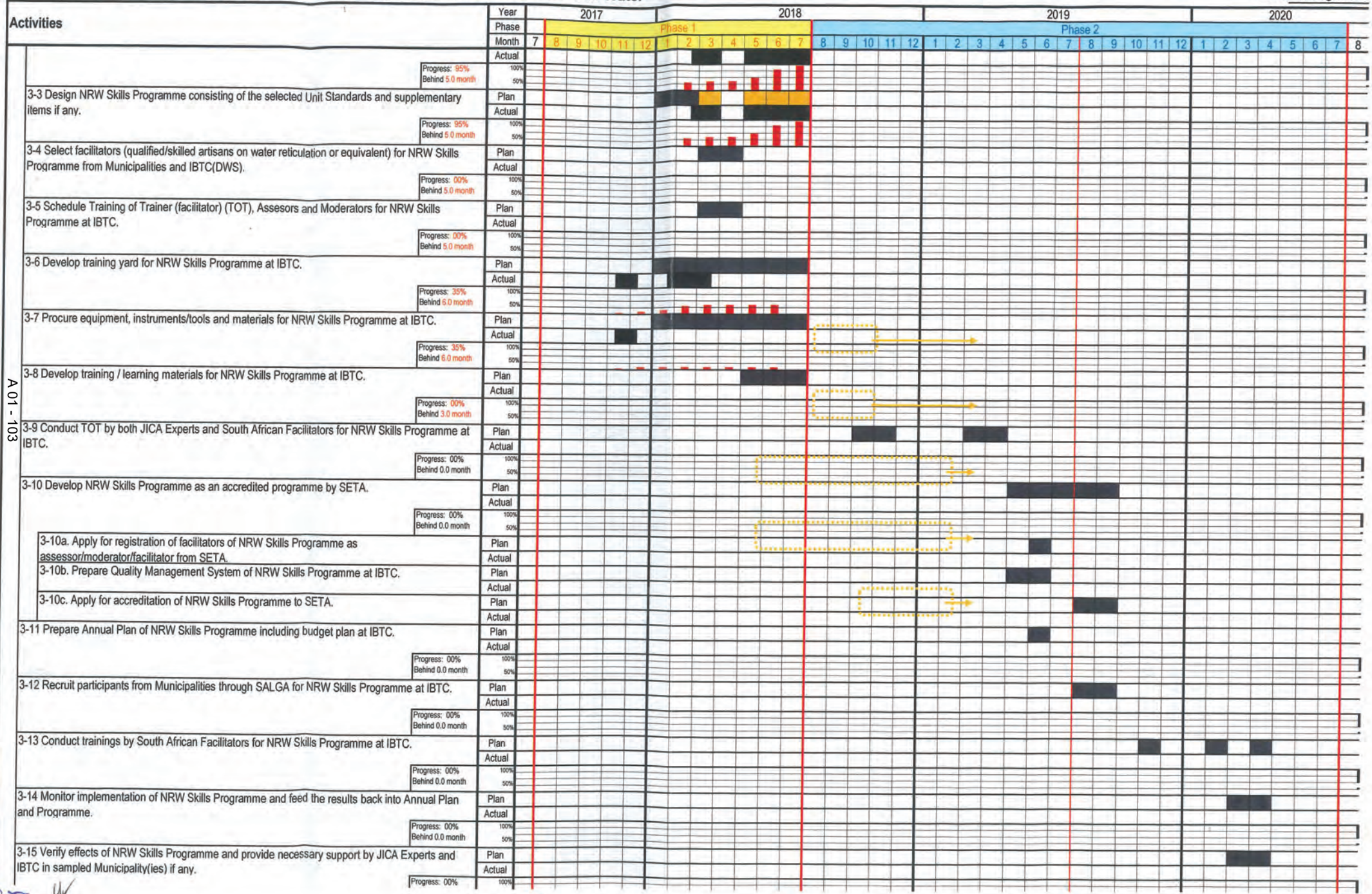
Project Monitoring Sheet II (Revision of Plan of Operation)

PO4

Version 1

Dated 17 Aug. 2017

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water



The 1st Training in Japan

Course Name: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water (Management)

Course Objective:

To benchmark the Japanese cases in framework of water services administration, human resources development, training provision and water supply services by authorities, particularly Non-Revenue Water reduction.

Module Outputs:

- To understand comprehensively the framework of water supply administration in Japan.
- To understand human resources development, skills development, training facilities and its operation, issues and challenges such as inter-municipality cooperation, mobilization of private resources, staff aging, skill transfer, knowledge management and training quality assurance in water supply sector of Japan.
- To understand efforts against Non-Revenue Water reduction in water supply sector of Japan.

Receiving Organization: JICA, Ministry of Health, Labour and Welfare (MHLW), Japan Water Works Association (JWWA), Yokohama City Waterworks Bureau, Tokyo Metropolitan Bureau of Waterworks, Japan Water Plumbing Engineering Promotion Foundation, Japan Sewage Works Agency

Curriculum

- JICA: Orientation
- MHLW: Water supply sector and administration in Japan
- JWWA: Roles of Japan Water Works Association
- JWWA: Water supply in Japan from statistical viewpoints
- JWWA: Training provision nationwide to municipalities for capacity development in Japan
- JWWA: Material certification system in water supply sector
- Tokyo Metropolitan: HRD system, training programme, OJT, training provision, self-development, skills transfer, knowledge management, evaluation and update
- Tokyo Metropolitan: NRW and efforts
- Tokyo Metropolitan: Operation of practical training facility
- Tokyo Metropolitan: Tour of practical training facility
- Yokohama City: Outlines of water supply and facilities
- Yokohama City: Tour of dam
- Yokohama City: Tour of sedimentation basin and intake
- Yokohama City: Water treatment plant (membrane filtration)
- Yokohama City: Tour of water treatment plant (membrane filtration)
- Yokohama City: Water supply control based on water demand projection, and SCADA
- Yokohama City: Public relations in water museum
- Yokohama City: Mapping System
- Yokohama City: HRD system, skills transfer, knowledge management and quality assurance
- Yokohama City: Leakage survey planning
- Yokohama City: Tour of practical training facilities (leakage)
- Yokohama City: Deteriorated pipe replacement planning
- Yokohama City: Water meter reading
- Yokohama City: Block (zoning) system

- Japan Water Plumbing Engineering Promotion Foundation: Nationally-standardized training of skilled water-fitters/plumbers, trade test and qualification for installation of water components
- Japan Sewage Works Agency: Comprehensive training center for municipalities

Period: 16th to 27th April 2018

Participants: 9 delegation officials

Name	Organ.	Position
Mr Chaminuka Aloious	Department of Water and Sanitation (DWS)	Chief Director: Engineering Services, National Water Resources Infrastructure (NWRI)
Ms Mathiba Kentse	Department of Water and Sanitation (DWS)	Director: Operational Support
Mr Itumeleng Masike	Department of Water and Sanitation (DWS)	Acting Director: Water Use Efficiency
Ms Harigobin Shantal	South African Local Government Association (SALGA)	Programme Manager: Municipal Infrastructure and Services
Mr Westman Trevor	City of Tshwane	Deputy Director: Water Demand Management, Utility Services
Mr Ashan Nandlal	City of eThekwini	Project Executive: Water and Sanitation
Mr De Bruyn Jacobus	City of Cape Town	Head: Integrated Planning & Information Management, Water and Sanitation
Ms Pumla Mkele	Local Government Sector Education and Training Authority (LGSETA)	Manager: Education and Training Quality Assurer (ETQA)
Dr(Ms) Monyatsi Lizzy	Tshwane University of Technology (TUT)	Head of Department and Senior Lecturer: Environmental, Water and Earth Sciences

water & sanitation

Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

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Report on Benchmarking of Water Services Framework and Training on Non-Revenue Water in Japan

PROJECT TO STRENGTHEN THE INFRASTRUCTURE BRANCH TRAINING CENTRE TO OFFERNON-REVENUE WATER MANAGEMENT TRAINING

DWS – JICA Technical Cooperation Agreement

Department of Water and Sanitation
May 2018

1. Executive summary

The Department of Water and Sanitation in conjunction with SALGA signed a 3 year Technical Cooperation Agreement with the Japan International Cooperation Agency (JICA) to strengthen the training capacity of the DWS Infrastructure Branch Training Centre (IBTC). The project aims to skill and capacitate water sector employees on the management of Non-Revenue Water (NRW), learning from best practices in Japan.

South African delegation of nine (9) officials that comprised three Department of water officials and one each from the following organisations; municipalities of City of Tshwane, Cape Town and eThekwini, Tshwane University of Technology (TUT), South Africa Local Government Association (SALGA and the Local Government Sector Education and Training (LGSETA) undertook a water sector and training on non-revenue water benchmarking trip to Japan from the 16 to 27 April 2018. This benchmarking trip was undertaken as part of JICA sponsored project to strengthen general infrastructure training capacity at IBTC and assist with the establishment of National Non-Revenue Water (NRW) training facility for Municipalities.

Japan is an advanced country which operates and maintains its water supply systems very well. Its overall Non Revenue Water is below 10% with all water being properly measured and fully accounted. South Africa has very high water losses and non-revenue water is at 42%. Japan has an elaborate training system which is well structured and developed in technical training and skills transfer. It was considered prudent that South Africa learns some of the practices in Japan to manage NRW.

The benchmarking exercise was done which showed many similarities between the systems employed in Japan and in South Africa. For South Africa some areas require only improvement in implementation to reach the level of Japan. There are also many areas which South Africa can adopt from the Japan model to the betterment of the state.

The benchmarking also found the importance of long term commitment to human resources and skills development as well as adequate budgetary provision to achieve NRW reduction.

Japan water supply sector has ring fenced budgets resulting in more consideration given to important aspects of NRW management.

Training is a key element of NRW management in Japan and the water sector has elaborate training programs to skill practitioners which are run by associations representing the whole sector.

Table of Contents

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1. Introduction

The governments of South Africa and Japan entered into a three year Technical Cooperation Agreement through their implementing bodies of Department of Water and Sanitation (DWS) and Japan International Cooperation Agency (JICA) respectively. The aim of the agreement is to strengthen the training capacity in Non-Revenue Water (NRW) management in South Africa. DWS and JICA identified the Infrastructure Branch Training Centre (IBTC) as a model and pilot in offering training in NRW management. The project aims to up skill and capacitate local government employees on the management of Non-Revenue Water (NRW), learning from best practices in Japan.

Water is a scarce resource in South Africa. The need to manage water equitably is espoused in the constitution of the Republic and also in the National Water Act (Act 36 of 1998). Water Conservation and Water Demand Management (WC/WDM) is recognized in the Act as an instrument for managing water equitably thus aiming at reducing Non-Revenue Water (defined as water not billed or accounted for).

South Africa has very high water losses and non-revenue water with a national average of 42%. This is a major contrast compared to Japan with less than 10%. It is therefore prudent that South Africa learns from best practices in Japan to bring down the proportion of non-revenue water in the water supply system.

The IBTC was selected as a site for a model and pilot of the NRW management training in the JICA-DWS Cooperation Agreement. The benchmarking trip was arranged as part of the program to improve NRW management training in order to select and identify suitable trainings offered in Japan. The benchmarking trip follows a process preceded by the baseline survey where priority areas were identified with the objective of identifying trainings which would relevant and would suit the local conditions. The purpose of the trip to Japan undertaken from 16 to 27 April 2018 was to benchmark Water Service Framework and Non-Revenue Water training and make recommendations that the IBTC project should consider on the Non-Revenue Water management training project.

The delegation of nine members from South Africa selected for the exercise are senior members from organizations which are participating in the DWS-JICA technical cooperation agreement and are as follows:

Table 1: List of South Africa delegation

Item No	Name	Institution
1	Aloious Chaminuka	Department of Water and Sanitation (DWS)
2	Gladness Kentse Mathiba	Department of Water and Sanitation (DWS)
3	Thabo Masike	Department of Water and Sanitation (DWS)
4	Shantal Harigobin	South African Local Government Association (SALGA)
5	Pumla Mkele	Local Government Sector Education Training Authority (LGSETA)
6	Ashan Nandlal	EThekwini Municipality
7	Jacobus Debruyn	City of Cape town
8	Trevor Westman	City of Tshwane
9	Lizzy Monyatsi	Tshwane University of Technology (TUT)

2. The Benchmarking exercise

The delegation visited Japan from 16 to 27 April 2018 and was hosted by the JICA at the JICA centre in Yokohama city. There was a program prepared for the visit. The daily activities involved visiting water services institutions in and around the cities of Tokyo and Yokohama in Japan. The hosts had prepared presentations that were shared with the delegation at the start of the visit. During the visits, presentations were made by the hosts and discussions followed thereafter.

As part of the program, sessions were arranged to meet with bodies in the water supply sector in Japan such as the Japan Water Works Authority, Japan Water Plumbing Engineering Promotion Foundation, Kanagawa Water supply authority, Tokyo water Works Bureau, Yokohama Water works Bureau, Japan Sewage Works Agency. The delegation also visited various training facilities for the practical demonstrations of the training provided in Japan.

In order to package the outcomes of the visit, the delegation identified key focus areas or themes of the benchmarking exercise which are:

- Water supply administration in Japan
- Human resources development
- Skills development
- Operational training facilities

- Use of private resources
- Ageing staff skills transfer and Knowledge management
- Quality assurance.

For each of the focus areas, the benchmarking exercise employed the following criteria: - lessons and observations from the Japan system; how South Africa compares; what practices South Africa can follow; Institutions to lead the implementation and what opportunities and challenges are there for South Africa.

3. Discussion

To give a context to the benchmarking, a brief comparison of the water supply in Japan and South Africa was done. For the Japan water supply system a case study of the Yokohama city water supply was used. The team spent a number of working sessions with the Yokohama Water Bureau, the organisation managing water supply to the city of Yokohama.

3.1. Features of Yokohama City water supply

3.1.1. Water supply coverage

- Population 3.7million
- Water and Waste Water Connections 1.84 million
- Water and Waste Water Connection rate 100%
- Assurance of supply of water supply 24/7
- No growth in demand (population actually reducing)

3.1.2. Technical features

- Length of pipeline 9265 km
- Per capita consumption 303 l/c/d
- Min water pressure 15 m
- Max water pressure 75 m
- Pipe material type influenced by seismic occurrence (high quality)

3.1.3. Operation and maintenance issues

- Water losses 8.2%
- Planned maintenance system in place
- Well monitored water supply systems
- Proactive leak detection

3.1.4. Billing information

- Free basic water
- Illegal connections prevalent
- Collection rate below 50%
- Various Tariff regimes used
- Various types of water meter employed but no regular replacement program
- Water budget and revenue not ring fenced
- Culture of non-payment

3.1.5. Staff training

- Little or no in-house training
- Training mostly done by external service providers
- Training offered is mostly abstract
- High emphasis on formal qualifications

3.1.6. Refurbishments

- Capital investment for pipe replacement of 110 km's per year at 19 Billion Yen (R2,1 billion per year).
- Lengthy period to reduce Non Revenue Water (70 years)
    - From 80% to 26% - 24 years
    - 26% to 6 % - 31 years

3.2. Features of the South Africa water supply system

3.2.1. Water supply coverage

- Assurance of supply of water supply 24/7 in cities but decreases for rural areas. Intermittent supply in some areas
- Coverage varies 50 to 80%
- Rapid growth of service areas, demand exceeds supply capacity

3.2.2. Technical features

- Per capita consumption varies from urban (300l/c/d) to basic level of (25l/c/d)
- Min design water pressure 20m
- Max design water pressure 90m
- Pipe material type: Sub-standard materials used in some areas
- Deteriorating water quality is some areas

3.2.3. Operation and Maintenance

- Average NRW >42% and increasing
- Reactive maintenance
- Well monitored water supply systems in some Metros but decreases to none is some areas
- No Proactive leak detection
- Infrastructure is mostly under-maintained
- Ageing infrastructure in most areas

3.2.4. Billing information

- Free basic water given to all indigents
- Illegal connections prevalent
- Collection rate below 50%
- Various Tariff regimes used
- Various types of water meter employed but no regular replacements carried out
- Water budget and revenue not ring fenced
- Culture of non-payment prevalent

3.2.5. Training

- Little or no in house training
- Training mostly done by external service providers
- Training offered is mostly abstract

3.2.6. Refurbishments

- Funding challenges
- Inconsistent pipe replacement policy and no committed budgets
- Growing water shortage
- Vandalism of infrastructure.

4. Results of the benchmarking

Detailed benchmarking of key factors

Lessons/Observation in Japan	South African Perspective			
	How RSA compares	Practices RSA can follow	Institutions to take lead	Opportunities/ Obstacles/ Challenges
1. Benchmarked area: Water supply administration				
Three layers of water administration are national with five ministries, 47 prefectures and cities, town and villages.	Administration of water in South Africa is shared between three tiers of government National, Provincial and Local government There is less Provincial involvement in some Municipalities	None		
2. Human Resources Development				
System has a culture of long term (Lifetime) employment of personnel; and training and development is based on that principle	Job seeking is fairly common	Staff retention programs needed	Employer	Lack of funding and misallocation of Funds
Employees select company to work for	Employees choose profession and remuneration over company	No applicable	N/A	N/A
Less emphasis on academic qualification	Entry level determined by minimum qualification and experience	Not applicable different system	Employer	Learnership program and on the job training needs to be strengthened to supplement employment
There is high Organizational loyalty	Less emphasize to organizational loyalty but more on individual	Develop organizational culture of loyalty	Employer and employees	N/A
High culture of team work	Less culture of team work and seek individual recognition	Inculcate culture of multi-disciplinary teams and team work by rewarding	Employer and employees	Organizational culture

Lessons/Observation in Japan	South African Perspective			
	How RSA compares	Practices RSA can follow	Institutions to take lead	Opportunities/ Obstacles/ Challenges
		team achievements		
Innovation is encouraged	Innovation is encouraged but more compliance driven	Improved efficiency	Employer and employees	Remove compliance driven barriers, research done but there is no implementation and dissemination information to municipalities
Central recruitment process for staff and placement which includes entrance exam compulsory for all employees	Recruitment is decentralized	Strengthening South Africa recruitment and selection system	Employer	Improve our recruitment systems
Staff rotation is encouraged for development after three years	Staff development is encouraged and grants for further training are available. New knowledge and thereafter specialization is highly recommended	Ensure job rotation and multi skilling is developed and maintained	Employer	Better coordination
3. Skills development				
Structured skills development framework through Japan Water Works Association (JWWA) and Bureau's	Structured skills development framework through National Qualification Framework (NQF)	Holistic development of employees	Employer and employees	Lack of effective and consistent implementation
Japanese system identifies weakness in terms of diminishing skills	Identify weaknesses and implement through sector skills plan	Strengthen implementation South African skills development system	Employer and training providers and empower IBTC	Funding of training programmes internally and externally
Places value on on-the-job training	On the Job Training is not structured and documented. Most training is done off-the-job	Improve appropriate knowledge and skills. Focused orientation training.	Employer and employee	Lack of funding and staff capacity

Lessons/Observation in Japan	South African Perspective			
	How RSA compares	Practices RSA can follow	Institutions to take lead	Opportunities/ Obstacles/ Challenges
Japanese have refined training modules	Not available in SA	Refine sector specific training modules	Employer	Lack of dedicated staff, funding and uncoordinated training environment
Japanese match training to abilities of personnel and requirements of the job	Training is abstract and generic	Implement workplace skills plan and career path development	Employer and SETA's	Lack of skilled human resource practitioners
System determines gaps in terms of skills and training	Water sector requires consensus on the training and skills gaps	Water sector needs to mobilize resources to acquire skills		
4. Operational Training Facilities				
Japan invested heavily in internal training schools both centrally and regionally	South Africa invested on accredited and external training. Little internal training and no internal training facilities	Follow Japan model and commitment	Employer internal training and Sector Education Training Authority accredited training	Define scope of training Focus mainly on external training
Japan has identified qualified and experienced trainers	Not identified	Proper training skills transfer	Employer, Water Sector and Industry	Still to identify qualified experienced trainers and create criteria for qualified trainers
Scope of training well defined by the needs of the industry or organization.	Scope still to be defined.	Follow Japanese model with respect to identifying training scope according to the needs of the industry	Water Sector and Industry	Still to identify the scope
There is coordination and prioritization of funding for training facility.	National training facility not yet developed	Follow Japanese model to get sustainable funding model. Class	National Government and Employer and water sector	Insufficient funding and willingness to establish training facility

