

S13.1-5 PRESENTATION MATERIAL OF

5TH JCC



The Project for Improvement of NRW Reduction Capacity for SW

5th JCC

Overview of the Project

22 June 2016

Contents

1. Brief of the Project
2. Collaboration between Two-Year Plan and JICA NRW Reduction Project
3. Framework of the Project
4. Project Design (1) to (3)
5. Capacity Development & Individual Action Plan

1. Brief of the Project

Counterpart: Solomon Water

Project Period: October 2012 to June 2016

Collaboration: Two-year Plan of SW sponsored by DFAT

Joint Coordinating Committee (JCC)

Roles and Responsibilities

- Coordination between Solomon Islands and Japan
- Deliberation of major issues and provision of advice
- Monitoring and evaluation of the Project

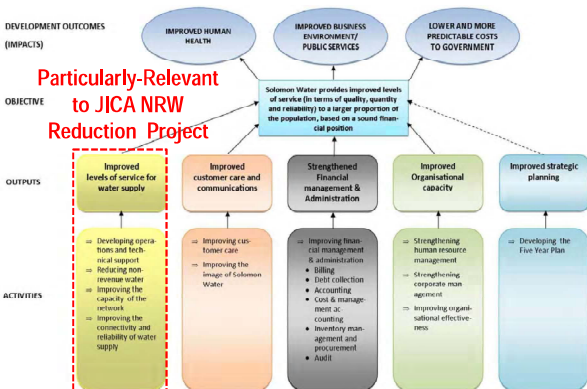
Previous/Scheduled JCCs

- 1st JCC Meeting on 24 April 2013
- 2nd JCC Meeting on 27 November 2013
- 3rd JCC Meeting on 19 March 2015
- 4th JCC Meeting on 26 August 2015
- 5th JCC Meeting on 22 June 2016 (Today)

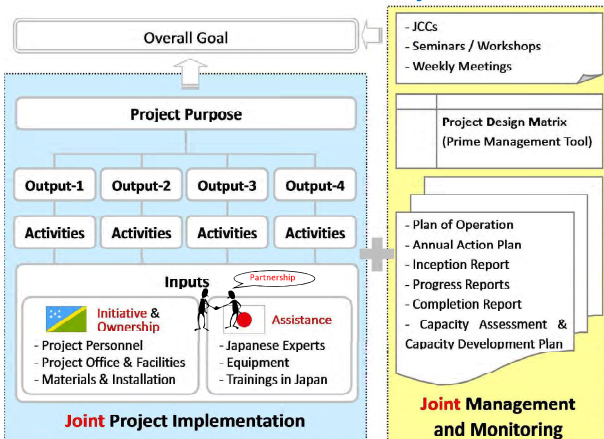
Work Schedule

Year	2012				2013				2014				2015				2016																
Month	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
Phase	Phase 1				Phase 2				Phase 3				Phase 4				Phase 5																
Output-1	[Progress Bar]																																
Output-2	[Progress Bar]																																
Output-3	[Progress Bar]																																
Output-4	[Progress Bar]																																
Training in Japan	[Icons for training events]																																
Reporting	[Icons for reports]																																
Project Management	[Icons for JCC meetings]																																

2. Collaboration between Two-Year Plan and JICA Project



3. Framework of the Project



4. Project Design (1)

Overall Goal

SW's service levels are improved and SW's revenue is increased.

Objectively Verifiable Indicators:

- The NRW Reduction Activities are carried on by Task Force composed of relevant Departments or Units.

Project Purpose

SW is assisted to achieve its target of reducing the NRW ratio in Honiara to 30% by 2015.

Objectively Verifiable Indicators:

- The NRW ratio is reduced by 30 points in each pilot project area, selected DMAs and/or LCZs.
- Regarding the pilot project areas, selected DMAs, and/or LCZs where the NRW ratio before the implementation of NRW reduction measures are less than 30%, the NRW reduction measures are implemented in accordance with features of each area and/or zone, so that effectiveness of the NRW reduction measures are validated.