Lessons/Observation in Japan	South African Perspective			
	How RSA compares	Practices RSA can follow	Institutions to take lead	Opportunities/ Obstacles/ Challenges
		rooms full and effective training	industry	
5. Use of external service providers				
Limited use of private training providers	Extensive outsourcing or use of external service providers due to lack of internal skills	Follow Japanese model and retain skills and increase capacity and include skills transfer as part of outsourced delivery	Employer	Change mindset in the organization to use internal staff and increase funding to employ more staff.
6. Ageing staff, Skills Transfer and Knowledge Management				
Japan Re-employ retired staff to be used as mentoring staff	Limited deployment executed by ECSA, IMESA and MISA	Plan, fund and implement mentoring program through retiring experienced staff	Employer and employee cooperation	Funding staff resource and change HR policies
In service staff volunteer to provide training	Rarely performed due to staff shortages	Plan properly and provide incentives for volunteer staff	Employer and water sector	Staff resource and HR policy development and willingness to share knowledge
Standard Operating Procedures (SOP)documented and implemented	SOP available but not at the level of Japan standard	Provides clarity to employees on how to effectively perform tasks.	Employer and employee	Lack of willingness to share knowledge and enforcement of the discipline of documenting SOP manuals
7. Quality Assurance				

Lessons/Observation in Japan	South African Perspective			
	How RSA compares	Practices RSA can follow	Institutions to take lead	Opportunities/ Obstacles/ Challenges
Certification bodies JWWA and JIS • Materials standard • Inspectorate	Certification/approval body SABS and JASWIC • Materials standards SANS • Inspectorate New water works fitting	not applicable	Existing/not applicable	Limited resources for testing at certification bodies (SABS and others) High cost of testing
Municipal Approvals • Materials • Workmanship	Municipal Approvals • Materials • Workmanship	Improve municipal inspections for compliance of material and workmanship		Limited staff and skills for municipal inspections
In Japan Training is not accredited by any external body	Training is accredited by SETAs and benchmarked on the National Qualifications Framework			

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5. Conclusion

The following conclusions can be drawn about the findings of the benchmarking trip:

- Measures outlined above can and should be implemented to reduce Non-Revenue Water in South Africa
- NRW management requires long term, consistent commitment with commensurate Human Resource Development, Skills Development and adequate budget provision
- NRW better managed with a ring fenced water account
- Training requires commitment of participant organizations, employees and sector departments

6. Recommendations

NRW management training should as the start, focus on developing practical skills to tackle water losses and NRW in the municipal environment. The DWS together with municipalities and other players must pool financial resources to support the IBTC training facility and ensure it offers effective training programs. Collaboration with other training centres especially in the Metropolitan Municipalities must be enhanced.

In the South Africa municipal water sector there is a need to establish an institution like Japan Water Works Association (JWWA) which can serve as a voluntary organization that encourages municipalities to maintain at certain level of training for its staff involved with water supply and services. With time the scope of South Africa training management of the sector could be expanded to include certification and mandatory codes of best practice for the country in all aspects that involves water supply and services in the municipal sector.

There is also a need to ring fence water budgets so that greater consideration can be given to areas of non-revenue water management such as training, leak detection, preventative maintenance and general asset management.

Baseline Survey Report

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Acronyms

B/L	Baseline
CEP	Community of Expert Practice
COGTA	Department of Co-operative Governance and Traditional Affairs
DQP	Development Quality Partner
DWS	Department of Water and Sanitation
EWSETA	Energy and Water Services Sector Education and Training Authority
IBTC	Infrastructure Branch Training Centre
JICA	Japan International Cooperation Agency
LGSETA	Local Government Sector Education and Training Authority
NQF	National Qualifications Framework
NSDS	National Skills Development Strategy
NSF	National Skills Fund
NRW	Non-Revenue Water
O&M	Operation and Maintenance
OQSF	Occupational Qualifications Sub-Framework
PDM	Project Design Matrix
QCTO	Quality Council for Trades and Occupations
SALGA	South African Local Government Association
SETA	Sector Education and Training Authority
SSP	Sector Skills Plan
TA	Technical Assistance
TVET	Technical Vocational Education and Training
TOT	Training of Trainers
WCWDM	Water Conservation and Water Demand Management
WDM	Water Demand Management
WSA	Water Supply Authority
WSP	Workplace Skills Plan

Chapter 1- Outline of the survey

1.1 Purpose

To report on the Baseline (B/L) survey conducted and the analysis thereof as part of the deliverable on output 1 of the project scope.

1.2 Background and discussions

1.2.1 There was cooperation between Department of Water and Sanitation (DWS) between the periods of year 2013 to 2016. After such successful implementation a new technical cooperation was conceptualized by DWS and South African Local Government Association (SALGA). DWS partnered with SALGA to request technical support to strengthen the training Capacity of the Infrastructure Branch Training Centre (IBTC) for the benefit of the water sector. Japanese International Cooperation Agency (JICA) approved the Technical Assistance (TA) project with an endorsement from National Treasury. An agreement was signed between the water sector and JICA on 21 April 2017.

1.2.2 The Prior to the development of the project, JICA commissioned a study from 1-31 October 2016. The study was conducted in all provinces targeting selected municipalities and water boards. The purpose of the study was to identify training gaps and to determine the best suitable training intervention in dealing with water challenges facing the country Non-Revenue water was identified as a gap that require intervention. A Project on Non -Revenue water training was thus designed for implementation.

1.2.3 The Technical cooperation project will be implemented over a three-year period. JICA will support the DWS and SALGA based on the result of the B/L survey in developing an appropriate training programme on Non- Revenue Water (NRW). JICA will provide support in the form of:

- Deployment of JICA Technical Experts
- Construction and equipping of the Training Facility (Training Yard)
- Training of Trainers (TOT)
- Support for Benchmarking (In Japan and a Third Country where necessary). The objective of the technical support programme is to strengthen the IBTC's training capacity in the area of NRW.

1.2.4 Output one of the deliverables of the project is to conduct a B/L survey to all the targeted participants (sampled Municipalities and Water boards) to gather information regarding training resources, capacity building and skills development, practices, lessons to be learnt. According to the project plan the survey was supposed to start 1 September to December 2017, however due to the delay of preparation, it started in the end of September 2017 to February 2018.

1.2.5 A questionnaire was designed by the DWS, SALGA and JICA expert team to be used to collect data. Part of the visit included a short presentation for introduction purpose.

1.2.6 44 Municipalities and 7 Water Boards were sampled, both to be visited and to complete the questionnaire. All the 44 Municipalities were visited however only 24 submitted the questionnaire while 4 Water Boards were visited and only 2 submitted the questionnaire. Therefore out of total 51 participants in the survey, 26 responded and analysed which makes **51%** of the responses analysed.

1.2.7 All the questions of the survey were analysed, and the analysis will be able to give some pictures and the information need to make informed conclusion as per Output 1 "Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities" of Project Design Matrix (PDM) milestone. Further to that the Municipalities were categorically analysed, and Classification of Municipalities is as below:

Table 1-1: Classification of Municipalities

Metro	A	- Largest cities or metros - Metropolitan municipalities
LM	B1	- Secondary cities; those with next largest budgets - Local municipalities with a large town or city as its urban core
	B2	- Municipalities with a large town as core - Local municipality with a medium town or towns as its urban core
	B3	- Relatively small population, significant proportion of urban population, but with no large town as core - Local municipality with a small town or towns as its urban core
	B4	- Municipalities which are mainly rural with, at most, 1 or 2 small towns - Local municipality with no urban core
DM	C1	- DM: District municipalities that are not WSAs
	C2	- DM: District municipalities that are WSAs

(Source: DWS)

1.3 Period of the Survey

The Survey was conducted during the period below;

28 September 2017 – February 2018

1.4 Targets of the Survey

Targets of the Survey consists of the two organisations below;

1) 44 municipalities which feature the Water Supply Authorities (WSAs)
2) 7 water boards

1.5 Methods of the Survey

Methods of the Survey consists of the two approaches below;

1) Visit Survey (for 44 municipalities and 4 water boards) including questionnaire
2) Literature Survey

1.6 Attribute Data and Credibility of the Answers

Attribute Data (Collection ratio and other information on answers from municipalities)

As explained in the clause 1.2.6, out of total 51 participants in the survey, 26 responded and analysed which makes **51%** of the responses analysed. In case of municipalities, 24 responses out of 44 targeted municipalities are not enough to evaluate the current status of all the municipalities in the country with consideration of the total number of municipalities with WSAs which is 152. Thus the results of the survey may not reflect the exact opinions or conditions of all the municipalities. However, some of collected data and information are explained the challenges and actual status each municipality is facing in

detail and can be referred to the future programmes in the project and also to other municipalities with same problems.

The summary of the categories analysed are as follows:

Category A: Metros

Four (4) out of 8 responded which makes **50%** average of Metros' responses. Actually they are under staffed since they are serving a large population. They have attended some training related to water reticulation and process which was offered by private training providers. Their budget is centralised, which is difficult to allocate specifically for the Water Section, except for 1 metro (Tshwane) since they have a separate academy, so they also have separate training budget.

In general there is willingness to send nominees for both of the TOT and other trainings They are experiencing physical/real losses. The Metros are generally far better than any other category and at bit more advantage stage in dealing water use efficiency management and related issues.

Category B1

Ten (10) out of 17 responded which makes **59%** response rate. This is a fairly reasonable respond rate to make conclusion on this category. They are also under staffed to a population that they are servicing. Average Human Resources Risk rating is above 40 %, which places the B1 Municipalities under medium risk category, taking note that the analysis is based on total number of technical posts. Some level of Water Demand Management (WDM) training attended, though not sufficiently addressed and private training providers were mostly used. The budget is being centrally controlled which on average makes it difficult to know the exact training budget allocation although some expenditure is being regularly incurred.

There is willingness to send nominees both at the TOT and trainee level. Experiencing Real losses, Cost Recovery, Meter Audits, water balance, Leak detection and repairs, pressure Management, pipe replacement problems came top as common challenges though some differs. This is the category with huge challenges around human resources development.

Category B2

Two (2) out of 5 responded which makes **40%** response rate. The poor response rate at this category makes it difficult to draw a representative conclusion of this category B2; however similar challenges have been observed. There were some levels, National Qualification Framework (NQF) Level 2 to 4, of training attended which are also provided by external providers.

Category B3

Four (4) out of 6 responded which makes **67%** response rate. This category is extremely under staffed to be servicing the population of such magnitude. Average Human Resources Risk rating is <30 %, which places the B3 under high risk category, taking note that the analysis is based on total number of technical posts. There is willingness to send nominees both at the TOT and trainee level.

Category C2

Four (4) out of 8 responded which makes 50% response rate. Average Human Resources Risk rating is >100 %, which places the B3 under low HR risk category. However, the rating is based on total number of technical posts, which includes not only in the WSA but all the departments and divisions (quality, quantity, waste disposal etc.).

Chapter 2 – Results of the Survey

2.1 Results of the survey

PART1:
HUMAN RESOURCES DEVELOPMENT IN WATER SECTION / DEPARTMENT

1.1 Current Situation of Water Section/Department/Unit

Question 1.1.1 Organisational Structure related to water Section / Department

(1) Number of staff in the water supply section / department:
(2) Organizational Structure of the water section / department:

Class A: In terms of number of staff in water related sector, eThekwini stands out from other municipalities with 2,410 staffs, whereas, the number of employees at other three municipalities, Buffalo city, Johannesburg and Tshwane, is between 296 to 589.

Class B1-3 to C2: The number of staff at Class B1-3 municipalities varies ranging from 15 (Victor Khanye) to 367 (Sol Plaatje) and it depends on the situation each municipality is facing. As for Class C municipalities, the number of staff ranges from 502 (OR Tambo) to 839 (Amathole) which is much larger than that of B1-3 municipalities. The numbers are supposed to include technicians and labours that belong not only to the water related section but to the entire infrastructure department.

Water Boards: 275 (Bloem Water) and 200 (Magalies Water).

According to organograms submitted from the municipalities, structures of water related section/departments come in a variety of shapes. They are, in general, organisationally located under social/public services, infrastructure or utilities sections, and composed of administration and engineering division.

For the detailed information on organisational structure of municipalities, refer to the CHAPTER 4 "APPENDICES".

Question 1.1.2. Technical Level of the Water Section / Department

(1) Number of personnel in the water section / department
(2) Number of the qualified personnel in the water section / department
(3) Does your WSA have a dedicated unit dealing with WCWDM or NRW reduction or leakage detection?

Class A: Number of personnel in Water Supply Authority (WSA) ranges from 37 (Buffalo City) to 544 (Johannesburg). In case of Johannesburg, out of 544, 344 are general workers whereas only 14 technicians out of 37 are included in the WSA of Buffalo City. However, according to the employee list submitted from Buffalo City, qualified personnel (=Personnel who officially qualified as plumbers, process controller and other technical positions) in the water section/department is about 300. Tshwane also has about 400 qualified personnel (Process control: 49, Water quality: 16, Water reticulation: 69, others

such as finance, social and planning: 274). Thus, in case of Metro Municipalities, around 300 to 400 personnel are supposed to be engaged in water supply related sections.

Class B1-3 to C2: Comparing with the current situation of Metro Municipalities, there are fewer personnel in the WSA in Class B and C municipalities, ranging from 4 (Umsobomvu) to 544 (Ugu). However, Ugu includes 54 drivers and 269 general workers which might not engage in WSA exclusively. Results also show that most of municipalities secure the qualified personnel in conceivable categories such as process control, water reticulation, water quality and plumber. Notably Amathole possesses 839 qualified personnel (Process control: 172, Water quality: 71, Water reticulation: 564 and other: 32) and OR Tambo also boasts of 448 qualified personnel (Process control: 180, Water quality: 7 and Water reticulation: 261).

Water Boards: Bloem Water has 24 staffs and 89 qualified personnel (Process control: 55, Water quality: 6, Safety-Health-Environmental and Quality: 4, Admin & Finance: 8, Wellness: 1, Maintenance Specialists: 2 and Artisans 13).

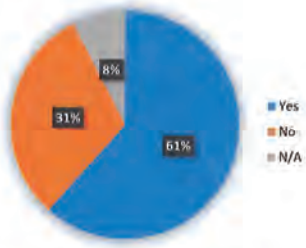
Lastly, on the whole, there are a few municipalities that have a dedicated unit dealing with Water Conservation and Water Demand Management (WCWDM) or NRW reduction or leakage detection. In some municipalities, the work is covered under operations and maintenance unit or the future plans on the WCWDM and NRW is in progress.

1.2 Human Resources Development in Water Section/Department

Question 1.2.1. Basic Information about the training programme related to Water Section / Department

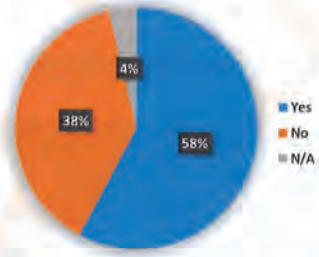
(1) Do you have a "training unit or the person in charge of training" in the water section / department?
(2) Do you have a "training programme" for personnel of water section / department?
(3) Do you have a "human resources development system" in the water section / department?
(4) How do you keep/enhance motivation of staffs in the water section / department?

All the Class A municipalities have a training unit or the person in charge of training in the WSA. On the other hand, there are a few Class B to C municipalities that possess the unit or the person in charge inside the WSA, and the human resource departments in most of Class B to C municipalities are responsible for training instead.



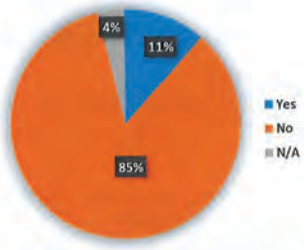
(Source: Project Team)
Figure 2-1: (1) Do you have a "training unit or the person in charge of training" in the water section / department?

Also all the Class A municipalities have a training programme respectively, whereas only half of respondents from Class B to C municipalities say 'No (=do not have a training unit or person in charge of training)'. Due to the lack of budget for training, it is difficult for municipalities in Class B to C to plan for training programme. Although some municipalities in Class B to C have the programme, realisation of the programme heavily depends on the subsidy or financial support from outside organisations such as Local Government Sector Education and Training Authority (LGSETA) and DWS.



(Source: Project Team)
Figure 2-2: (2) Do you have "training programme" for personnel of water section / department?

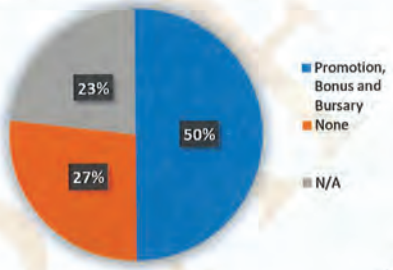
Regarding the human resource development system in the WSA, there are a few municipalities that have the internal system of human resource development. As mentioned above, especially in Class B to C municipalities, human resource development department takes charge of the whole field of training. In addition, some municipalities also replied that human resource development is based on the individual training needs, and it means human resource development is a little difficult to systematise.



(Source: Project Team)

Figure 2-3: (3) Do you have a "human resources development system" in the water section / department?

Finally, a third of respondents (excluding the responses of N/A) mentioned that there is no such incentives to motivate staffs in the WSA. On the one hand, incentives the rest of two third municipalities take are; promotion, wage rise, performance bonus and bursary.



(Source: Project Team)

Figure 2-4: (4) How do you keep/enhance motivation of staffs in the water section / department?

Question 1.2.2. Outline of Training Course related to Water Section / Department in the last 3 years

(1) Name of the training course related to water
(2) Name of Training Provider
(3) Target of the Course
(4) Accredited Course or Not?
(5) If yes, please state the level of qualification
(6) Number of Participants enrolled
(7) Number of Participants completed
(8) Fund Source of the Course

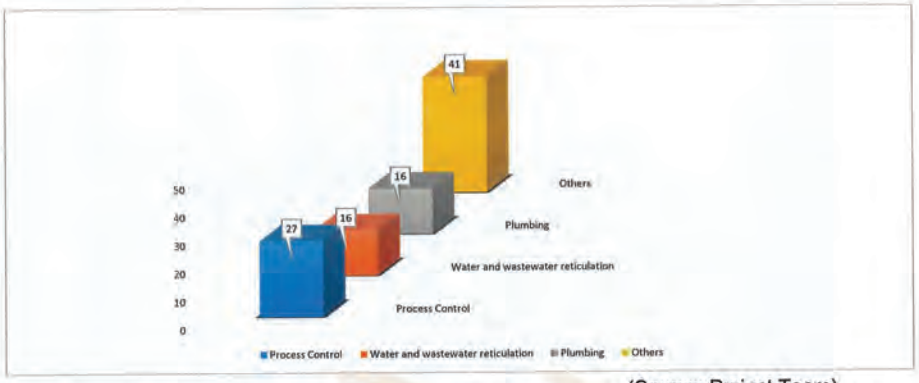
Table 2-1 and Figure 2-5 show the areas of training courses in which all the municipalities and water boards took part in the last 3 years by municipality class.