4. Project Design (2)

Outputs

1. Planning process of SW for NRW reduction is systematized.
2. The procedure for NRW reduction is established through the pilot areas and LCZs.
3. NRW reduction is implemented in accordance with the procedure in pilot project areas and/or LCZs in the selected DMAs, and then improved NRW ratio is monitored and maintained.
4. Water meter reading and billing process management are improved.

Inputs

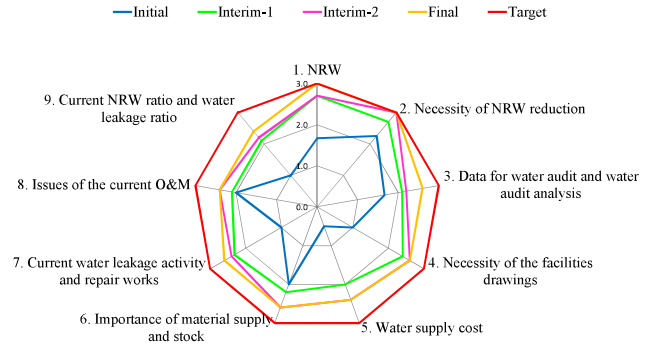
4. Project Design (3)

Solomon Islands side

- **Personnel:** 27 members (NRW Management Team: 6, NRW Action Team: 21)
 - **Project office and facilities** for the project implementation, including office furniture, electricity and communication equipment
 - **Pipes, fittings and other materials** for NRW reduction measures such as repair and meter installation
 - **Installation** of flow meters and customer meters, and repair works
- Japanese side
- **Expert:** 8 experts
 - **Equipment:** bulk flow meters, sluice valves for isolation, ultrasonic flow meters, data loggers, leakage detection equipment, GPSs, office automation equipment, customer meters, pickup trucks, an excavator and etc.
 - **Training in Japan:** 3 times for 12 trainees in total (April and October 2013, and June 2014), and also group trainings

Capacity Development Graph

(Example for One of NRW Action Team Member)



5. Capacity Development & Individual Action Plan (IAP)

Individual Action Plan (IAP)

MR XXXXXX NRW- Technical Sub Team				
Main Activities	Verifiable Indicator	Methods of Implementation	Achievement (Self Evaluation)	Achievement (Evaluation by Manager)
1) Contribution to Water Supply Services of Solomon Water (Essential)				
Presentation of System Operations to Operations Team	A) Once a month B) Once every 2 months C) Once a year	Preparation of Handouts Presentation of System Scenario and changes SOP Preparation		
2) Contribution to the Project on NRW Reduction (Essential)				
Audit for DMA	A) Complete Water Audit for DMA within a month of Completion B) Complete within 2 months of completion C) Complete within 4 months of completion	Get Baseline information Get Consumption Data from NCS/GIS Get illegal data from field survey Get no. of customers from billing and meter readers Prepare Audit before and after countermeasure		
3) Challenging Target (Voluntary)				
4) Self Development or Social Action (Voluntary)				

Example

Main Activities	Verifiable Indicator	Methods of Implementation	Achievement															
1. Contribution to water supply services of Solomon Water - In order to contribute to Solomon Water, I will develop relevant information to assist our team to do awareness to schools and communities (Township)	A. 15hrs/one month B. 10hrs/ one month C. 5hrs/ month and overtime	<table border="1"> <tr> <th></th> <th>July</th> <th>Oct</th> <th>Dec</th> <th>March</th> </tr> <tr> <td>1.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> <p>- Good teamwork</p>		July	Oct	Dec	March	1.					2.					B. - Questions asked by students are mainly on the operational part of SW. Our team has involved relevant departments to assist us in our awareness program. - By involving other departments we also learn a lot from them.
	July	Oct	Dec	March														
1.																		
2.																		
2. Contribution to public project - In order to contribute to pilot project our team have distributed NRW pamphlets to Pilot sites and have involve other team members - When opportunity to assist in circulating the pamphlets. - Notice and information updates posted on our Facebook page and Solomon Star News section	A.10 hrs./Once a Month B.11hrs/ Twice a Month C. 9hrs/ month in overtime	<table border="1"> <tr> <th></th> <th>July</th> <th>Oct</th> <th>Dec</th> <th>March</th> </tr> <tr> <td>1.</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2.</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>		July	Oct	Dec	March	1.					2.					B. Pamphlets was distributed to NRW Pilot Sites. Notice and information updates posted on our Facebook and Solomon Star
	July	Oct	Dec	March														
1.																		
2.																		

The Project for Improvement of NRW Reduction Capacity for SW

Achievement of the Project : 15 pilot projects and 4 DMA.

5th JCC

Date: 22nd JUNE 2016

Venue: Solomon Water Conference Room

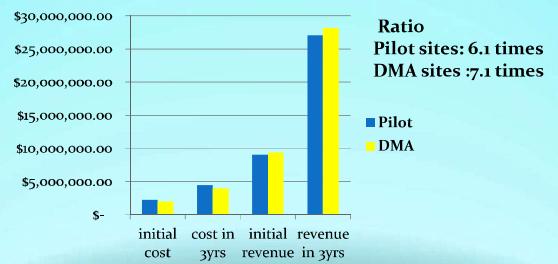
1. Achievements Reduction Point of NRW Ratio

No	Area No	Area Name	NRW Ratio (%)		Percentage Point
			Before	After	
1	No.9	White River- Namo Ruka	86.5	32.2	54.3
2	No.10	Independence Valley	57.7	9.9	47.9
3	No.3	Lenggakiki	62.0	33.2	28.8
		After additional Countermeasures		14.7	47.3
4	No.5	Mbokonavera-1	53.1	14.7	38.5
5	No.14	Tuvaruhu-1	65.4	41.4	24.0
		After additional Countermeasures		11.0	54.4
6	No.15	Tuvaruhu-2	67.2	20.5	46.7
7	No.6	Vavaea Ridge	63.1	27.2	35.8
8	No.4	Mbokona	50.2	19.2	31.0
9	No.8	Mbaranamba	23.2	3.5	19.7
10	No.2	Mhuas Valley	50.9	6.8	44.1
11	No.11	Bahai Kutum	38.6	16.2	42.4
12	No.7	Panatina Valley	37.9	6.7	31.2
13	No.12	Naha 2	51.7	15.6	36.1
14	No.13	Naha 3	60.9	25.8	35.1
15	No.1	FFA Kola Road	47.1	14.9	32.2
16	No.6	Tasahe A&B (DMA)	86.0	44.5	41.5
		After Pressure Control		33.0	53.0
17	No.17	West Kolaa Ridge A (DMA)	60.4	49.7	10.7
		After additional Countermeasures		20.3	40.1
18	No.10	Lengaki DMA	42.6	23.6	20
19	No.07	Tasahe C DMA	38.1	7.5	30.6

Contents

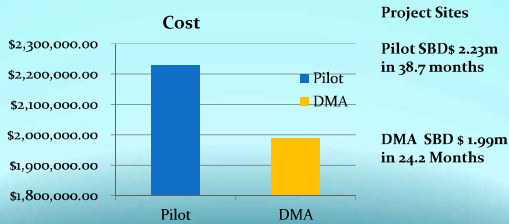
- Project Output
 - Output 1: Planning process of SW for NRW reduction is systemized.
 - Output 2: The procedure for NRW reduction is established through the pilot project areas and LCZs.
 - Output 3: NRW reduction is implemented in accordance with the procedure in pilot project areas and/or LCZs in the selected DMAs, and then improved NRW ratio is monitored and maintained.
 - Output 4: Water meter reading and billing process management are improved.

Increase in Revenue Water Volume as a result of NRW Reduction Activities in 15 Pilot Areas and 4 DMAs



Output 1 "Planning process of SW for NRW Reduction is systemized"

- Indicator 1.1 Annual Budget for NRW reduction is secured in the Pilot projects areas and LCZs.