Table 2-1: Areas of Training Courses Municipalities participated in the last 3 years

Class	Areas or Course Municipalities participated
Class A	1. Plumbing (8) 2. Process control (5) 3. Water and wastewater reticulation (4) 4. Others (11) Remarks; ● "Welding" is supposed to be plumbing of steel pipes, thus it shall be added up to the "Plumbing" ● Others: Laboratory system, Crane controller, Hazardous chemical handling and Water service hand, etc.
Class B1	1. Water and wastewater reticulation (7) 2. Plumbing (6) 3. Process control (6) 4. Others (24) Remarks; ● "PRV training" shall be included in "Water and wastewater reticulation". ● Others: Vending training, Meter operating and reading, Laboratory system, Internal audit, Atomic absorption, PRL, Chlorine handling and transportation, First aid and Sample training, etc.
Class B2	1. Process control (3) 2. Plumbing (1) 3. Others (1) Remark; ● Others: Safe handling of chlorine
Class B3	1. Process control (6) 2. Plumbing (2) Remarks; ● "Water and wastewater treatment operation" shall be regarded as "Process Control". ● "Pipe fitting" shall be regarded as "Plumbing" ● "Water and wastewater treatment process" shall be regarded as "Process control".
Class C2	1. Water and wastewater reticulation (3) 2. Plumbing (3) 3. Process control (2) 4. Others (5) Remarks; ● "Mechanical training on Bernard valves and pressure reducing valves" shall be included in "Water and wastewater reticulation". ● Others: Medium voltage switching, Telemetry training, Implementation tool set, GCC2015 3rd edition and Trade test
Water Board	1. Process control (5) 2. Water and wastewater reticulation (2)

Class	Areas or Course Municipalities participated
	Remarks; ● "Pump station course" shall be regarded as "Water and wastewater reticulation" ● "Water treatment purification" shall be regarded as "Process Control".

(Source: Project Team)



(Source: Project Team)

Figure 2-5: Areas of Training Courses Municipalities participated in the last 3 years

As shown in the table above, the main areas of the training course are centralised the 3 representative branches of the learning as follows;

1) Process control (22, in total)
2) Plumbing (20)
3) Water and wastewater reticulation (14)

In general, since municipalities do not own their water treatment facilities, they tend to choose trainings of "Plumbing" and "Water and wastewater reticulation", whereas water boards often attend the training course of "Process control" because of their function.

Then, summary of training providers shall be referred to the table 2-2 below;

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Table 2-2: List of Training Providers

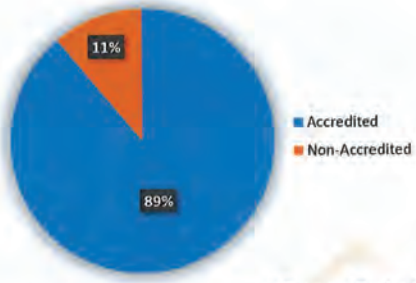
#	Name	Province	Course	Municipality Participated
1	East Cape Training Centre	EC	Plumbing	Amathole
2	Border Training Centre	EC	Plumbing	Amathole
3	Nkayelo Training and Conferencing LTD.	GP	Wastewater Treatment process and technology training	Baffalo
4	Mahube Training and Development	LP	Water and Wastewater Process controller learnership, Water Reticulation	Baffalo, Matjhabeng, Lephalale, Govan Mbeki, Mbombela, Victor Khanye
5	CSV water Consulting Engineers (Pty) Ltd	GP	SANS 214/004, Sans241:- implementation tool set	Baffalo, Ugu
6	The South African National Accreditation System	GP	Laboratory system	Baffalo
7	Olifantsfontein Artisan Academy	GP	Plumbing Pre Trade Test	Baffalo
8	Links Consulting (Pty) Ltd	GP	Best Practice in validation methods for Microbiology Laboratory	Baffalo
9	Services Sector Education and Training Authority	GP	Pump operating and maintenance	Baffalo
10	Lentle Performance Improvement Development and Consulting	GP	National Certificate: Water and Waste water process control	Metsimaholo
11	LEPS Training and Consultants	NW	FET: Plumbing	Metsimaholo
12	The Water Academy	WC	Water and Waste water process control, Water reticulation,	Metsimaholo, eThekwini, Ugu
13	ImproChem	GP	Safe Handling of chlorine	Moqhaka
14	Tshwane Leadership and Management Academy (in-house)	GP	Basic Welding, Truck Mounted Crane, Overhead Crane Pendant Controller, Hazard identification and risk management, Plumbing Level 1, Tractor loader back hoe, Truck Mounted Crane, Hazardous chemical handling	Tsuwane
15	Sandra	?	Plumbing	sThekwini
16	Artisan Training Institute Ltd.	GP	Fitting training N1-N2 N3 Trade test.	Ugu
17	K2014095413SA (Pty)Ltd	?	Medium Voltage switching	Ugu
18	JOAT Group	KZN	Telemetry training	Ugu
19	Construction Resource Development Centre	KZN	Trade test	Ugu
20	WRP Engineers	GP	PRV Training	Govan Mbeki
21	White River Technical College	MP	Engineering N1 & N2 Water and Wastewater Treatment.	Victor Khanye
22	Ekurhuleni Artisans and Skills College	GP	Plumbing, Pipe fitting	Victor Khanye
23	NOSA	GP	Rivision of ID 15034 Work in confined spaces on construction sites, Rivision of ID 260139 Undertake an emergency rescue operation in confinced space, First Aid	Sol Plaatje, JB Marks
24	Dinaledi Enterprise	?	Water &Waste- Water Process control	Matlosana
25	Tshepang Lentswe	GP	Chlorine Handling & Transportation	Matlosana
26	University of Pretoria	GP	Water Quality & Effluent treatment Control Management	Matlosana
27	Elective Training Institute Enterprise CC	NW	OHS	Matlosana
28	Mbuso Management Solution	GP	Pipe laying	Matlosana
29	Bonang Training and Develoment	GP	Plumbing	Matlosana
30	LNT Trading	?	Plumbing	Matlosana
31	Municipal Infrastructure Support Agent	GP	Ventersdorp Water Plant	JB Marks
32	NCP Chlorchem	KZN	Safe Handling of Chlorine	JB Marks
33	DWS	GP	SANS 241/2015 training, Pump Station Course	JB Marks, Bloem Water
34	Khulanonke	GP	Water and waste water process control level 02 and 03	Bloem Water

(Source: Project Team)

Naturally municipalities tend to choose training providers because they are unable to implement skills and capacity building on their own due to limited training resources and capacity.

Most of the participants of the trainings are artisan or technician level who work at sites such as plumber, process controller, serviceman and electrician. However, only 4 Class B1 municipalities, Mbombela, Mogale city, Matlosana and Kouga, send the combination of junior and senior staffs, in other words, artisan and management or administration level to each training course.

In addition, 89% of the total training courses (72 out of 80 training courses, excluding N/A) are accredited. 11% shared non-accredited training courses however; their themes are quite specific (eg. Pollution and chemical analysis) and some training courses are indeed conducted by manufacturers for their after-sale services.



(Source: Project Team)

Figure 2-6: Accredited Course or Not?

Although satisfactory number of responses is not received, answers for (5) to (8) of question 1.2.2 are summarised as follows;

Table 2-3: Summary of the results of training related questions by municipality class

Class	Level of Qualification	# of Participants Enrolled	# of Participants Completed	Fund Source of the Course
Class A	NQF 2 to 5	1 to 100	1 to 100	LGSETA and Municipality
Class B1	NQF 2 to 6	1 to 41	1 to 41	LGSETA, EWSETA, Municipality and NSF
Class B2	NQF 2 to 4	2 to 32	2 to 32	N/A
Class B3	NQF 1 to 4	2 to 18	2 to 18	LGSETA, DWS, Department of Co-operative Governance and Traditional Affairs (COGTA) and Municipality
Class C2	NQF 3 to 4	50 to 97	50 to 97	LGSETA
Water Board	NQF 1 to 3	11 to 50	11 to 50	EWSETA and DWS

(Source: Project Team)

As shown in the table above, major level of qualification is between NQF 1 to 5 which means the target of training courses seems to be junior and mid-level staffs. It is also notable that Class A municipalities tend to bear the costs for training by themselves as they can afford to do that. For instance, according to the reply, eThekwini (A) has never been received the subsidy or other financial support for their trainings from outside organisations such as the LGSETA and Energy and Water Services Sector Education Training Authority (EWSETA) but paid their own expenses on all the trainings in the past 3 years. Meanwhile, Class B to C municipalities tend to heavily rely on the funding from outside organisations such as the LGSETA.

Question 1.2.3. Training Budget related to Water Section / Department in the past 3 years

(1) Total Budget for Training Programme (Courses) related to Water Supply
(2) Actual Expenditure for Training Programme (Courses) related to Water Supply

Overall, since training budget for training programmes or courses related water supply is allocated in human resource related sections, and most of respondents are assumed to belong to the WSA and are not able to clarify the budget. Therefore, only a few municipalities submitted their budget and actual expenditure for training course. Here are examples;

Table 2-4: Total Budget and Actual Expenditure for Training Programmes (Courses)

Class	Municipality	Total Budget for Training Programme	Actual Expenditure for Training Programme
Class A	eThekwini	(2016-2017) R 4 666 277.00 (2015-2016) R 5 051 580.00 (2014-2015) R 5 204 600.00	(2016-2017) R 2 936 900.00 (2015-2016) R 4 874 781.00 (2014-2015) R 3 204 741.00
Class B1	Matlosana	(2016) R 1 000 000 (2015) R 500 000 (2014) R 500 000	(2016) R 702 000 (2015) R 472 500 (2014) R 370 000
Class B2	Metsimaholo	(2016) R 1 423 000 (2015) R 1 367 350 (2014) R 1 131 600	N/A
Class B3	Victor Khanye	(2016) R 150 000 (2015) R 100 000 (2014) R 90 000	(2016) R 175 000 (2015) R 102 000 (2014) R 89 000
Class C2	Amathole	(2014) R 167 296.00	(2014) R 167 245.00

(Source: Project Team)

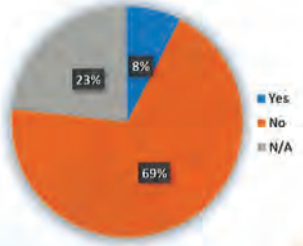
Question 1.2.4. Facilitator/Assessor/Moderator related to Water Section / Department

(1) Do you have facilitator/assessor/moderator related to water supply in the water supply section / department?

(If yes, please answer the question below)
1. Number of Facilitator and his/her Specialty Area
2. Number of qualified Assessors and his/her Specialty Area
3. Number of qualified Moderators and his/her Specialty Area
4. Days or hours facilitator/assessor/moderator engaged in the Training Course in a year

(2) List the Name of outsourced enterprises and the respective specialties

Since almost all the municipalities hire the outsourced firms for training on their employees, only two municipalities, Polokwane (B1) and Moqhaka (B2), among all the respondents have facilitator, assessor or moderator related water supply in the WSA or inside the organisation.



(Source: Project Team)

Figure 2-7: (1) Do you have facilitator/assessor/moderator related to water supply in the water supply section / department?

For instance, the facilitator, assessor or moderator in the WSA of Polokwane (*the answer did not mention the number of qualified person and their speciality area) has the expertise and knowledge on water reticulation, plumbing and superintendent. On the other hand, the WSA of Moqhaka has facilitators of water treatment and water reticulation, and assessors of process control, water reticulation, plumbing, water quality and supervision. (*The answer did not mention in the number of qualified person in the WSA) Both the facilitators and assessors engage 40 hours in a year for the training course.

Major outsourced enterprises for the training courses in each municipality are; The Water Academy, University of Pretoria, Bonang Training and Development, Mahube Training and Development, Dinaledi Enterprise and Korone Consulting Engineers, and also major specialities of the enterprises are; water and wastewater reticulation, process control, water quality, mechanical and electrical Instrumentation, plumbing work, fitter and turners, welding and Design.

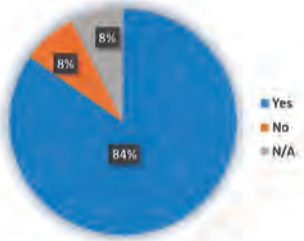
It is notable that Sekhukhune (C2) outsourced some public organisations such as water board (Lepelle Northern Water) and another municipality (Dr JS Moroka Municipality) for the training of bulk purification and distribution. This means that there could be a possibility that the rest of municipalities will be able to build a good relationship with water boards and other municipalities in terms of technical assistance.

Question 1.2.5. DWS-IBTC has been identified as a central point for provision and coordination of NRW training

(1) Can your WSA provide suitable nominee(s) for Training of Trainer (Facilitator/Assessor/Moderator) on NRW training to be held at IBTC?
(2) Can your WSA send suitable trainee(s) on NRW training to be held at IBTC.
(3) If your answer(s) is yes for the above, can your WSA send him/her to the Training of Trainer and training for a certain period (e.g. one/two/three weeks)?
(4) What areas do your WSA want to address through NRW training?

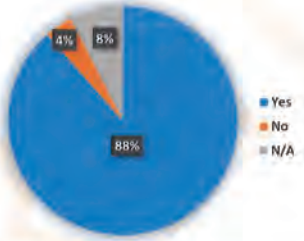
In general, all the respondents, except a few municipalities and water boards, can provide suitable nominees for both of Training of Trainers (TOT) and trainees on NRW training to be held at the IBTC. This is understandable taking into consideration the lack of sufficient personnel. However, most of local municipalities take thought for expenses to participate

the training as the funding from the LGSETA, the main fund source for human resource development of municipalities, normally allocates only for tuition fee of the training, and it cannot cover transportation and accommodation expenditures. According to the results of interview surveys, some of the municipalities complain inconvenience of the LGSETA fund for training and call upon the LGSETA to include at least transportation and accommodation costs in the budget.



(Source: Project Team)

Figure 2-8: (1) Can your WSA provide suitable nominee(s) for Training of Trainer (Facilitator/Assessor/Moderator) on NRW training to be held at IBTC?



(Source: Project Team)

Figure 2-9: (2) Can your WSA send suitable trainee(s) to be held at IBTC?

Not many respondents commented on the desired period of training courses, it is, however, expected that most of municipalities and water boards assume the training period between 1 to 3 weeks. For instance, 4 responses are as follows; Mbombela (B1) – 1 week, Moqhaka (B2) – 3 weeks, Lephalale – 3 weeks and Bloem Water – less than 1 week.

The areas or course contents in the NRW trainings for the WSA to mitigate the current situation is summarised in the table 2-5;

Table 2-5: Summary of the areas or course contents the WSA requests for NRW training

Class	Areas or Course Contents Required (listed in no particular order)
Class A	1. Water and wastewater reticulation 2. Pressure management 3. Leak detection 4. Water consumer awareness 5. Improvement of quality of repairs 6. Implementation on new technology 7. Improve quality of repairs 8. Internal staff capacity building
Class B1	1. Water losses 2. Cost recovery 3. Meter audits 4. Water balance 5. Water conservation 6. Water demand management 7. Plumbing 8. Infrastructure operation and maintenance 9. Assert management 10.Dealing with illegal connections 11. Leak detection 12. Pressure management 13. Zone management 14. Community education/awareness 15. Water leaks at household 16. Water purification losses 17. Logging 18. Project management 19. Collaborative water planning 20. Urban water design 21. GIS and water resources mapping
Class B2	1. Leakages 2. Billing 3. Meter reading 4. Pressure (control management?) 5. Artisans (Fitter) 6. Process controllers 7. Design 8. Water quality
Class B3	1. Revenue enhancement 2. Leak detection and solving 3. Water balance 4. Meter reading and meter repairs
Class C2	1. Illegal connections 2. Water balance 3. Meter replacements and retrofitting of internal plumbing 4. Leakage detection, 5. Pressure management 6. Zoning/Sectorisation 7. Water loss control

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Class	Areas or Course Contents Required (listed in no particular order)
	8. Social: Water use efficiency, education and awareness 9. Revenue enhancement plan and strategy
Water Board	1. Infrastructure maintenance 2. Leak detection 3. Quantification

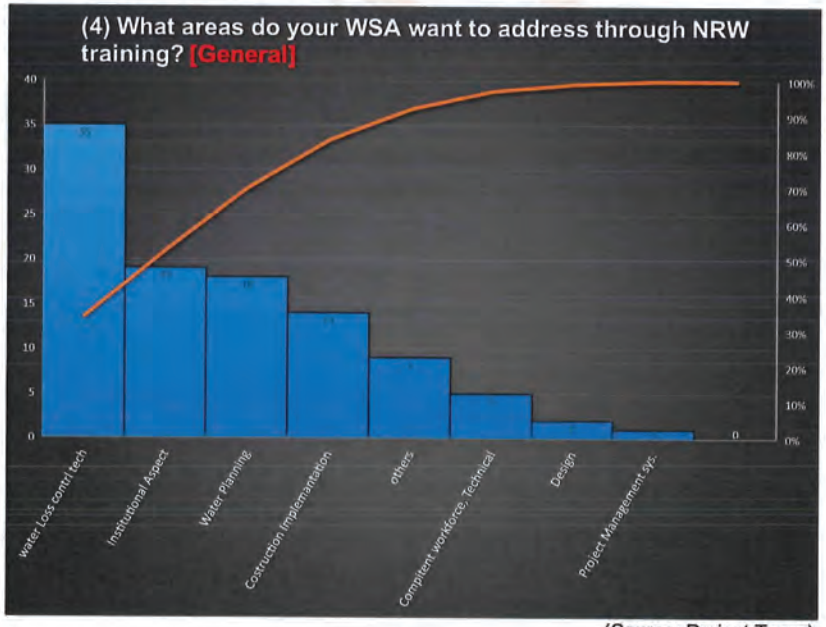
(Source: Project Team)

Every municipality have their specific training needs which are based on the current capacity on components contributing to the NRW, however, most of the respondents feel the necessity to complement the skills and knowledge in the areas of water loss control technique such as;

Water reticulation (network), Leak detection, Process control, Pressure management, Water balance, Zone management, Meter audits and plumbing.

In addition to the above technical areas, Class B1 to 3 municipalities indicate the importance of social development such as public education and awareness for the prevention of human negligence such as illegal connection, theft, vandalism and non-payment of water charge.

Table 2-5 can be summarised in the figure 2-10.



(Source: Project Team)

Figure 2-10: Summary of the areas or course contents the WSA requests for NRW training (General)

Figure 2-11 in the next page also compiled the same data into the specific 7 categories; Institutional aspect, Construction implementation, Water loss control technique, Competent workforce and technical, Project management, Design and Water planning. Although requirements for the training vary in many aspects including both of hard and soft components, it is, at the very beginning, advisable to prioritise the areas of understanding the present conditions, strategic plans and project plans since the justification for the respective project is always required.

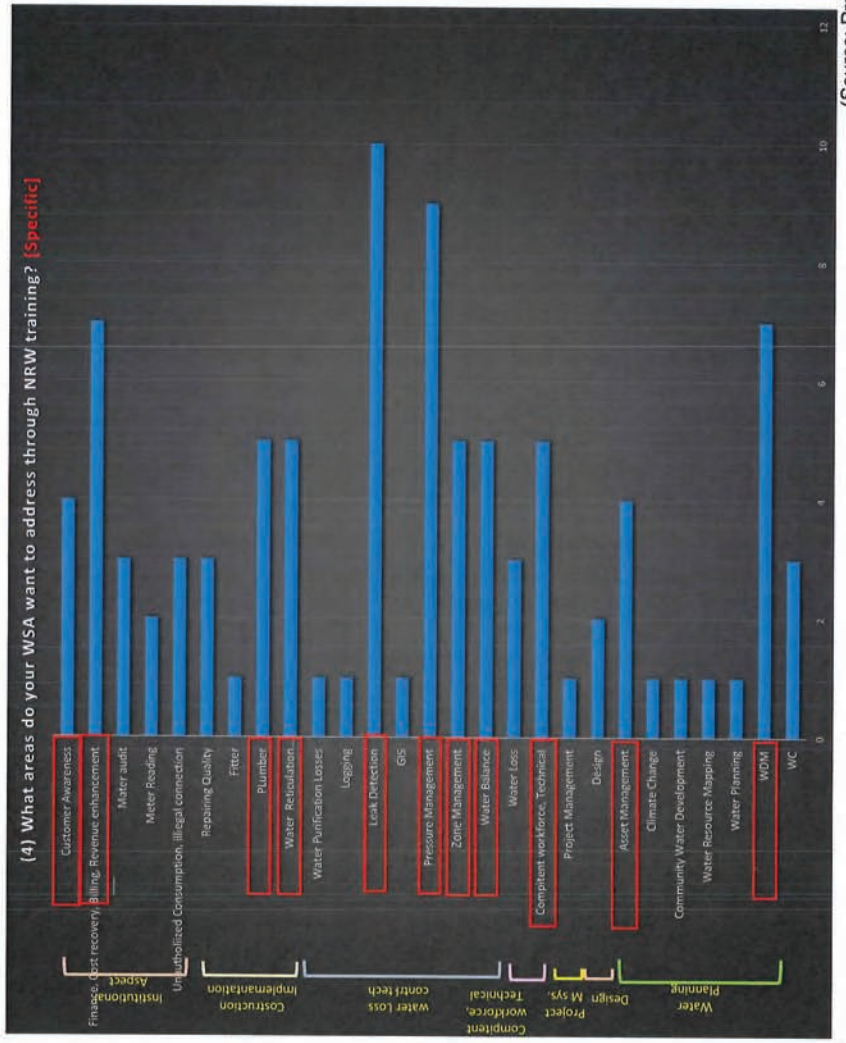


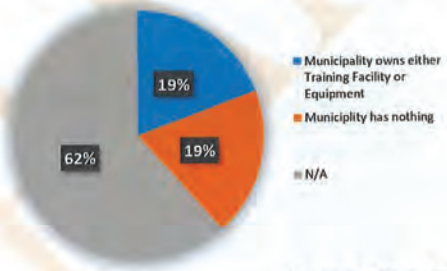
Figure 2-11: Summary of the areas or course contents the WSA requests for NRW training (Specific) (Source: Project Team)

Question 1.2.6. Training Facility and Equipment related Water Section / Department

(1) Name
(2) Capacity
(3) Year of Installation or Procurement
(4) Accredited or not
(5) Training Purpose
(6) Utilization Situation (e.g. frequently utilized, sometimes, or not at all)

2 Class A municipalities Tshwane (*Tshwane did not answer this question, however the existence of internal training centre "Tshwane Leadership and Management Academy" is confirmed later) and eThekwini owns both training facility and equipment related to water supply. Buffalo city is in possession of the equipment, whereas Johannesburg has only the training centre with no equipment. Among the above 3 training centres, only Tshwane's training centre is accredited.

As for the Class B to C municipalities and water boards do not possess neither training facilities nor equipment since the trainings for their employees are heavily relied upon the outsourcings. Only Sol Plaatje (B1) has a small room to be used for the internal training, and Mbombela (B1) and Ugu (C2) possess a leak detection equipment.



(Source: Project Team)

Figure 2-12: Training facilities or Equipment related Water Section / Department

Question 1.2.7. Training Needs related to Water Section / Department

(1) What kinds of training are needed for your water section / department? Or, which specialty area(s) does your water section / department want to strengthen?
(2) Why did you select the above area(s)?
(3) Requests and/or suggestions regarding training of municipal personnel related to water supply, if any
(4) Was the training course(s) your water supply section / department prepared or participated in good? Or bad?

Trainings needed for the WSAs is summarised in the Table 2-6;

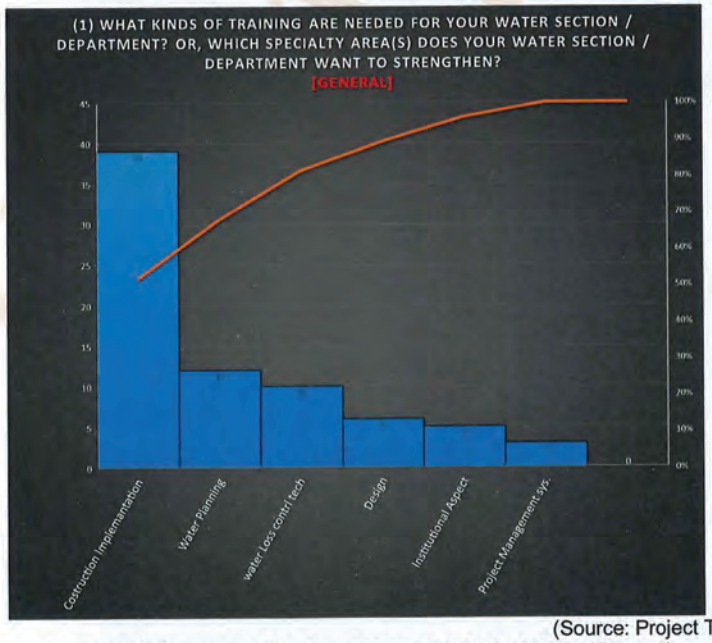
Table 2-6: Summary of the trainings needed for the WSAs

Class	Trainings Needed (listed in no particular order)
Class A	1. Water and wastewater reticulation 2. Process control 3. Plumbing 4. Water quality 5. Supervision 6. Maintenance training 7. Fitting and Turning 8. Electrical 9. OHS compliance training 10. HDEP installation and fusion welding
Class B1	1. Plumbing 2. Leak detection 3. Pressure management 4. Zonal Management, 5. Water and waste reticulation 6. Operation and Maintenance 7. Water quality 8. Logging 9. Design and Planning 10. WCWDM 11. GIS and Water resources mapping 12. Community water development 13. Wastewater treatment process 14. Basic Health and Safety principles in and around the Workplace. 15. Undertake an emergency rescue operation in confined space 16. TLB Operator 17. Operation for trucks
Class B2	1. Process control 2. Water reticulation 3. Plumbing 4. Supervision 5. Water balancing 6. Design 7. Water quality
Class B3	1. Process control 2. Water Reticulation 3. Plumbing 4. Water Quality 5. Design 6. Supervision 7. Product awareness 8. Installation process 9. Monitoring systems
Class C2	1. Leak detection 2. Plumbing 3. Process control 4. Water quality

Class	Trainings Needed (listed in no particular order)
	5. Design 6. Supervision 7. Operation and maintenance 8. Project management 9. Education and awareness 10. Social facilitation 11. By law enforcement 12. WCWDM 13. Asset management 14. Project management 15. Revenue enhancement management
Water Board	1. Process optimization 2. Infrastructure maintenance 3. Water meter management

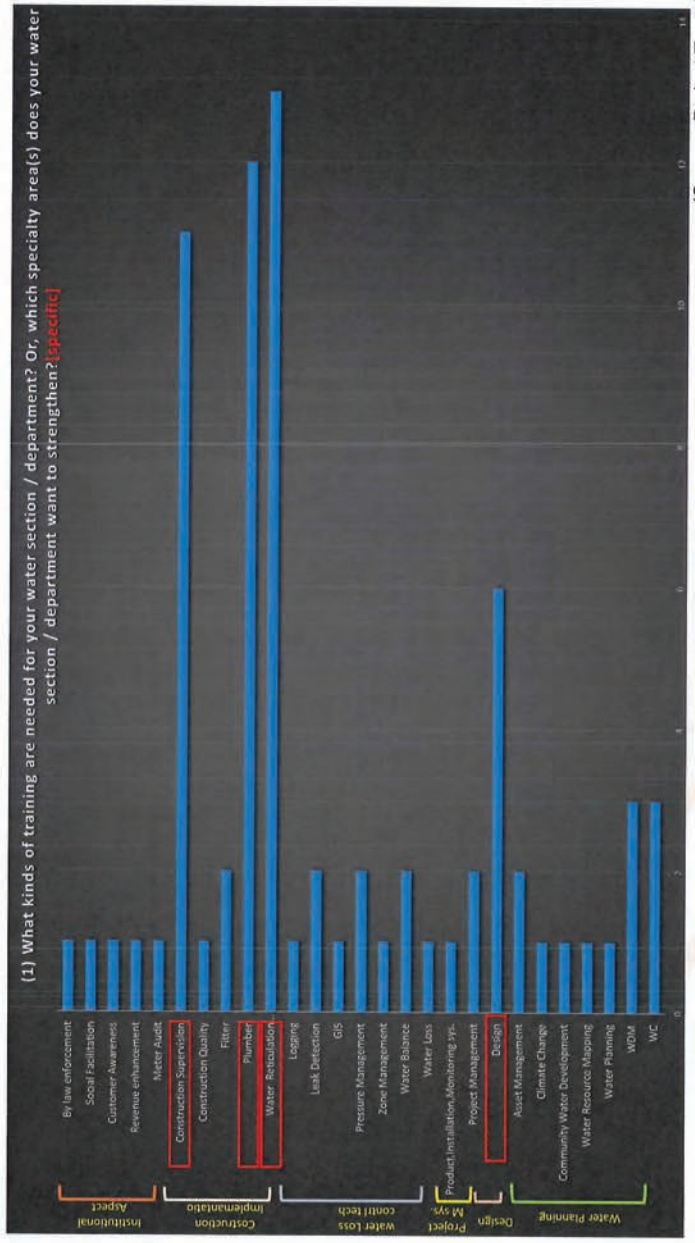
(Source: Project Team)

As shown in the above table, overall there is no appreciable difference among the responses from the municipalities. However, to stretch a point, while Class A municipalities need trainings for general activities of water supply such as water wastewater reticulation and process control, Class B to C municipalities are more NRW-oriented as many of the municipalities point out the necessity of leak detection, plumbing and maintenance trainings. Table 2-6 can also be summarised in the Figure 2-13 and 14.



(Source: Project Team)

Figure 2-13: Summary of the trainings needed for the WSAs (General)



(Source: Project Team)

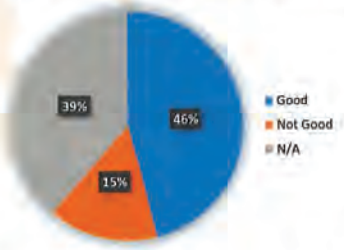
Figure 2-14: Summary of the trainings needed for the WSAs (Specific)

From the different perspective, the two figures show that construction engineering and its supervisory technique are indicated as the most needed training for the WSAs. In this case, it is assumed that many municipalities enumerate their needs in order to compensate the lack of technical skill and knowledge to be used in the daily routine. It is understandable and indispensable in short-term basis, however, municipalities also need to make a decision for the future training needs in a middle and long-term viewpoint.

Moreover, the reason why Class A municipalities indicate the areas is to increase qualified personnel since substantial experienced staffs retired from the municipalities and they need to make up for the vacancy. On the one hand, the current status of the Class B to C municipalities is more serious than that of Class A municipalities. In case of Class B to C municipalities, there is an urgent need to combat the NRW and water losses, and it is, thus, imperative for the municipalities to cultivate skilled personnel, in particular, plumbers and other technicians. Finally the answer form Ugu (C2) is worthy of mention as they asked all the employees in the WSA to submit their training needs on a periodic basis.

On the whole, any requests or suggestions concerning the trainings for municipal personnel in the WSA are almost same as the answers of (1) and (2) of the question 1.2.7. Especially JB Marks (B1) and OR Tambo (C2) propose that the training should be divided into some phases and some groups as the two municipalities are not able to send all their personnel at once for long time. Magalies Water also insisted that the training should be as practical as possible.

In regard to the evaluation of the past trainings in which all the municipalities participated, only 16 responses out of 26 are received, then 4 responses out of the 16, eThekwini (A), Sol Plataatje (B1), George (B1) and Kouga (B3) express their dissatisfaction on the past trainings. The rest of 12 responses show that the municipalities are satisfied with the trainings and the participants gain the expected knowledge and skills from the trainings.



(Source: Project Team)

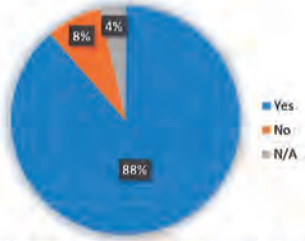
Figure 2-15: Was the training course(s) your water supply section / department prepared or participated in good? Or bad?

PART2
TECHNICAL NON-REVENUE WATER IN MUNICPALITY

Question 2.1 Water Balance Data and Analysis

(1) Does your WSA analyse water balance periodically?
(2) Through water balance analysis, what is a main component of NRW?

Almost all the municipalities, except 1 municipality in B1 Class, check and analyse water balance in a monthly basis.



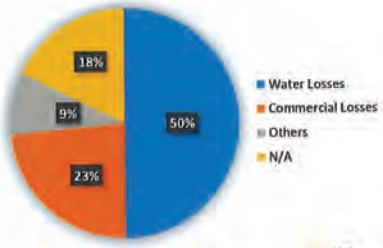
(Source: Project Team)

Figure 2-16: (1) Does your WSA analyse water balance periodically?

Judging from the water balance analysis in each municipality, the main component of NRW in each classification is as follows;

Class A: Water losses due to leakage, Consumers that are not on the billing database, Unbilled unmetered stands, Meter inaccuracy, Illegal connection and Background system losses.
Class B1: Distribution and commercial losses, Water demand management and Unbilled for the rural areas.
Class B2: Ageing infrastructure
Class B3: Ageing infrastructure, Supply of Water to farms and informal settlements, Illegal connection, Lack of water meters and Water losses
Class C2: Illegal connection, Leakage and unauthorised water usage
Water Boards: Leakage and Ageing infrastructure

As shown above, while Class A municipalities and Water Boards mainly indicate physical loss or technical loss such as leakage and meter inaccuracy, Class B to C municipalities comparatively have difficulties in human factors such as illegal connection, theft and unauthorised usage. This means that the awareness activities or public educations in local communities are required to heighten people's consciousness or awareness towards water supply.



(Source: Project Team)

Figure 2-17: (2) Through water balance analysis, what is a main component of NRW? (Remarks; All the physical losses such as leakages in trunk main and distribution network are categorised in "Water losses" and the losses caused by human factors such as non-payment and misleading of metres are also classified in "Commercial losses".)

Question 2.1.1 Water Sources

(1) Bulk Supply from Water Board(s)
(2) Surface Water (Water Treatment Plants, etc.)
(3) Ground Water (Boreholes, Protected Wells, etc.)
(4) Others (Please specify the water sources)

As noted above, most of municipalities receive treated water from water boards nearby. The amount of water each municipality receives is, thus, depends on served population and capacity of water supply facilities in each municipality. Answers from municipalities are summarised as follows (unit: million m3/annum, annual actual production, for detailed information, refer to the CHAPTER 4 "APPENDICES");

1) Bulk Supply Water from Water Board(s)
Class A: 42 084 282 (Buffalo City) to 558 916 194 (Johannesburg)
Class B to C: 29 200 (Mbombela) to 32 311 779 (Mogale City)

2) Surface Water (Water Treatment Plants, etc.)
Class A: 55 843 (Tshwane) to 38 463 276 (Buffalo City)
Class B to C: 29 200 (Mbombela) to 12 784 186 (Steve Tshwane)
Water Board: 93 805 (Magalies Water)

3) Ground Water (Boreholes, Protected Wells, etc.)
Class A: 603 460 (Kl) (Tshwane)
Class B to C: 86 471 (Steve Tshwane) to 425 200 (Polokwane)

As shown above, bulk water supply from Water Boards can be recognised as a major water source for municipalities followed by surface water, whereas ground water shared small portion of water source.

Question 2.1.2. Existing Water Supply Facilities and Equipment

(1) List of existing water supply facilities
(2) Situation of Operation and Maintenance (O&M) of the water supply facilities
1. Water treatment plant and process control
2. Water quality
3. Trunk main
4. Distribution main
5. Network
6. Service pipe/connection
7. Water meter
8. WCWDM / NRW / Leakage detection
9. Human resource for O&M
10. Others (Please specify)

Some municipalities are supplied treated water from water boards, so that such municipalities do not have water treatment plants, and thus municipalities are responsible for distribution network only. On the one hand, some water boards operate distribution network for municipalities who can not afford to manage water supply facilities due to the lack of technical skill and finance. In contrast, some local municipalities operate water treatment facilities due mainly to the out-of-the-way location where water boards have difficulties managing the facilities by themselves.

In general, existing water supply facilities municipalities own consist of the followings; reservoir, pumping station, distribution network.

Situation of Operation and Maintenance (O&M) of the water supply facilities in all the municipalities and water boards is summarised as follows;

1. Water treatment plant and process control

Although only a few municipalities own water treatment plant, some of them point out the shortage of skilled technicians such as process controllers, proper maintenance for facilities and insufficient fund for maintenance.

2. Water quality

Same as 1. Although most of municipalities are not in charge of maintaining the water quality, some of them indicate that pipe burst, ageing infrastructure and contaminated raw water affect the water quality. 2 municipalities in Class C2 reveal that they do not have their own lab which affects the early warning on water failure.

3. Trunk main
4. Distribution main
5. Network
6. Service pipe/connection

These 4 facilities have common issues as follows; (1) Ageing infrastructure, (2) Inadequate capacity for O&M teams, (3) Inadequate O&M budget, (4) Leakage, (5) Pipe Burst and (6) Vandalism. These issues can be recognised as one of the main causes of NRW.

7. Water meter

Almost all the respondents point out problems on water meter they are now facing. Major problems are; (1) Inaccuracy, (2) Ageing meters, (3) Illegal connection (=by-passing water meter), (4) Vandalism, (5) Poor meter management and maintenance (including improper calibration), (6) Vandalism and theft and (7) Wrong reading. However, even some Class A municipalities remark that there are unmetered properties where flat rate is applicable.

8. WCWDM / NRW / Leakage detection

Most of Class B to C municipalities indicate that there is no leakage detection nor NRW prevention as they usually hire the outsourced firms when leakage related accidents occur. Class A municipalities and water boards point out in common the ageing infrastructure and budget shortage for upgrading and newly construction of infrastructure which impact on WCWDM strategy.

9. Human resource for O&M

Almost all the respondents mentioned that the shortage of qualified staffs for O&M of facilities in the respective organisation, and personal training is also required to achieve the necessary level for proper maintenance of facilities.

10. Others (Please specify)

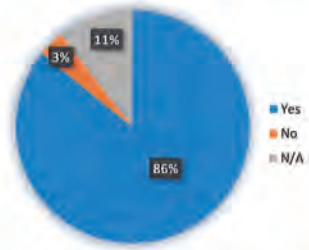
Although most of the municipalities did not response to this question, 3 B1 municipalities and 1 C2 municipality argue that vehicles for daily maintenance are required.

Question 2.1.3 Facility and Equipment related to WCWDM and NRW Reduction

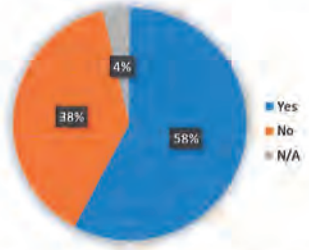
(1) Does your WSA have flow meter(s) to measure system input volume?
(2) Does your WSA have District-Metered Area (DMA) or flow meter(s) for DMA(s)?
(3) Does your WSA measure water pressure in pipeline network?
(4) Does your WSA have inventory or asset register of pipeline with information of pipe installation year and materials, etc.?
(5) What kind of pipe materials and sizes exist in your WSA?
(6) Does your WSA have organized/accumulated information on pipe type, materials and routes/areas which water leakage frequently occurs?
(7) Does your WSA identify the reason why water leakage occurs?
(8) Does your WSA have facility and/or equipment for NRW reduction, such as leakage detection equipment?
(9) Are your WSA capable of making full use of equipment for NRW reduction, such as leakage detection equipment?
(10) Does your WSA have a plan to procure facility and/or equipment for NRW reduction?

In regard to the flow meter, almost all the municipalities own magnetic flow meters to measure system input volume. Ultrasonic flow meters are also used in some municipalities. However only 9 municipalities out of 20 Class B to C municipalities have District-Metered Area (DMA)s or flow meters for DMAs, whereas all the Class A

municipalities possess them. That means a half of middle and small sized municipalities are not able to measure in-flow and out-flow of water in the designated areas.

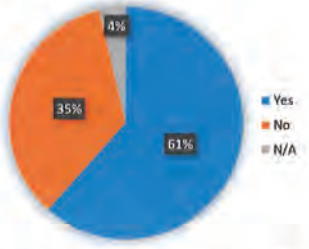


(Source: Project Team)
Figure 2-18: (1) Does your WSA have flow meter(s) to measure system input volume?