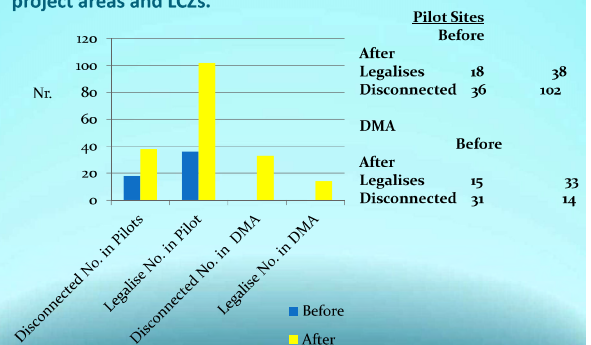
Output-2: The procedure for NRW reduction is established through the pilot areas and LCZs

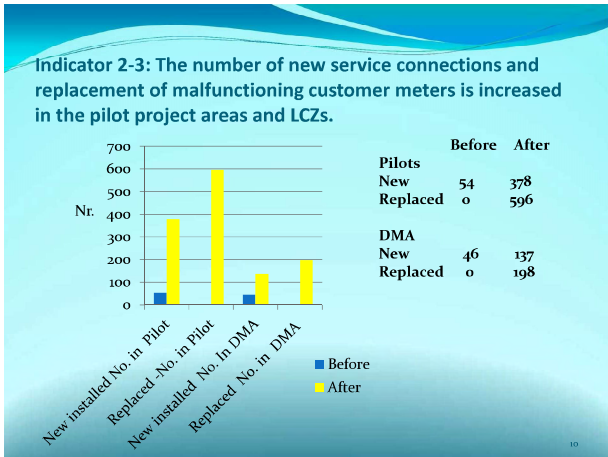
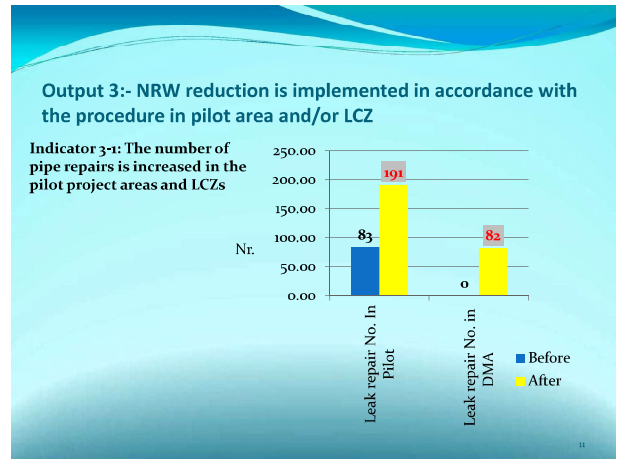
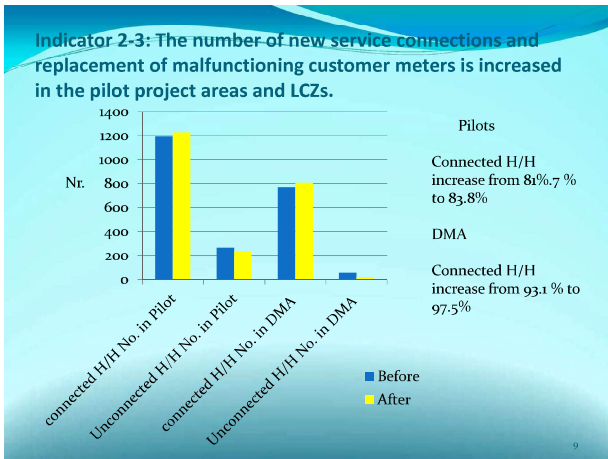
- Indicator 2-1: Manuals for NRW reduction measures are prepared and revised as when it is necessary, including workflow of DMA-based monitoring and maintenance for improved NRW ratio.
 - The manual for NRW reduction consists of four components: Manual of NRW Reduction Measures, Handbook for Operation and Maintenance of Equipment on Leak Detection, Rule Book of Database and O&M Manual of Database.
 - SW has used, improved and updated the manuals in consideration for user-friendliness.

Output 1. "Planning process of SW for NRW Reduction is systemized"

- Indicator 1-2: The strategic implementation (rolling-out) plan for NRW reduction is approved and reviewed as when it is necessary by management of SW.
 - The strategic implementation (rolling-out) plan (hereinafter "the strategic plan") prepared by SW was reviewed and approved in June 2016.
 - SW states that the strategic plan will be utilized and reviewed afterwards by its own effort.