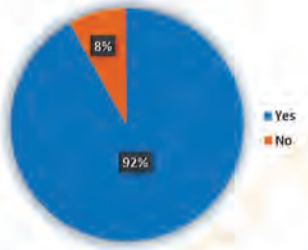
(Source: Project Team)
Figure 2-19: (2) Does your WSA have District-Metered Area (DMA) or flow meter(s) for DMA(s)?

Same as above, only 9 municipalities out of 29 Class B to C municipalities measure water pressure in pipeline network by means of pressure gauge or other measuring instruments, whereas all the Class A municipalities monitored water pressure properly. It is, thus, clear from the results that a half of middle and small sized municipalities have difficulties to check leakages through measuring water pressure in pipeline network.



(Source: Project Team)
Figure 2-20: (3) Does your WSA measure water pressure in pipeline network?

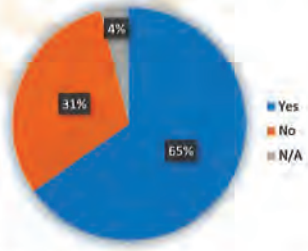
Regarding the inventory or asset register of pipeline with information of pipe installation, material and so on, almost all the municipalities, except a B1 and a B2 municipalities, have the inventory. However, in some B to C municipalities do not regularly update the inventory information, so that it is difficult for them to identify exact points and reasons of leakages.



(Source: Project Team)

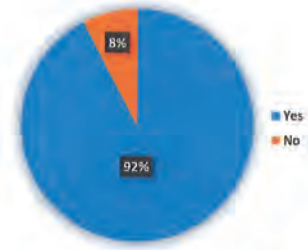
Figure 2-21: (4) Does your WSA have inventory or asset register of pipeline with information of pipe installation year and materials, etc.?

Pipe materials varies in the respective municipality, however in general, the following materials of pipes are used frequently; Steel, uPVC, Asbestos Cement (AC), High Density Polyethylene (HDPE) pipes, and pipe size ranges from 15mm to 1,400mm diameter. 65% of respondents have checked pipe type, materials and routes/areas which water leakage frequently occurs in regular basis. Notably AC pipes are still used in most of municipalities and are one of main causes of pipe bursts and leakages. In fact the municipalities pointed out the main reason why water leakage occurs is ageing old pipes such as AC, Steel and uPVC pipes. Human factors such as theft, illegal connection and vandalism are also indicated as one of main causes of water wastage.



(Source: Project Team)

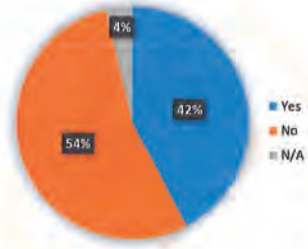
Figure 2-22: (6) Does your WSA have organized/accumulated information on pipe type, materials and routes/areas which water leakage frequently occurs?



(Source: Project Team)

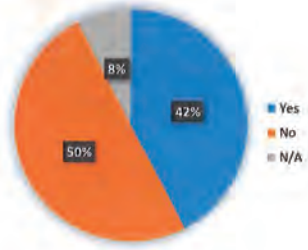
Figure 2-23: (7) Does your WSA identify the reason why water leakage occurs?

14 out of 26 respondents shows that 14 municipalities including 1 Metro municipality do not have facility and/or equipment for NRW reduction, such as leakage detection equipment. This means that the 14 municipalities hire the outsourced firms to detect the leakage location. However, some of 12 municipalities who have facility and/equipment also indicated that further training will be required to enable staffs with the efficient and effect skills to manipulate the equipment.



(Source: Project Team)

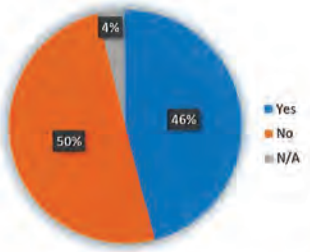
Figure 2-24: (8) Does your WSA have facility and/or equipment for NRW reduction, such as leakage detection equipment?



(Source: Project Team)

Figure 2-25: (9) Are your WSA capable of making full use of equipment for NRW reduction, such as leakage detection equipment?

In addition to that, 13 out of 26 respondents replied that they do not have a plan to procure facility and/or equipment for NRW reduction, and they intend to rely on the outsourced firms for the leakage detection.



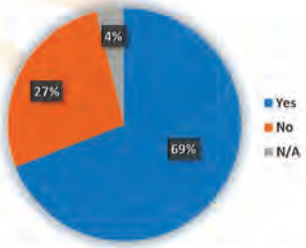
(Source: Project Team)

Figure 2-26: (10) Does your WSA have a plan to procure facility and/or equipment for NRW reduction?

Question 2.2 Policy/Strategy/Plan/Project on Water Conservation, Water Demand Management (WCWDM) and NRW Reduction

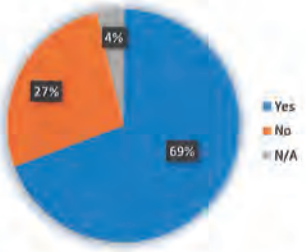
(1) Does your WSA have policy / strategy / plan of WCWDM or NRW reduction or leakage detection?
(2) Does your WSA have project (past, ongoing, future) of WCWDM or NRW reduction or leakage detection?

All the municipalities, except 7 municipalities and water boards, have a policy, strategy or plan of WCWDM or NRW reduction or leakage detection, and most of the municipalities with the policy, strategy or plan also have the actual project of WCWDM and NRW. In addition, 3 out of 7 municipalities without the policy, strategy or plan at the moment are now in process of drawing the plan or the plan has already been included master plans of the entire municipality.



(Source: Project Team)

Figure 2-27: (1) Does your WSA have policy / strategy / plan of WCWDM or NRW reduction or leakage detection?



(Source: Project Team)

Figure 2-28: (2) Does your WSA have project (past, ongoing, future) of WCWDM or NRW reduction or leakage detection?

The contents of the actual plan are as follows; replacement of water meters, trunk mains, distribution main, valves and fire hydrants, pressure management, maintenance of pressure reducing valves and other plan in order to develop WCWDM and NRW reduction.

In general, several water-related national strategies such as National Water Resources Strategy II have already been in progress across the country, and thus each municipality seems to recognise the importance of WCWDM and NRW reduction, and in fact take action to improve the current water supply situation.

PART3: FINANCIALS RELATED TO WATER SUPPLY AND NON-REVENUE WATER IN MUNICPALITY

Question 3.1. Financial Status in Water Supply Section/Department

(1) Financial statement of the water supply section / department
(2) Cost of water purchased
(3) Water billed
(4) Water tariff structure
(5) Potential Water savings in Rands

Only a few municipalities submitted the financial statement of the water supply sections and/or departments. There seems to be no financial information specialises in WSA and it could be included in the financial statement of the entire municipality.

Cost of water purchased varies in each municipality. There is a strong contrast between Class A municipalities and others. For instance, Class A Tshwane paid R 1,977 Million mainly to Rand Water and Magalies Water in 2016/17 whereas Class C2 OR Tambo purchased only R 44 Million of water in the same period.

Accurate data of water billed could not be fully received, and thus analysis on the information shall be omitted in this report. However the following is some examples in each class of municipality and water board in 2016/17;

Class A Buffalo City: R 478 Million
Class B1 Polokwane: R 91 Million
Class B2 Metsimaholo: R 113 Million
Class C2 OR Tambo: R 11 Million
WB Bloem Water: R 661 Million

Although enough information on water tariff structure in municipalities were not collected in the survey, the tariff structure of Matlosana municipality consists of basic charges and measured rate. Measured rate is, furthermore, classified in the following categories; 1. Domestic, 2. Domestic Indigent, 3. Agriculture, 4. Small Holdings, 5. Business, 6. Industry, 7. Government, 8. Schools, 9. Nursery schools, 10. Churches, 11. Flats, 12. Hospitals, 13. Institutional & correctional Services and 14. Plots. Other municipalities have similar tariff structures.

Same as above, information on "Potential Water Savings" could not be fully received and it does not make sense to analyse two or three responses. However, according to Bloem Water, 7 Million for every 1% is saved.

2.2 Literature survey

It should be noted that all Municipalities are supposed to complete their Workplace Skills Plans (WSP) every year to be sent to LGSETA.

2.2.1 Training /skills development Funding system: National Skills Fund (NSF)

The National Skills Fund (NSF) is a fund located within the Department of Labour. The Fund was established in terms of the Skills Development Act, 1998. The Skills Development Act (section 28) stipulates the following objectives for the NSF: "Funds in the NSF may be used only to fund:

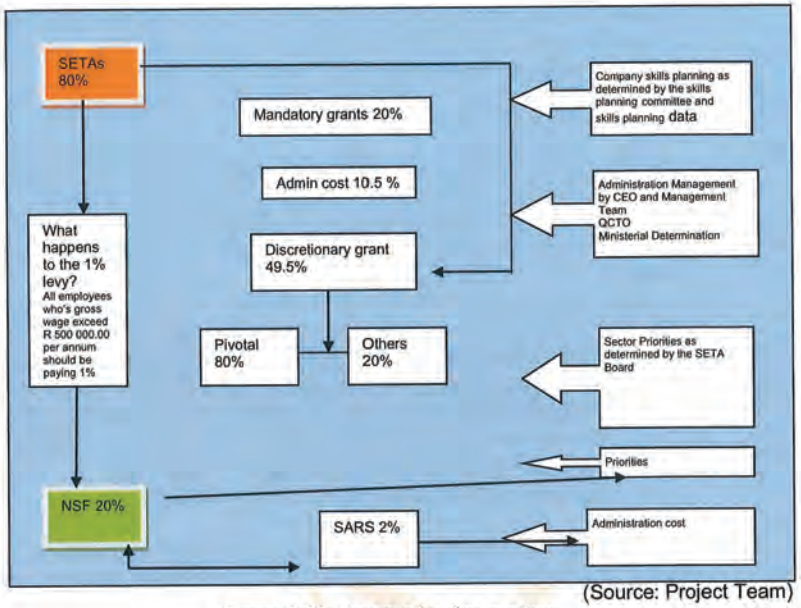
- Projects identified in the National Skills Development Strategy (NSDS) as national priorities.
- Other projects related to the achievement of the purposes of the Skills Development Act as the Director-General may determine.

The main source of income for the NSF comes from 20% of the skills levies collected in terms of the Skills Development Levies Act. This Act determines that skills levies will be distributed as follows:

- National Skills Fund = 20%
- Sector Education and Training Authorities = 80%

This funding is used to address government **top government** skills priority, any company, national, provincial department including the municipality can apply for such funding for their skills development also but there are not guaranteed that they will be granted the funds and further to that the funding can only be used to for programmes that address youth skills development in particular who are unemployed and PIVOT training programmes.

Therefore it is risky for a municipality to depend on this type of funding as their means to fund their training. Furthermore the funding does not cater for isolated skills programme which is not a part of a particular qualification registered at a National Qualification framework.



(Source: Project Team)

Figure 2-28: Training funding system

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2.2.2 SETA grant regulation

Each and every national, provincial and local government is expected to complete and submit WSP and PIVOTAL Plan, implement it so that they get their **mandatory grant** from their respective SETA (meaning the SETA that they are submitting their WSP and ATR (Annual Training report). However, each SETA should develop their Sector Skills Plan (SSP) to address the critical and scare skills for their relevant sector.

The Regulations require 80% of discretionary funds to be spent on PIVOTAL programmes that address scarce and critical skills. This is not a particularly radical change, as SETAs are currently spending around 80% of funds on such programmes. The intention is to encourage SETAs to be much more specific in how they allocate these funds, and to be able to account for spending on agreed priorities within the sector and nationally, including being able to report on impact.

There are also discretionary grants that can be claimed. Discretionary grants are just that – discretionary. The purpose of the discretionary grants is for the SETA to use them to implement their SSP and to contribute to national targets. These are not grants that employers are entitled to, but a grant the SETA deploys to achieve its objectives in relation to the development of the sector.

The municipalities are obliged to budget 1% of their wage gross for the purpose of training, but further to that SALGA require them to further spent additional 1% to make it 2% of the total training, but this is not happening in most municipalities because of the debts that

they have with other entities such as ESKOM on electricity and water from Department of water and Sanitation. Therefore they become too depend on the mandatory grants which far too little to make any significant impact on skills development at large.

2.2.3 Qualification and accreditation system

The Quality Council for Trades and Occupations (QCTO) is a Quality Council established in 2010 in terms of the Skills Development Act Nr. 97 of 1998. Its role is to oversee the design, implementation, assessment and certification of occupational qualifications, including trades, on the Occupational Qualifications Sub-Framework (OQSF). Evaluation systems.
The QCTO is also responsible for the accreditation of Skills Development Providers (SDPs). For any occupational qualification to be developed an application need to be made to QCTO for consideration. But even before the application the sector need to make a research by looking at existing relevant qualifications to check the following:

- If the proposed qualification is not somehow addressed already or
- If there an existing qualification need to be re-align to cater for new job tasks or
- If a specialised qualification is needed or part qualification
- If a complete new qualification need to be developed

The qualification proposed should be a need at a sector level **NOT** at an individual company or departmental level. It should also have readily available Community of Expert Practice (CEP) members, which include the people who have been doing the job; Universities; Labour. QCTO will locate the relevant Development Quality Partner (DQP) to assist with the development should they accept the qualification e.g. in the water sector is EWSETA, Energy Seta, and LGSETA. The qualification development period and the costs will vary because there are certain factors that need to be taken into consideration:

- ✓ Complexity of the qualification
- ✓ The availability, consistency and cooperation of CEP members
- ✓ Availability of the relevant QDP
- ✓ Availability of funds

Chapter 3- Conclusion

The response rate for all categories combined makes **51%.** A conclusion can be made out of this analysis to inform or input to the next output of the project. In this B/L survey, it is clear that the demand for NRW and other related training programme is in high demand. However, most of middle and small-scaled municipalities such as B1, B2, B3 and C2 can not afford to send their employees to any training due to the lack of budget for the training and human resources. In regard to the training programme municipalities need to tackle the NRW issues, survey results of question 1.2.5 (4) "What areas do your WSA want to address through NRW training?" points out that the water loss control technique, such as leak detection, pressure management, zone management and water balance, is thought to be prioritised by municipalities. In addition, the results of question 1.2.7 (1) "What kind of training are needed for your water section / department? Or which specialty area(s) does your water section / department want to strengthen?" also shows that construction

engineering and its supervisory technique are indicated as the most needed training for the WSAs. These requirements from municipalities shall be referred to the contents of training programmes which will be held in the IBTC and the design of training yard which will be established in the IBTC also.
Finally, the information gathered and analysed should be shared with all the participants including the once that did not response or not sampled.

water & sanitation
Department:
Water and Sanitation
REPUBLIC OF SOUTH AFRICA

SALGA
Inspiring service delivery

JICA

Joint Coordination Committee Meeting

DWS – JICA National Non Revenue Water Training Facility

Towards Effective and Responsive National Non Revenue Water Training Curriculum

Presenter: Thabo Masike and Nobutaka Maruyama (TT3)

Date: 25 July 2018

WATER IS LIFE, SANITATION IS DIGNITY 1

Presentation Outline

- Statement of Fact about Non Revenue Water
- Baseline survey
- Proposed curriculum
- Proposed training structure and schedule
- Comparison with Water Reticulation Practitioner Curriculum
- Non-Revenue Water key message
- Conclusion remarks

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Non Revenue Water (NRW)

Water is a scarce resource in South Africa. The need to manage water equitably is espoused in the constitution of the republic and also in the National Water Act (Act 36 of 1998). WC/WDM is recognized in the Act as an instrument for managing water equitably thus aiming at reducing Non-Revenue Water (water not billed or accounted for).

Baseline survey

- **Period of the Survey**

The Survey was conducted during the period below;

- 28 September 2017 – February 2018

- **Targets of the Survey**

Targets of the Survey consists of the two organisations below;

- 1) 44 municipalities which feature the Water Supply Authorities (WSAs)
- 2) 7 water boards

- **Methods of the Survey**

Methods of the Survey consists of the two approaches below;

- Visit Survey (for 44 municipalities and 4 water boards)
- Literature Survey

Attribute Data and Credibility of the Answers

Attribute Data (Collection ratio and other information on answers from municipalities)

- As explained in the clause 1.2.6, out of total 51 participants in the survey, 26 responded and analysed which makes **51%** of the responses analysed. In case of municipalities, 24 responses out of 44 targeted municipalities are not enough to evaluate the current status of all the municipalities in the country with consideration of the total number of municipalities with WSAs which is 152. Thus the results of the survey may not reflect the exact opinions or conditions of all the municipalities. However, some of collected data and information are explained the challenges and actual status each municipality is facing in detail and can be referred to the future programmes in the project and also to other municipalities with same problems.

Figure 2-10: Summary of the areas or course contents the WSA requests for NRW training (General) (Source: Project Team)

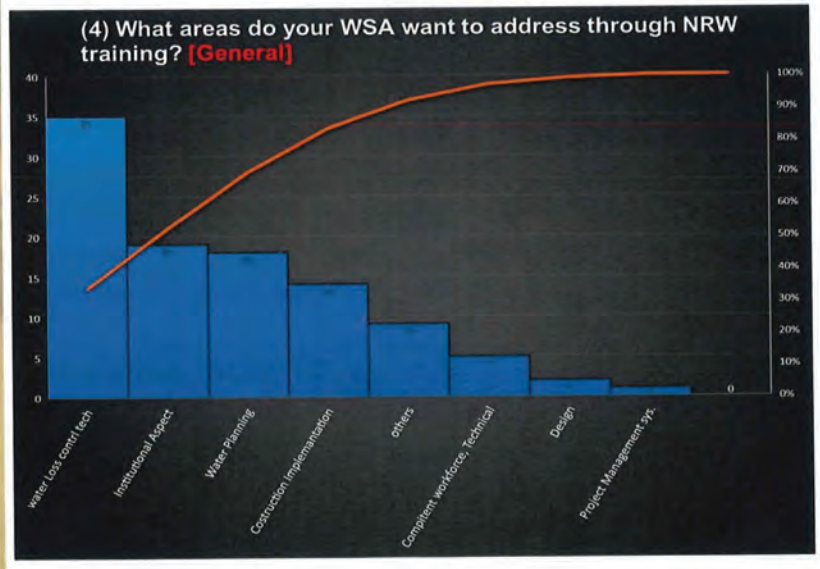
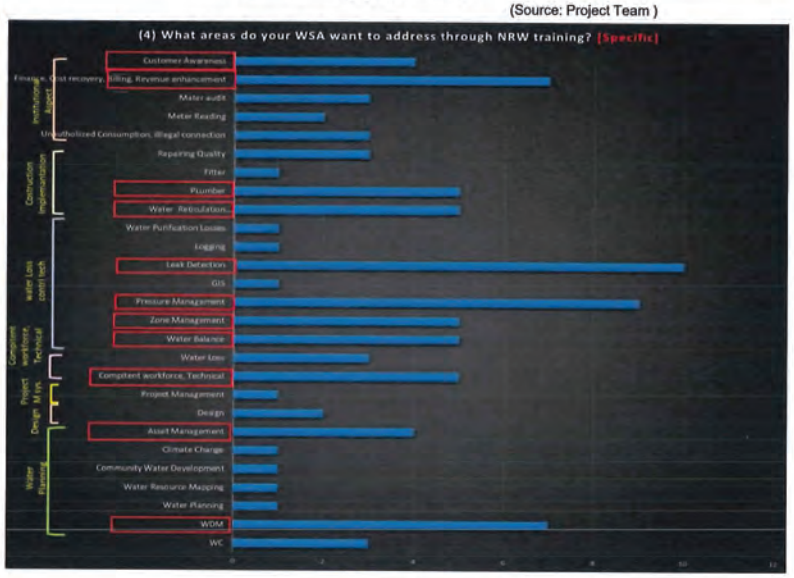


Figure 2-11: Summary of the areas or course contents the WSA requests for NRW training (Specific)

(Source: Project Team)



Key Curriculum Considerations

1. Concept: (for curriculum making)

Contents are to be Integrated but to be simple (selected) as much as possible for changing LGs situation => output oriented

2. Aim: (for this course)

Do work in Local Governments' actual site for improving water service and build capacity for each participants as a public servant (Technical, Mindset change)

3. Discipline:

Breed key discipline to work efficiently as a team (keep time schedule, considerate of other members, confirmation, communication, time keeping, commitment etc)

The aim of IBTC Training

- The purpose of this Training is actual NRW reduction in each MPs.
- Based on Base Line survey many municipalities don't have accurate Water Balance and percentage of NRW.
- The situation shows that "they are still at the stage of metering".
- The curriculum, therefore, focuses on water measurement, create "Water Balance" and then propose NRW reduction strategy.
- Once the water balance is clarified, implementation of other interventions become much easier
- In the future phase, section 8 and 9 to be done more intensively.