Indicator 2-2: The number of authorizations and disconnections of illegal connections is increased in the pilot project areas and LCZs.





Output 3:- NRW reduction is implemented in accordance with the procedure in pilot area and/or LCZ

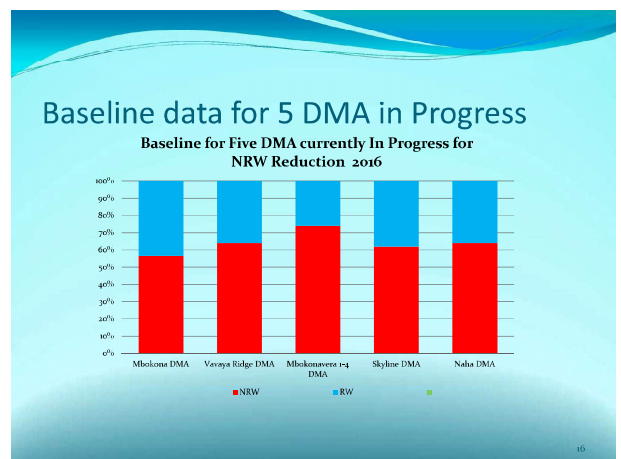
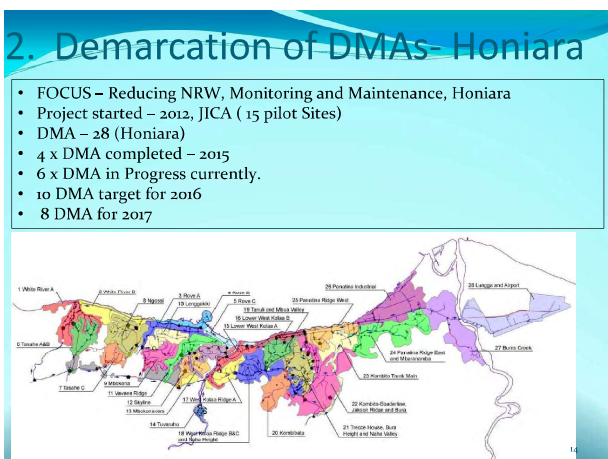
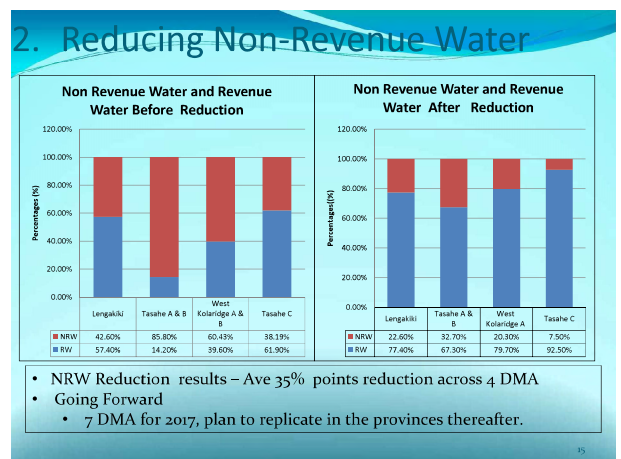
Indicator 3-2: Data and records of DMA-based monitoring and maintenance for improved NRW ratio are accumulated to sustain NRW reduction activities in the selected DMA.

➤ Data for DMA-based monitoring and maintenance have been accumulated and analyzed for taking NRW reduction measures by graphing.

Output 4- Water meter reading and billing process management are improved.

Indicator 4-1: Standard operating procedures (SOP) and training materials are formulated.

- Initial SOP for meter reading and billing system prepared in April 2013
- This will be revised to include lessons learned through routine work.
- Photo taken by meter readers
- Upload of Unbilled customers in MIS



Solomon Water JICA

Monitoring Maintenance Activities on NRW reduction

5th JCC

Date: 22nd JUNE 2016
 Venue: Solomon Water Conference Room

Presentation Content

- DMA Monitoring and Maintenance
- Advantages of Monitoring and Maintenance
- Factors of Monitoring
- DMA Monitoring
- Workflow of Monitoring and Maintenance
- Current DMA Monitoring results
- Future forward looking for Monitoring and Maintenance
- Proposed Support Organisational Structure

Factors of DMA monitoring

- 1) Minimum Night Flow - (Telemetry System, m3/day)
- 2) System Input Volume - (Telemetry System, m3/day)
 - (Manual reading of bulk meters)
- 3) Monthly Billed Water – (Billed data, m3/day)

DMA monitoring

Frequency of DMA Monitoring	Factors		
	System Input Volume	Monthly Billed Water	Minimum Night Flow
Monthly	✓	✓	
Weekly	✓		✓
Daily	✓		✓

DMA Monitoring and Maintenance

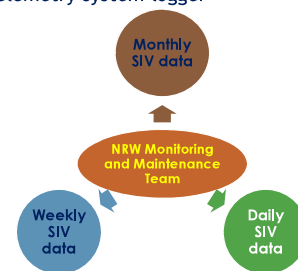
- Involves:
 - NRW = Monitor SIV – Billed Consumption (or MNF)
 - Maintenance of DMA system components
 - ✓ Disconnection & New Connection plus current active customers.
 - ✓ Legalising of illegal users
 - ✓ Disconnection of illegal users
 - ✓ Fixing of leakages on pipelines, water meters etc.
 - ✓ Do meter inaccuracy test and replacement of malfunction water meters
 - ✓ Upgrade & replacement of pipeline

Advantages of monitoring and maintenance

- Low NRW is maintained in the DMAs
- Improve water pressure to customers
- Increase revenue due to improved water supply duration
- Reduce maintenance cost due to pro-active approached.
- Reduce duration of pump operations

1.0 System Input Volume (SIV)

- Daily manual reading of bulk meters installed at inlet of the DMA
- Download & analyse data from Electro Magnetic flow meter & Telemetry system logger



2.0 Monthly Billed Water

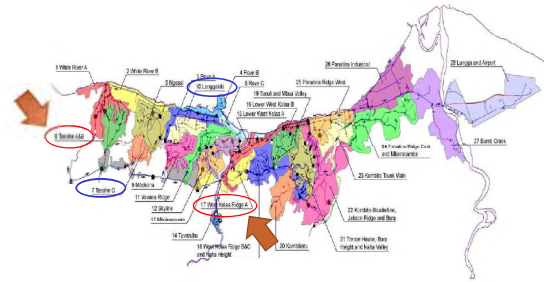
- Monthly billed data of all active customers in the DMA
- System Input Volume (SIV) data
- NRW = SIV - Monthly Billed Water

3.0 Manners of Monitoring by NRW Ratio of Primary NRW Reduction Activity

After countermeasure in the primary NRW reduction activities	Manner of Monitoring
NRW ratio ≤ 20% (Low)	-> Monthly monitoring of water flow rate
NRW ratio ≤ 25% (Moderate)	-> Weekly monitoring of water flow rate
NRW ratio > 25% (High)	-> Daily monitoring of water flow rate

Current DMA monitoring results

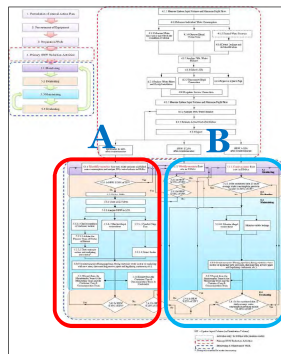
Demarcation of 28 DMAs



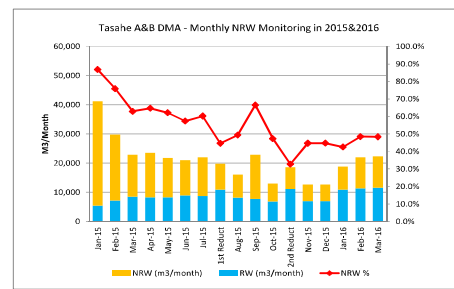
Work Flow for process of DMA monitoring

Monitoring Work Flow_JCC Presentation - Copy.xlsx

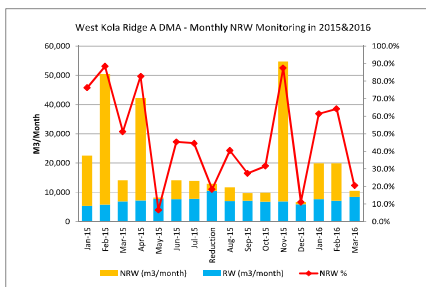
- A. NRW calculated base on monthly consumption
- B. NRW calculated base on Minimum Night Flow - flow rate