Comprehending Water Balance and for that Technique is the key

Contents of Curriculum

0. ORIENTATION AND GENERAL OVERVIEW
1. BULK METER KNOWLEDGE, TECHNIQUE (INCLUDING PIPE FITTING)
2. CUSTMER METER KOWLEDGE, TECHNIQUE
3. RETICULATION FACILITY PLANNING, O&M (VALVES, FIRE HYDRANT, AIR VALVES, ETC.)
4. MEASUREMENT PLANNING
5. WATER BALANCE ANALYSIS
6. NRW REDUCTION STRATEGY PLANNING & PRESENTATION
7. FUNDAMENTAL KNOWLEDGE OF ACTIVE LEAKAGE EQUIPMENT, THEORY*
8. FUNDAMENTAL KNOWLEDGE OF CONDITIONAL ASSESMENT *

PLANNING AND PREPARATORY STAGE: ORIENTATION AND GENERAL OVERVIEW

- Self-Introduction: trainer
- Self-Introduction: staffs
- Self-Introduction: trainee
- What is water service – social and business aspect
- What are the problems of water service in local government in SA
- What is NRW and Why
- Roadmap to problem solving – starting from" see your situation STRAIT" (: back bone of this training course)
- Why are you here? – Purpose of this training course
- Course schedule

1. BULK METER KNOWLEDGE, TECHNIQUE (INCLUDING PIPE FITTING)

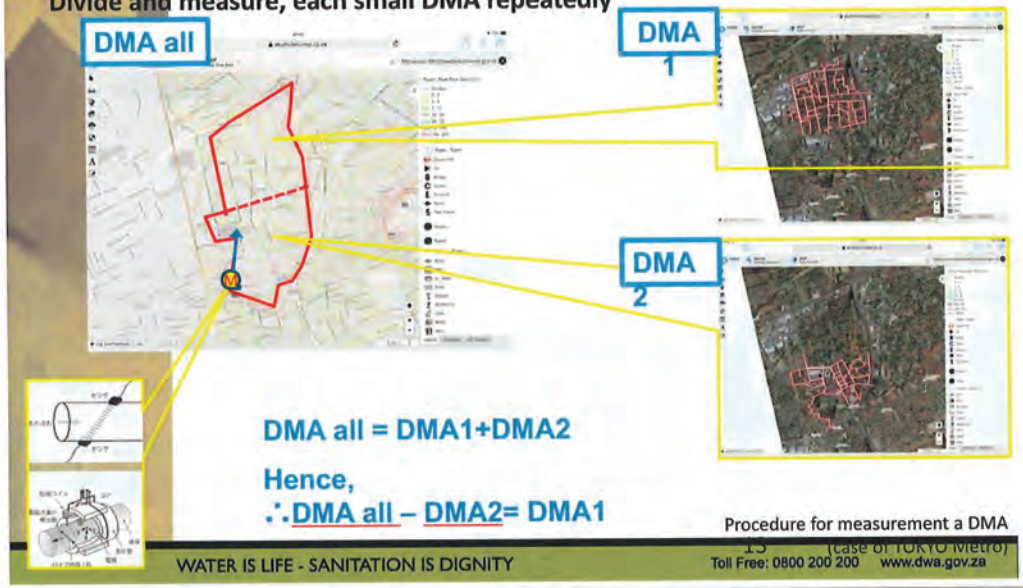
- **Why are bulk meters needed**
  - General overview of water reticulation in city and town
  - Vicious cycle of water service(reticulation system) – arise issues: mishandling when the time of water shortage, unprecedent pipe burst, nothing progress by unplanned work, distrusted by customers...
  - How to know your water reticulation condition—compare to the initial master plan
- **Function of bulk meter**
  - Varieties of bulk meters
  - Function of each bulk meters
  - Each advantages and disadvantages
  - Cost
- **How to operate the bulk meter(including maintenance and security tips)**
- **What is it like actual bulk inflow (feature of : Time - Flow late, Pressure)**
- **How to check bulk meter working properly**
  - Installation
  - Maintenance
  - Others
  - Drills – installation of each types of bulk meter (confirmation&positioning&fitting)
  - Drills – experiment: water flow rate and data accuracy
  - Drills – experiment: improper installation and data accuracy
  - Drills – discussion: sharing experiences of bulk meter issue (from the case of each participant's municipality)
- **How to use bulk meter for tackle with reducing NRW**
  - Making DMA (sectorization)
  - "DANKAKU" -- dividing method of DMA; to know Water Balances in each small DMAs
  - Drills – Do "DANKAKU「断水区画」" method on the map
  - Monitoring the data (MNF)

Drills : Practical part

"DANKAKU" method

(for Sectorization)

"Divide and measure, each small DMA repeatedly



Procedure for measurement a DMA (case of TOKYO Metro)

2. CUSTMER METER KOWLEDGE, TECHNIQUE 1/2

- Why are customer meters needed
  - General overview of customer meters—the role
  - Virtuous cycle of local government's water service – from the business aspect
  - Relation with customers
- Function of customer meter
  - Varieties of customer meters
  - Function of each customer meters
  - Each advantages and disadvanteges
  - Cost
  - Drills – understand the function of each types of customer meter

Drills : Practical part

2. CUSTMER METER KOWLEDGE, TECHNIQUE 2/2

- **How to operate customer meters**
  - How to know actual water consumption?
  - How to check customer meters working properly?
  - installation
  - Maintenance
  - Others
  - Drills – installation of each types of customer meter (confirmation&positioning&fitting)
  - Drills – experiment: improper installation and data accuracy
- **how to use customer meter to tackle with reducing NRW**
  - awareness for value of water
  - awareness for quantity of water usage
  - find leakage within the premises
  - collect data and analyse water flow (even not billing)
  - find illegal connection
  - comprehend tendency of consumption per capita for each land use (basic data for future development plan)
  - Drills – discussion: sharing experiences of customer meter trouble (from the case of each participant's municipality)
  - Drills – discussion: sharing FBW policies of each Municipalities and how to do handling actually (from the case of each participant's municipality)
  - Drills – discussion: sharing experiences of illegal connection (from the case of each participant's municipality)
  - Drills – making illegal connection case book (from the case of each participant's municipality)
  - Drills – making illegal connection(conditions: not same as other members)

3. RETICULATION FACILITY PLANNING, O&M (VALVES, FIRE HYDRANT, AIR VALVES, ETC.)

- **What is the layout should be as a water reticulation system?**
  - Geographical features
  - Land use situation
  - Follow to the city development plan
    - Love your reticulation
- **Function of water service facilities, its Ideal position and setups**
  - Reservoirs
  - Pipes
  - Valves
  - PRVs
  - Scours valve (filter valve, drainage valve)
  - Air valves
  - Fire hydrants
  - Meters
  - Drills – understand each facility's function
  - Drills -- how to use it
  - Drills -- how to maintain it
- Drills – on the map training – discuss actual cases

4. MEASUREMENT PLANNING

- Why measurement is needed
- Which points of reticulation should be measured -- prioritise
- Measurement planning – setup service facilities in reticulation
- Drills – on the map training using actual cases
- Drills – how to know shutting valves

5. DATA LOGGING AND ANALYSIS

- Why do you log the data?
  - Varieties of purpose for logging
- How to log?
  - Varieties of logging system
  - advantages and disadvantages of each system
  - What are important points of logging?
  - Drills – how to use loggers
  - Drills – how to maintain loggers
  - Drills – logging
- How to analyse the data
  - Varieties of analysis
  - Fundamental knowledge of database making
  - How to organize the data?
  - What are important points of analysis?
  - Drills – making database table
  - Drills – analysis: reading data to water balance

6. WATER BALANCE ANALYSIS

- **Why water balance is needed?**
- **What are water balance consists of?**
- **How to make water balance?**
  - Bulk input(system input)
  - Consumption
  - Errors
  - How to deal with unmetered consumption?
  - Consumption from unmetered connection
  - Free basic water
  - Leakage
  - Illegal consumption
  - Drills – making water balance
  - Drills – Discussion: case study (from the case of each participant)
- **Non-revenue water**
  - What is non-revenue water?
  - Drills – how to decipher water balance – meaning of its real situation

Drills : Practical part

7. NRW REDUCTION STRATEGY PLANNING & PRESENTATION1/2

- **What is strategy?**
  - What is strategy?
  - Why strategy is needed?
  - How to make strategy?
  - Interventions for reducing NRW
  - How to make strategy for reducing NRW?
  - Drills – to select interventions and build up the logic of strategy for NRW
- **What is Plan?**
  - What is plan?
  - Why is plan needed?
  - Varieties of Plan
  - How to make Plans?
  - How to make plans for reducing NRW?
  - Drills – making NRW strategy into project plan
  - Drills – making project schedule

Drills : Practical part

7. NRW REDUCTION STRATEGY PLANNING & PRESENTATION 2/2

- **What is presentation?**
  - Why are presentation important? (get funds, get project approval, work efficiently as a team, mentorship, etc)
  - The way of presentation
  - Oral (one by one and meeting)
  - By paper
  - By screen
  - Drills – make a presentation material
- **How to prepare a presentation material?**
  - Tips for using Power point
  - Editing photos quick and nicely
  - Using graphs quick and nicely
  - Tips for making handouts
  - Tips for using Word for making short report
- **How to make a presentation to get approval for NRW reduction project?**
  - Drills – action learning: give a presentation to all participants
  - Drills – reflection: feedback from the presentation session

Communication tips

Drills : Practical part

8. FUNDAMENTAL KNOWLEDGE OF ACTIVE LEAKAGE EQUIPMENT, THEORY* 1/2

- Why active leakage detection is needed?
  - What is active leakage detection?
  - When is the best time to start active leakage detection?
  - Varieties of active leakage detection
- What are the equipment of active leakage detection?
  - Acoustic bar
  - Correlator
  - Multi-channel Correlator
  - Amplifier
  - Drills – understand each equipment's function
  - Drills -- how to use it
  - Drills -- how to maintain it

Drills : Practical part

*: SECTION 8..9, SHOULD BE MORE FOCUS IN NEXT STEP "PHASE2", EXTENSIVELY

8. FUNDAMENTAL KNOWLEDGE OF ACTIVE LEAKAGE EQUIPMENT, THEORY* 2/2

- **What is the procedure of active leakage detection?**
  - Setup DMA
  - Select deep dive area -- using DANKAKU method
  - Drills – do DANKAKU and select the focus area
  - Using acoustic bar
  - Using Correlator, Multi-channel Correlator
  - Using Amplifier
  - Excavation and identify the leak
  - Repairing work
  - Keep record – accumulate data; Take action to next step to analyse the data
  - Drills – find water loss and taking data
- **Active leakage detection and reticulation O&M – maintenance point from the view of reducing NRW**
  - DMA, Reservoirs
  - Pressure, Flow
  - Pipes
  - Valves
  - Air valves
  - Fire hydrants
  - Drain facility
  - Meters
  - Drills – problem solving of each facilities
  - Drills – discussion: experience of each participant

Drills : Practical part

* : SECTION 8, 9 SHOULD BE MORE FOCUS IN NEXT STEP,"PHASE2", EXTENSIVELY

9. FUNDAMENTAL KNOWLEDGE OF CONDITIONAL ASSESMENT * 1/2

- **Why conditional assessment is needed?**
  - What is conditional assessment?
  - Effect of condition to the water service facilities
  - Effectiveness of conditional assessment.
- **How to do conditional assessment?**
  - Criteria for water service facility (focus on pipe facility)
  - Type(material)
  - Age
  - Soil
  - Depth
  - Traffic
  - History of repairing work(when, where, who, why, how, how many,leagal life)
  - Performance(disturbing flow, reducing thickness, hardening, swelling, frequency of leakage)

Drills : Practical part

* : SECTION 8, 9 SHOULD BE MORE FOCUS IN NEXT STEP,"PHASE2", EXTENSIVELY

9. FUNDAMENTAL KNOWLEDGE OF CONDITIONAL ASSESMENT * 2/2

- **How to assess?**
  - Collecting data
  - Making data table
  - Analysis
- **How to reflect to Long-term plan**
  - Perspective from the finance
  - Perspective from the number of staff
  - Perspective from the service level
  - Perspective from the impact level to interrupt social activities
  - Drills – prepare conditional assessment data table
  - Drills – analysing and making strategy
  - Drills – making long-term plan
- **From where funded to the project?**
  - DWS scheme
  - Funding from funding agency
  - Drills – making funding plan based on the long-term plan

Drills : Practical part

* : SECTION 8, 9 SHOULD BE MORE FOCUS IN NEXT STEP,"PHASE2", EXTENSIVELY

Training schedule outline (draft)

- WEEK ONE (1): THEORY AND PRACTICAL [at IBTC]
- WEEK TWO (2): WORK PLACE
- WEEK THREE (3): WORK PLACE
- WEEK FOUR (4): THEORY AND PRACTICAL [at IBTC]
- WEEK FIVE (5): WORK PLACE
- WEEK SIX (6): WORK PLACE

THE PERIOD: SIX(6) WEEKS (=1.5MONTH)

PROPOSED TRAINING SCHEDULE AND STRUCTURE

- THE TRAINING PERIOD WILL BE TWO –THREE WEEKS (at IBTC)
- DWS CAN TAKE INITIATIVE WATER BALANCE, NRW STRATEGY AND IMPLEMENTATION
- DWS CAN EXCHANGE CLOSELY WITH MUNICIPALITIES MAKING USE OF EACH TRAINING PERIOD
- NO OTHER PROVIDER CAN COVER THESE AREA, AND IT IS VITAL TO SOUTH AFRICAN LOCAL GOVERNMENT'S SITUATION
- DWS, JICA, MUNICIPALITIES (EXPECT AT LEAST 6PEOPLE FROM MUNICIPALITIES FOR THIS YEAR, ADD 10 (out of 30 trainees of first year) FOR THE NEXT YEAR)
- FINANCE FROM LGSETA IS A KEY (PREFERABLY FUNDED TO IBTC ALL, AND PROVIDE BUDGETS TO MUNICIPALITIES FROM IBTC) DWS already has MOU with LGSETA so that scope can be extend
- SECTION 8.,9. SHOULD BE MORE FOCUS IN NEXT STEP, "PHASE2", EXTENSIVELY

Water Reticulation Practitioner

SECTION 3A: KNOWLEDGE SUBJECT SPECIFICATIONS

Total credits: 67

Total days: 84 (4.2month)

SECTION 3B: PRACTICAL SKILL MODULE SPECIFICATIONS

Total credits: 64

Total days: 80 (4.0month)

SECTION 3C: WORK EXPERIENCE MODULE SPECIFICATIONS

Total: 114 credits

No. of days: 142.5 (6.7month)

Total

Total credits: 245.0

Total days: 306.5 (15 month)

4. Key message from Task Team

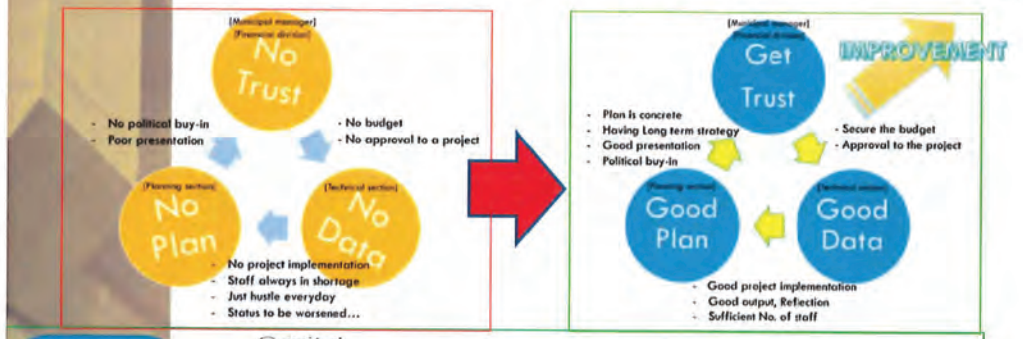
Important Points

- NRW rate shows all aspects of the water service and results.
- Targeting just NRW does not help to reduce the NRW rate.
- Analyzing the structure of Water Balance and identifying the weak points of the water service is very important

To that end, the first thing to be done is the measurement control.

- It is important to shift the viewpoint from how to reduce the NRW rate to how to create a proactive work style. As long as there is a water service, it will continue forever.
- In other words, the NRW measure is to ensure the permanence of water services.

Vicious cycle to Virtuous cycle



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THANK YOU/SIYABONGA

Appendix 6

Project Monitoring Sheet I (Revision of Project Design Matrix)

PM Form 3-2 Project Monitoring Sheet I
PDM~~1~~2

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water
Project Period: August 2017 to July 2020 (36 months)
Implementing Organization: Department of Water and Sanitation (DWS) / IBTC
Dicrect Beneficiaries: DWS, IBTC and its personnel, Facilitators selected
Indicrect Beneficiaries: Municipalities
End Beneficiaries: Customers / Consumers of water supplied by Municipalities
Project Site: Gauteng Province

Red: Deleted (Orginal)
Blue: Newly added

Version ~~1~~2
Dated 25 Jul. 2018

Monnitoring: 25 Jul. 2018

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<Overall Goal>					
~~Non-Revenue Water (NRW) skills development for Municipalities are continuously conducted under the IBTC's direction in collaboration with SALGA. Municipalities~~ Non-Revenue Water (NRW) management skills are utilized in NRW reduction projects of participant municipalities.	~~1. Actual trainings in IBTC (No. of trainings / trades or skills)~~ ~~2. IBTC organization/individual performance (degree/statue)~~ ~~3. Programmes planned in Strategic Business Model (trades or skills)~~ ~~4. Actual trainings of NRW in Municipalities (No. of training)~~ 1. NRW reduction projects using developed NRW management skills in participant municipalities are increased. 2. NRW ratio in participant municipalities is decreased.	~~1&4. Annual Training Report~~ ~~2. Capacity Assessment Report~~ ~~3. IBTC Strategic Business Model~~ 1. Monitoring report of participant municipalities 2. DWS's No-Drop report and/or report from municipalities		None.	
Project Purpose					
~~NRW Skills Programme is continuously provided at IBTC, based on organizational and technical needs~~ NRW management skills are developed for pariticpant municipalities through the NRW Training by IBTC.	~~1. Actual trainings (No. of trainings / trades or skills)~~ ~~2. IBTC organization/individual performance / capacity IBTC~~ ~~3. Programmes planned in Strategic Business Model (trades or skills)~~ ~~4. Status of accreditation of NRW Unit Standards applied to SETA~~ 1. No. of the NRW Training at IBTC is increased. 2. No. of water balance submission is increased. 3. No. of NRW reduction plan in participant municipalities is	1. IBTC's annual training report ~~2. Capacity Assessment Report~~ ~~3. IBTC Strategic Business Model~~ ~~4. SETA Accreditation Certificate~~ 2&3. DWS's No-Drop report and/or report from municipalities	- Dramatic reduction of budget and public grants on skills development for Municipalities does not happen.	None.	
<Outputs>					
~~1. Training information on water supply sector is accumulated at IBTC and shared with SALGA and Municipalities.~~ 1. Skill development, status-quo and challenges of NRW, and needs in munipalities are analyzed and shared with stakeholders.	~~1-1. List of training resources (by providers, programmes, human resources, manuals, subsidies/grants, etc.)~~ 1-1. Analyzed/organized information of skills development of municipalities is submitted to DWS (list of no. of staff, attended training, mentor resources, training providers, manuals, workshops and yards, subsidies/grants, good practices, etc.) 1-2. Analyzed/organized information of NRW and needs of municipalities is submitted to DWS. 1-~~2~~3. Benchmarked matrix ~~(summary)~~ of Japan and South Africa on water services is submitted to DWS (comparative featuresstrength/weakness, methodology, etc.) 1-4. Information sharing occasions are provided.	1-1&2. Baseline survey report and training curriculum 1-~~2~~3. Benchmark report 1-4. Seminar report and presentations		- Baseline Survey report was drafted. - Benchmark report was prepared, then submitted to the DWS management.	
2. IBTC's NRW Training ~~management~~ capacity ~~in water supply sector~~ is improved.	~~2-1. IBTC organization/individual performance / capacity~~ ~~2-2. Progress of Organizational setting update~~ ~~2-3. Record of SOPs (actual revisions)~~ ~~2-4. Progress of update of IBTC Strategic Business Model~~ 2-1. Appropriate organizational structure for the NRW Training is established at IBTC. 2-2. No. of revision SOP of the NRW Training is increased. 2-3. No. of revision IBTC's NRW Trainning Business Plan is increased.	2-1. Capacity assessment report and/or organogram of IBTC ~~2-2. Proposed Organogram of IBTC~~ 2-~~3~~2. Standard Operation Procedures (SOP) of NRW Training 2-~~4~~3. ~~Draft revised~~ IBTC's NRW Training ~~Strategic~~ Business ~~Model~~ Plan		None.	
3. The NRW Training~~s on Non-Revenue Water (NRW) are~~ is conducted with training improvement cycle ~~at IBTC~~.	~~3-1. Actual trainings on NRW Skills Programme (No. of trainings, trainees)~~ ~~3-2. Appropriateness of NRW Skills Programme (trainees' evaluation)~~ ~~3-3 Feed back / utilization of skills trained at IBTC into the water services at sampled Municipality(ies)~~ 3-1. No. of Faciltator Technical Meeting is increased. 3-2. No. of NRW Training is increased. 3-3. Trainee's satisfaction with the NRW Training is increase. 3-4. No. of feedback/utilization of skills trained into water services at municipalities is increased.	3-1&2. IBTC annual report 3-~~2~~3. Training evaluation questionnaire to trainees (training management/contents and individual achievement) 3-~~3~~4. Survey of ~~report~~ participant municipalities in sampled Municipality~~(ies)~~		None.	