1.0 Monthly Monitoring - Tasahe A & B DMA



2.0 Monthly Monitoring-West Kola Ridge A DMA

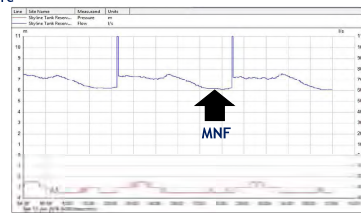


4.0 Daily Monitoring-West Kola Ridge A DMA

- Monitoring of Minimum Night Flow (MNF) using Telemetry System which send SMS message after 24 hours – demonstrate flow volume and water pressure

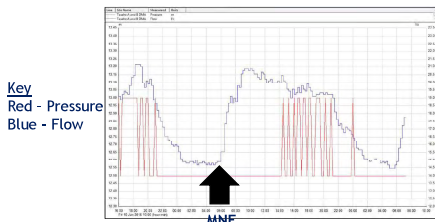
Key: Red - Pressure
Blue - Flow

$$MNF(m^3/min) \times 60 \times 24 / SIV (m^3/day) = NRW \text{ Ratio}$$



3.0 Daily Monitoring- Tasahe A&B DMA

- Monitoring of Minimum Night Flow (MNF) using Telemetry System which sends SMS message after 24 hours – demonstrate flow volume and water pressure $MNF(m^3/min) \times 60 \times 24 / SIV (m^3/day) = NRW \text{ Ratio}$

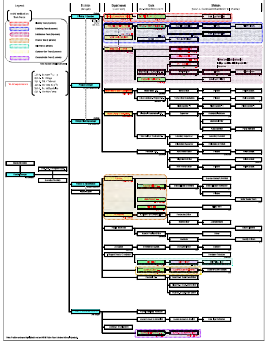


Future forward looking for Monitoring and Maintenance

- Supporting Organisational Structure for DMA Management (Monitoring and Maintenance)
 - Currently forecast more on reduction of NRW in current DMAs only
 - No dedicated DMA maintenance team on daily basis for doing DMA maintenance
- Reform Operations Department to target NRW Reduction and Management in DMA

Propose Support Organisational Structure

[Proposed Org. Structure .JCC.Presentation.xlsx](#)



The End

- Thank you for Listening

ISSUES AND SUGGESTIONS

Date: 22nd JUNE 2016
Venue: Solomon Water Conference Room
5th JCC

Issues and Suggestions- Organisational Level

- 1. Planning and Procurement Schedule of Equipment and Its Budget.**
 - **Current Issue or concern:** Certain delays in procurement of fittings and equipment.
 - **Root Cause:** Absence of systemised procurement plan for the year ahead.
 - **Suggestion:** SIWA to prepare concrete activity plans and estimated costs for the year ahead (say by Sept or Oct of each year) so that procurement can be smooth and on time.

Issues and Suggestions- Organisational Level

3. Ensuring Staff Motivation through Performance Award and Regular Acknowledgement

Issue: Absence of a systemised performance tracker for staff.

Suggestion: SW management to select monthly most valuable staff based on their outputs and results and commend them during monthly meetings

Issue and Suggestions- Individual Level

4. Improve awareness of meter readers and field staff on general information regarding SIWA policies, procedures and happenings

Importance: Meter readers and field staff to be able to adequately answer general inquiries to ensure customer satisfaction. Example, rationing time table

Issue: Non existence of systemised way train meter readers to become skilled to communicate with customers effectively.