Note: Achievement of overall goal, project purpose and outputs is to be evaluated based on result by using indicators and the ratio of the achievement. For example, criteria are: 100% if all indicators are done, 75% if three out of four are done, and 50% if one out of two is done.

Inputs			Important Assumption
Activities for Output 1 1-1. Conduct baseline survey on skills development and NRW in ~~water supply sector~~ municipalities ~~(programme, human resources, materials and management)~~. 1-2. Compile and analyze ~~training resources, good practices, lessons learnt in water supply sector~~ skills development and NRW in municipalities. 1-3. ~~Share training resources, good practices, lessons learnt with SALGA and Municipalities.~~ Review needs of skills development on NRW, existing qualifications, roles and responsibility of DWS/IBTC. ~~1-4. Incorporate good practices into training materials.~~ 1-~~4~~5. Benchmark water supply services and its skills development in Japan. 1-~~5~~6. Hold a seminar and share on the results of the baseline survey and benchmark with stakeholders.	**The South African Side** **1. Project Personnel** 1) JCC Chairperson: Chief Director of Global Cooperation, DWS 2) Project Director (PD): Director of NWRI, DWS 3) Co-Project Director (PD): SALGA 4) Project Manager (PM): Centre Manager, IBTC 5) Co-Project Manager (PM): Diretctor, Water Use Efficiency ~~5~~6) Training Manager, IBTC ~~6~~7) Quality Assurer, IBTC ~~7~~8) Dedicated NRW Training Personnel, IBTC ~~8~~9) Municipal Coordinator (Technical), SALGA ~~9~~10) Municipal Coordinator (HRD), SALGA ~~10~~11) ~~TOT~~ Facilitator ~~11~~12) Candidate Facilitator ~~12~~13) Other ~~project~~ personnel mutually agreed upon as necessary	**The Japanese Side** **1. JICA Experts** 1) Chief Advisor / NRW Management 2) Deputy Chief Advisor / NRW Management 3) ~~Skills Programme~~ Training Planning / Organization Coordination 4) Water Leakage Detection 5) Water Distribution Control / Commercial Loss 6) Training Yard Design and Supervision 7) Procurement / Administrative Coordination 8) Training Management / Human Resource Development 9) Other Expert(s) if necessary	**Pre-Conditions** - DWS and SALGA agree on their collaboration and cooperation for the Project - DWS allocates/ assigns personnel in charge of NRW Skills Programme at IBTC.
Activities for Output 2 ~~2-1. Review roles and responsibility of IBTC for skills development of municipalities in water supply sector based on the results of Output-1.~~ 2-~~1~~1. ~~Draft proposed organogram of IBTC including NRW Training Section~~ Prepare the NRW Training Business Plan of IBTC. 2-2. Take procedures for funding the NRW Training. 2-3. Prepare Terms of Reference for ~~Training Sections related to skills development in water supply sector~~ the NRW Training. 2-4. Prepare ~~draft~~ Standard Operation Procedures (SOP) of ~~skills development provision~~ the NRW Training. 2-5. Revise the SOP of the NRW Training through the activities of Output-3. 2-6. ~~Draft revised IBTC Strategic Business Model.~~ Revise the NRW Training Business Plan of IBTC through the activities of Output-3. 2-7. Conduct capacity assessment of IBTC~~'s organization, individuals and facilitators developed~~.			
Activities for Output 3 ~~3-1. Review situation/needs of skills development on NRW from the results of baseline survey of Activity 1-1.~~ ~~2. Select registered unit standards related to NRW from existing qualifications of SAQA.~~ 3-~~1~~1. Design NRW ~~Skills Programme~~ Training ~~consisting of the selected Unit Standards and supplementary items if any~~ based on results of Output-1. 3-2 Secure the site(s) for workplace training of the NRW Training. 3-~~2~~3. ~~Select~~ Secure facilitators (~~qualified~~experienced/skilled ~~artisans~~ personnel on water reticulation or equivalent) for the NRW ~~Skills Programme~~ Training from ~~municipalities and~~ DWS/IBTC and Stakeholders. ~~3-5. Schedule Training of Trainer (facilitator) (TOT), Assessors and Moderators for NRW Skills Programme at IBTC.~~ 3-~~3~~4. Develop training yard for the NRW ~~Skills Programme~~ Training at IBTC. 3-~~4~~5. Procure equipment, instruments/tools and materials for the NRW ~~Skills Programme~~ Training ~~at IBTC~~. 3-~~5~~6. Develop ~~training~~teaching/learning materials for the NRW ~~Skills Programme~~ Training ~~at IBTC~~ with incorporating good practices from baseline survey into the materials if any. 3-~~6~~7. Schdule and conduct ~~TOT~~ Facilitator Technical Meetings by both JICA Experts and ~~South African~~ facilitators for the NRW ~~Skills Programme~~ Training ~~at IBTC~~. 3-~~7~~8. ~~Develop~~ Prepare for conducting the NRW ~~Skills Programme~~ Training ~~as an accredited programme by SETA~~ (schedule, budget plan, applying for releasing fund, recruiting participants and etc.). ~~a). Apply for registration of facilitators of NRW Skills Programme as assessor/moderator/facilitator.~~ ~~b) Prepare Quality Management System of NRW Skills Programme at IBTC.~~ ~~c) Apply for accreditation of NRW Skills Programme to SETA.~~ ~~3-11. Prepare Annual Plan of NRW Skills Programme including budget plan at IBTC.~~ ~~3-12. Recruit participants from Municipalities through DWS/SALGA for NRW Skills Programme at IBTC.~~ 3-~~12~~9. Conduct the NRW Training~~s~~ by ~~South African~~ facilitators ~~for NRW Skills Programme at IBTC~~ with support from JICA Experts. 3-~~13~~10. Monitor ~~implementation of~~ the NRW ~~Skills Programme~~ Training and feed the results back ~~into Annual Plan and Programme~~ under training improvent cycle. 3-~~14~~11. Verify effects of the NRW ~~Skills Programme~~ Training ~~and provide necessary support by JICA Experts and IBTC~~ in sampled Municipality~~(ies) if any~~.	**2. Land, Building and Facilities** 1) Office space and facilities for JICA Experts, including water, electricity, internet connection and air conditioners if necessary 2) Land for training yard 3) Other facilities mutually agreed upon as necessary **3. Local Cost** 1) Allowance, accommodation, travelling cost and foods for project personnel, facilitators and trainees in South Africa (born by DWS, Municipalities, etc.) 2) Administration and operational costs including cost for demurrage at local customs point and licensing of equipment/instruments if necessary 3) Other costs mutually agreed upon as necessary	**2. Facilities at IBTC** 1) Training yard 2) Web site development and maintenance 3) Other facilities mutually agreed upon as necessary **3. Equipment, instruments, tools and materials at IBTC** 1) ~~Portable ultrasonic~~ Bulk water flow meter 2) Leak detection equipment/instruments 3) Tools for training 4) Materials such as pipe, fittings, valve, meter and etc. 5) Other equipment, instruments, tools and materials mutually agreed upon as necessary **4. Training** 1) Training in Japan 2) Training in the third country if necessary	**Issues & Countermeasures** **1. Delay of the Project (Phase-1)** The Project has been delayed for six months. The Project needs to extend the Phase 1 for 9 months (The Project will be over in the middle of August 2020). **2. The NRW Training based on the result of Baseline Survey** The Project Team concluded to develop the NRW Training not as accredited qualification-oriented training but as problem solving-oriented training with immediate impacts for municipalities. This change of a way of developing our training affects overall goal, project purpose, outputs, project activities and schedule, so concepts and contents of the NRW Training as well as necessary revision of PDM and PO need to be presented to JCC for approval. **3. Institutional Collaboration with Stakeholders to conduct the NRW Training** The Project communicates with and encourages stakeholders to ensure facilitators and workplace of the NRW Training by concluding memorandums of understanding between DWS and stakeholders. Also, in order to set up the site for workplace if needed, the Project makes the NRW Training coupled with existing DWS's Schedule 6B funded municipalities suffering from challenges. DWS needs to takes leadership to ensure facilitators and workplace. **4. Assignment of Engineering/Technical Personnel for the NRW Training** Engineering/technical personnel and other necessary personnel for the NRW Training are required to be assigned to develop the NRW Training as well as to conduct the NRW Training actually. DWS needs to assigns dedicated engineering/technical personnel by the end of August 2018 as well as nominate and assign other necessary personne appropriately and on a timely basis. **5. Recent Absence of SALGA and Reactivation of Collaboration** The Project have suffered from lack of arrangement and coordination with municipalities because of little observance by SALGA in spite of taking-over by DWS The Project encourages SALGA to nominate successor immediately and reactivate collaboration among the JCC and Project members. DWS needs to take responsibility of involving SALGA, then exchange the memorandum of understanding with SALGA to clarify its roles and ensure collaboration during the period of the Project. **6. Project Management** Now that Project advances to more practical stage, project management need to be improved. the both South African and Japanese side need toreview roles and responsibility of the Project Team members and the JICA Experts, clarify task team and working groups, and improve

Note: Indicators will be discussed and finalized based on the baseline survey at the beginning of the Project and be agreed at Joint Coordinating Committee (JCC). As an all-inclusive term, "Facilitator" in the Project may act as facilitator, trainer, mentor, coach and supervisor.

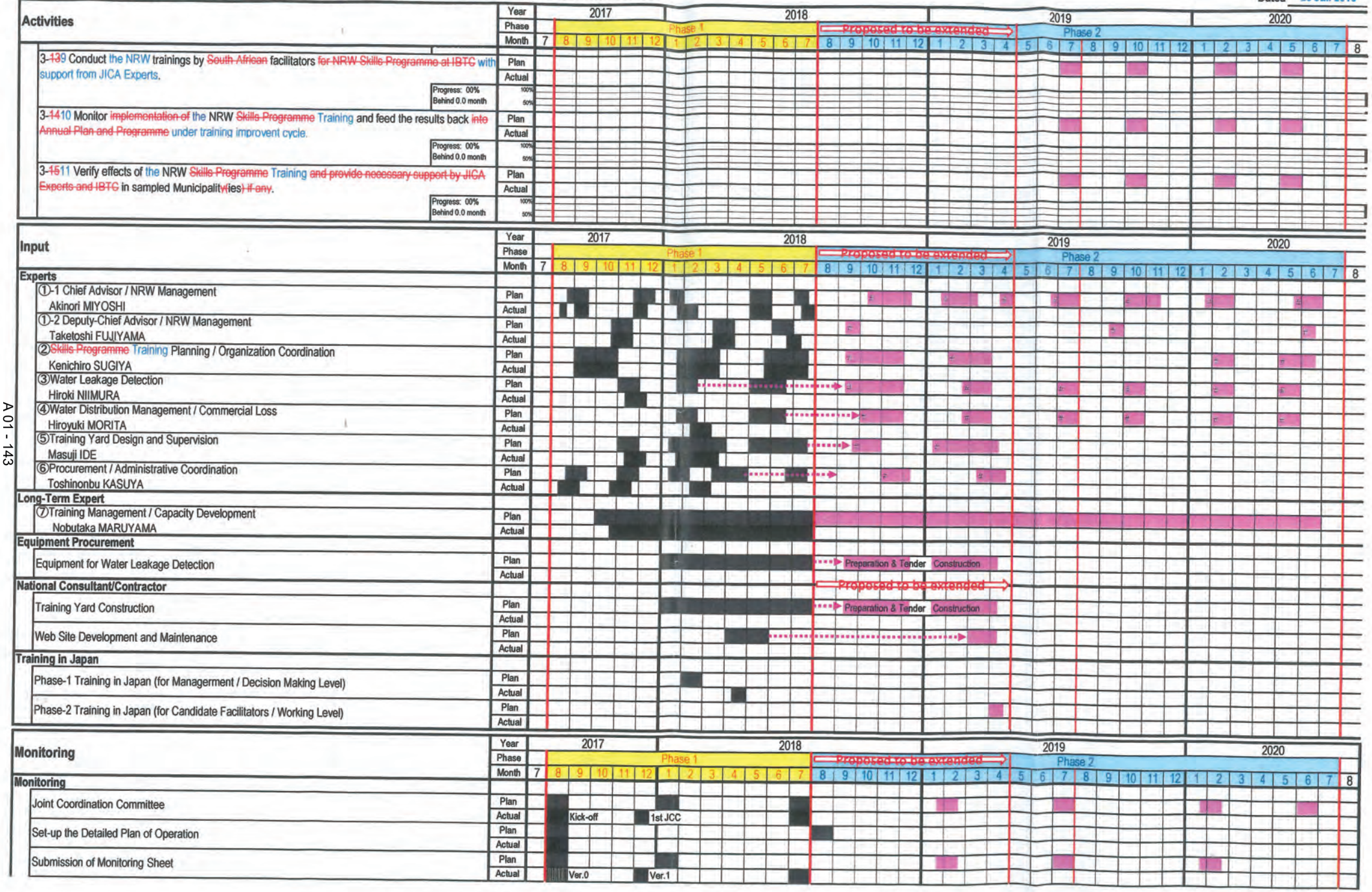
Project Monitoring Sheet II (Revision of Plan of Operation)

PO~~1~~2

Version ~~1~~2

Dated 25 Jul. 2018

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water



Project Monitoring Sheet II (Revision of Plan of Operation)

PO12
Version 12
Dated 25 Jul. 2018

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water

Activities		Year	2017						2018							2019												2020							
		Phase							Phase 1							Proposed to be extended					Phase 2														
		Month	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8
Monitoring Mission from Japan		Plan																																				
		Actual																																				
Joint Monitoring		Plan																																				
		Actual			Ver.0				Ver.1																													
Post Monitoring		Plan																																				
		Actual																																				
Reports/Documents																																						
Project Progress Report		Plan													▲													▲										
		Actual																																				
Project Completion Report		Plan																																			▲	
		Actual																																				
Project Brief Note		Plan													▲													▲									▲	
		Actual																																				
Public Relations																																						
Web Site		Plan																																				
		Actual																																				
Press Release, Press Conference, Public Relations Magazine, Newsletter		Plan																																				
		Actual																																				

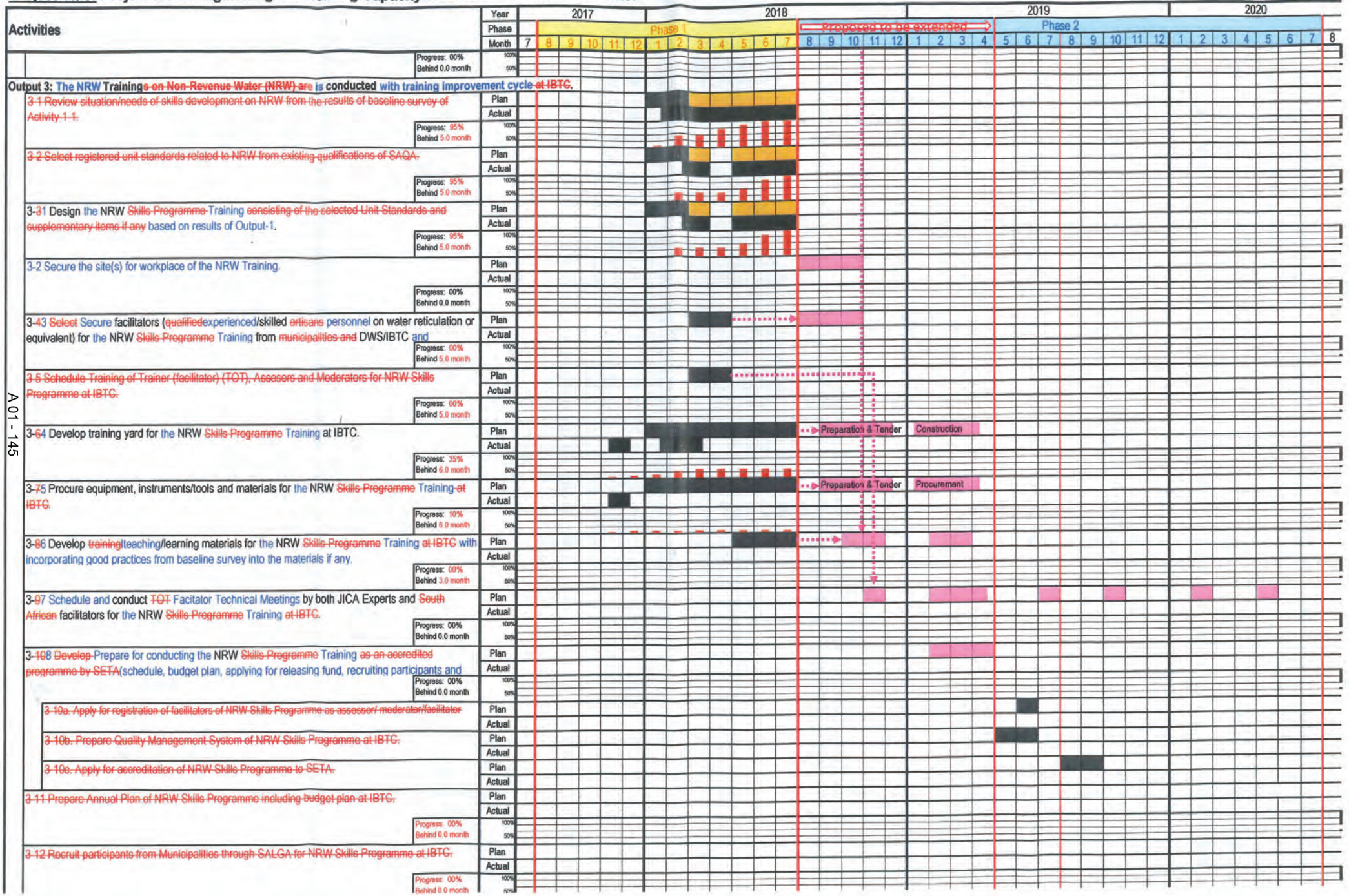
Project Monitoring Sheet II (Revision of Plan of Operation)

PO~~1~~2

Version ~~1~~2

Dated 25 Jul. 2018

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water



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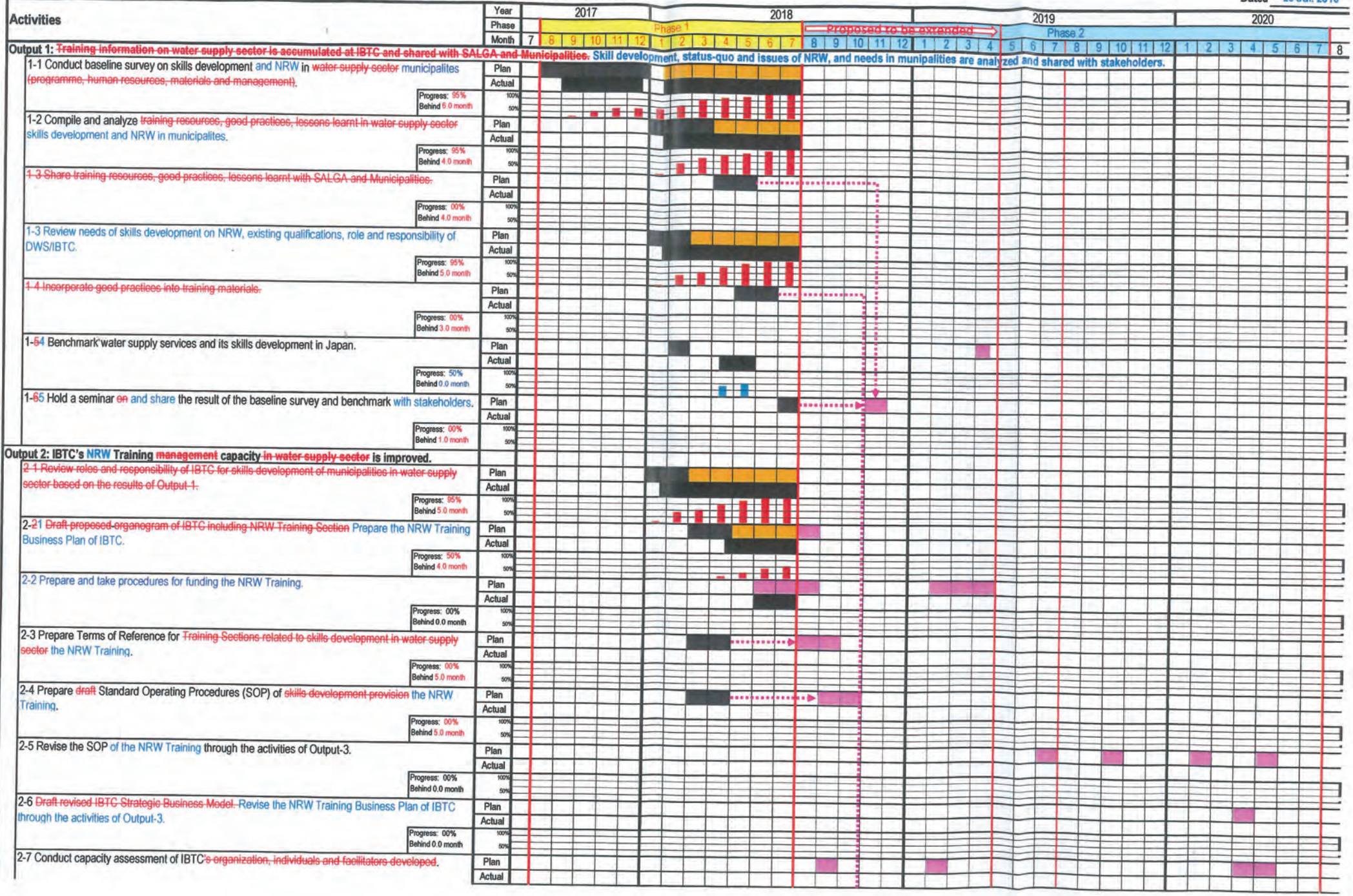

Appendix 7

Project Monitoring Sheet I (Revision of Project Design Matrix)

PM Form 3-2 Project Monitoring Sheet I
PDM_2

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water
Project Period: August 2017 to July 2020 (36 months)
Implementing Organization: Department of Water and Sanitation (DWS) / IBTC
Dicrect Beneficiaries: DWS, IBTC and its personnel, Facilitators selected
Indicrect Beneficiaries: Municipalities
End Beneficiaries: Customers / Consumers of water supplied by Municipalities
Project Site: Gauteng Province

Version 2
Dated 25 Jul. 2018

Monnitoring: 25 Jul. 2018

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption	Achievement	Remarks
<Overall Goal>					
Non-Revenue Water (NRW) management skills are utilized in NRW reduction projects of participating municipalities.	1. NRW reduction projects using developed NRW management skills in participating municipalities are increased. 2. NRW ratio in participating municipalities is decreased.	1. Monitoring report of participating municipalities 2. DWS's No-Drop report and/or report from participating municipalities		None.	
Project Purpose					
NRW management skills are developed for participating municipalities through the NRW Training by IBTC.	1. No. of the NRW Training at IBTC is increased. 2. No. of water balance submission is increased. 3. No. of NRW reduction plan in participating municipalities is increased.	1. IBTC's annual training report 2&3. DWS's No-Drop report and/or report from participating municipalities	- Dramatic reduction of budget and public grants on skills development for Municipalities does not happen.	None.	
<Outputs>					
1. Skill development, status-quo and challenges of NRW, and needs in municipalities are analyzed and shared with stakeholders.	1-1. Analyzed/organized information of skills development of municipalities is submitted to DWS (list of no. of staff, attended training, mentor resources, training providers, manuals, workshops and yards, subsidies/grants, good practices, etc.) 1-2. Analyzed/organized information of NRW and needs of municipalities is submitted to DWS. 1-3. Benchmarked matrix of Japan and South Africa on water services is submitted to DWS (comparative feature strength/weakness, methodology, etc.)	1-1&2. Baseline survey report and training curriculum 1-3. Benchmark report 1-4. Seminar report and presentations		- Baseline Survey report was drafted. - Benchmark report was prepared, then submitted to the DWS management.	
2. IBTC's NRW Training capacity is improved.	2-1. Appropriate organizational structure for the NRW Training is established at IBTC. 2-2. No. of revision of Standard Operation Procedures (SOP) of the NRW Training is increased. 2-3. No. of revision of the NRW Training Business Plan is increased.	2-1. Capacity assessment report and/or organogram of IBTC 2-2. Standard Operation Procedures (SOP) of the NRW Training 2-3. The NRW Training Business Plan		None.	
3. The NRW Training is conducted with training improvement cycle.	3-1. No. of Facilitator Technical Meeting is increased. 3-2. No. of NRW Training is increased. 3-3. Trainee's satisfaction with the NRW Training is increased. 3-4. No. of feedback/utilization of skills trained into water services at municipalities is increased.	3-1&2. IBTC annual report 3-3. Training evaluation questionnaire to trainees (training management/contents and individual achievement) 3-4. Survey of participating municipalities in sampled municipalities		None.	

Note:

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Activities	Inputs		Important Assumption	
Activities for Output 1 1-1. Conduct baseline survey on skills development and NRW in municipalities. 1-2. Compile and analyze skills development and NRW in municipalities. 1-3. Review needs of skills development on NRW, existing qualifications, roles and responsibility of DWS/IBTC. 1-4. Benchmark water supply services and its skills development in Japan. 1-5. Hold a seminar and share on the results of the baseline survey and benchmark with stakeholders.	**The South African Side** **1. Project Personnel** 1) JCC Chairperson: Chief Director of Global Cooperation, DWS 2) Project Director (PD): Director of NWRI, DWS 3) Co-Project Director (PD): SALGA 4) Project Manager (PM): Centre Manager, IBTC 5) Co-Project Manager (PM): Director, Water Use Efficiency 6) Training Manager, IBTC 7) Quality Assurer, IBTC 8) Dedicated NRW Training personnel, IBTC 9) Municipal Coordinator (Technical), SALGA 10) Municipal Coordinator (HRD), SALGA 11) Facilitator 12) Candidate Facilitator 13) Other personnel mutually agreed upon as necessary	**The Japanese Side** **1. JICA Experts** 1) Chief Advisor / NRW Management 2) Deputy Chief Advisor / NRW Management 3) Training Planning / Organization Coordination 4) Water Leakage Detection 5) Water Distribution Control / Commercial Loss 6) Training Yard Design and Supervision 7) Procurement / Administrative Coordination 8) Training Management / Human Resources Development 9) Other Expert(s) if necessary	**Pre-Conditions** - DWS and SALGA agree on their collaboration and cooperation for the Project - DWS allocates/ assigns personnel in charge of NRW Skills Programme at IBTC.	
Activities for Output 2 2-1. Prepare the NRW Training Business Plan. 2-2. Prepare and take procedures for funding the NRW Training. 2-3. Prepare Terms of Reference for the NRW Training. 2-4. Prepare Standard Operation Procedures (SOP) of the NRW Training. 2-5. Revise the SOP of the NRW Training through the activities of Output-3. 2-6. Revise the NRW Training Business Plan through the activities of Output-3. 2-7. Conduct capacity assessment of IBTC.				
Activities for Output 3 3-1. Design the NRW Training based on the results of Output-1. 3-2. Secure the site(s) for workplace of the NRW Training. 3-3. Secure facilitators (experienced/skilled personnel on water reticulation or equivalent) for the NRW Training from DWS/IBTC and stakeholders. 3-4. Develop training yard for the NRW Training at IBTC. 3-5. Procure equipment, instruments/tools and materials for the NRW Training. 3-6. Develop teaching/learning materials for the NRW Training with incorporating good practices from baseline survey into the materials if any. 3-7. Prepare and conduct Facilitator Technical Meetings by both facilitators and JICA Experts for the NRW Training. 3-8. Prepare for conducting the NRW Training (schedule, budget plan, applying for releasing fund, recruiting participants and etc.). 3-9. Conduct the NRW Training by facilitators with support from JICA Experts. 3-10. Monitor the NRW Training and feed the results back under training improvement cycle. 3-11. Verify effects of the NRW Training in sampled municipalities.	**2. Land, Building and Facilities** 1) Office space and facilities for JICA Experts, including water, electricity, internet connection and air conditioners if necessary 2) Land for training yard 3) Other facilities mutually agreed upon as necessary **3. Local Cost** 1) Allowance, accommodation, travelling cost and foods for project personnel, facilitators and trainees in South Africa (born by DWS, municipalities, etc.) 2) Administration and operational costs including cost for demurrage at local customs point and licensing of equipment/instruments if necessary 3) Other costs mutually agreed upon as necessary	**2. Facilities** 1) Training yard 2) Web site development and maintenance 3) Other facilities mutually agreed upon as necessary **3. Equipment, instruments, tools and materials** 1) Bulk water flow meter 2) Leak detection equipment/instruments 3) Tools for training 4) Materials such as pipe, fittings, valve, meter and etc. 5) Other equipment, instruments, tools and materials mutually agreed upon as necessary **4. Training** 1) Training in Japan 2) Training in the third country if necessary		**Issues & Countermeasures** **1. Delay of the Project (Phase-1)** The Project has been delayed for six months. The Project needs to extend the Phase 1 for 9 months (The Project will be over in the middle of August 2020). **2. The NRW Training based on the result of Baseline Survey** The Project Team concluded to develop the NRW Training not as accredited qualification-oriented training but as problem solving-oriented training with immediate impacts for municipalities. This change of a way of developing our training affects overall goal, project purpose, outputs, project activities and schedule, so concepts and contents of the NRW Training as well as necessary revision of PDM and PO need to be presented to JCC for approval. **3. Institutional Collaboration with Stakeholders to conduct the NRW Training** The Project communicates with and encourages stakeholders to ensure facilitators and workplace of the NRW Training by concluding memorandums of understanding between DWS and stakeholders. Also, in order to set up the site for workplace if needed, the Project makes the NRW Training coupled with existing DWS's Schedule 6B funded municipalities suffering from challenges. DWS needs to takes leadership to ensure facilitators and workplace. **4. Assignment of Engineering/Technical Personnel for the NRW Training** Engineering/technical personnel and other necessary personnel for the NRW Training are required to be assigned to develop the NRW Training as well as to conduct the NRW Training actually. DWS needs to assigns dedicated engineering/technical personnel by the end of August 2018 as well as nominate and assign other necessary personne appropriately and on a timely basis. **5. Recent Absence of SALGA and Reactivation of Collaboration** The Project have suffered from lack of arrangement and coordination with municipalities because of little observance by SALGA in spite of taking-over by DWS The Project encourages SALGA to nominate successor immediately and reactivate collaboration among the JCC and Project members. DWS needs to take responsibility of involving SALGA, then exchange the memorandum of understanding with SALGA to clarify its roles and ensure collaboration during the period of the Project. **6. Project Management** Now that Project advances to more practical stage, project management need to be improved. the both South African and Japanese side need toreview roles and responsibility of the Project Team members and the JICA Experts, clarify task team and working groups, and improve

Note: Indicators were discussed and finalized based on the baseline survey and were agreed at Joint Coordinating Committee (JCC). As an all-inclusive term, "Facilitator" in the Project may act as facilitator, trainer, mentor, coach and supervisor.

Project Monitoring Sheet II (Revision of Plan of Operation)

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water

PO2
Version 2
Dated 25 Jul. 2018

Activities		Year	2017	2018	2019	2020
		Phase		Phase 1		Phase 2
		Month	7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8
Output 1: Skill development, status-quo and challenges of NRW, and needs in municipalities are analyzed and shared with stakeholders.						
1-1 Conduct baseline survey on skills development and NRW in municipalities.	Progress: 95% Behind 6.0 month	Plan				
		Actual				
1-2 Compile and analyze skills development and NRW in municipalities.	Progress: 95% Behind 4.0 month	Plan				
		Actual				
1-3 Review needs of skills development on NRW, existing qualifications, roles and responsibility of DWS/IBTC.	Progress: 95% Behind 5.0 month	Plan				
		Actual				
1-4 Benchmark water supply services and its skills development in Japan.	Progress: 50% Behind 0.0 month	Plan				
		Actual				
1-5 Hold a seminar and share on the results of the baseline survey and benchmark with stakeholders.	Progress: 00% Behind 1.0 month	Plan				
		Actual				
Output 2: IBTC's NRW Training capacity is improved.						
2-1 Prepare the NRW Training Business Plan.	Progress: 50% Behind 4.0 month	Plan				
		Actual				
2-2 Prepare and take procedures for funding the NRW Training.	Progress: 00% Behind 0.0 month	Plan				
		Actual				
2-3 Prepare Terms of Reference for the NRW Training.	Progress: 00% Behind 5.0 month	Plan				
		Actual				
2-4 Prepare Standard Operation Procedures (SOP) of the NRW Training.	Progress: 00% Behind 5.0 month	Plan				
		Actual				
2-5 Revise the SOP of the NRW Training through the activities of Output-3.	Progress: 00% Behind 0.0 month	Plan				
		Actual				
2-6 Revise the NRW Training Business Plan through the activities of Output-3.	Progress: 00% Behind 0.0 month	Plan				
		Actual				
2-7 Conduct capacity assessment of IBTC.	Progress: 00% Behind 0.0 month	Plan				
		Actual				
Output 3: The NRW Training is conducted with training improvement cycle.						
3-1 Design the NRW Training based on the results of Output-1.	Progress: 95% Behind 5.0 month	Plan				
		Actual				
3-2 Secure the site(s) for workplace of the NRW Training.	Progress: 00% Behind 0.0 month	Plan				
		Actual				
3-3 Secure facilitators (experienced/skilled personnel on water reticulation or equivalent) for the NRW		Plan				

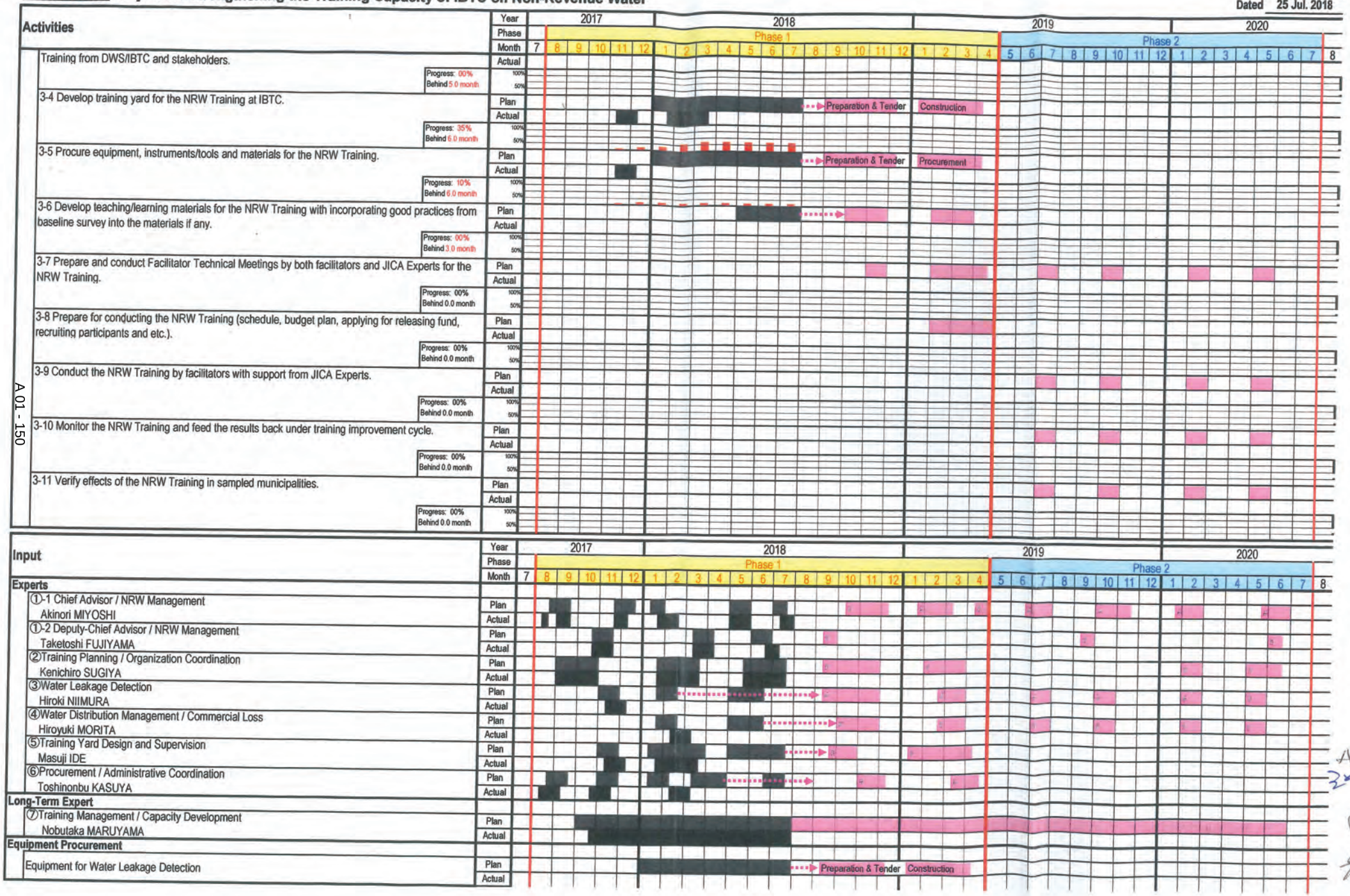
Project Monitoring Sheet II (Revision of Plan of Operation)

PO2

Version 2

Dated 25 Jul. 2018

Project Title: Project for Strengthening the Training Capacity of IBTC on Non-Revenue Water



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