Suggestions: Workshop for meter readers to learn FAQ, supply times, significant maintenance work, active DMAs. Frequency at least twice a year.

Issues and Suggestions- Organisational Level

2. Illegal Connections

- **Current issue or concern:** Rise of illegal users in Honiara.
- **Types of illegal connection:** (a) Illegal connections after being disconnected for high arrears (b) Illegal to avoid meeting new connection policy and fees (c) Illegal by removing or bypassing meter to avoid paying actual usage
- **Root causes:** (a) Current tariff is above what some brackets of people can afford resulting in accumulation of arrears and resulting in disconnection of service (b) Other illegal users may not be able to meet necessary requirements for new connections eg, land title

Issues and Suggestions- Organisational Level

• Suggestions:

- Review water tariff system based on household survey.
- Enforce Penal Regulation for illegal users.
- Social security system is introduced.
- Awareness program to persistently continue.

**S13.3-1 DRAFT RESULT OF THE CAPACITY
ASSESSMENT AND CAPACITY NEEDS**

The Project for Improvement of Non-Revenue Water Reduction Capacity for Solomon Water (Former Name: SIWA)

Capacity Assessment of Solomon Water Draft Report

14 December 2012

Japan International Cooperation Agency (JICA)
Expert Team

1

1. Capacity Assessment

1.1 Overall

- Objective: Learn **skill of counterpart** and **organizational capacity of Solomon Water (SW)** to setup baselines of their capacity
- Interview Period: 28 November – 6 December 2012 (9days)
- Measures of Assessment: Questionnaire, Mini-test and Hands-on check in the field

3

Component of Draft Report

- Capacity Assessment
- Schedule for Capacity Development Plan & Pilot Project
- Issues towards Implementation of Pilot Project

2

1.2 Skill of Counterpart

(1) Staff targeted in Assessment

No.	Interviewer	Name	Position for the Project
NRW Management Team			
1	N	Ray Andresen (Mr.)	Project Manager
2	C	Ellen Inahia (Ms.)	Customer Care & Communications Manager
3	N	Tima Kofana (Ms.)	Human Resources Manager
NRW Action Team			
4	N	Benjamin Billy (Mr.)	Team Leader 1/ Non Revenue Water Taskforce Leader
5	C	Ellen Inahia (Ms.)	Team Leader 2/ Customer Care & Communications Manager
6	G	Japhliet Rouhana (Mr.)	IT Administration Team Leader - GIS and Applications
7	N	Austin ATA (Mr.)	Customer Connections and Metering Management Team Leader
8	N	Moses Ramu (Mr.)	Customer Connections and Metering Management Assistant
9	L	Eric Unga (Mr.)	Leakage Detection Team Leader
10	L	Mathew Mafe (Mr.)	Leakage Detection Team Assistant
11	L	David Akoeasi (Mr.)	Leakage Detection Team Assistant
12	N	Silas Talosui (Mr.)	Network Maintenance & Repair Team Leader
13	N	Mathias Bera (Mr.)	Pipe Maintenance & Repair Sub-Team
14	C	Beverlyn Saohu (Ms.)	Customer Care Team Leader
15	C	Sophia Tango (Ms.)	Community Relations & Media Assistant
16	C	Daisy Menaga (Ms.)	Meter Reading Team Leader
17	C	Mary Tafoa (Ms.)	Billing Team Leader
18	C	Lawrance Iroi (Mr.)	Accountant
19	N	Lavten Jacob (Mr.)	Procurement Team Leader
20	N	Frank Davkalia (Mr.)	Pipe Materials Management and Procurement Sub-Team
21	N	Chris Meriko (Mr.)	Water Resources & Treatment Team Leader

N: Assessed by NRW Team; C: by Customer Service Team; G: by GIS Team; L: by Leakage Team

1

(2) Assessment by NRW Expert Team

Criteria	Average Score
Management Team	
1 NRW reduction activity	
1.1 Understanding of importance of NRW reduction	2.5
1.2 Understanding of causes of NRW reduction	2.5
2 O & M or Human Resource Management Activity	
2.1 To hold weekly or monthly meeting with other division	2.5
2.2 To provide weekly or monthly action plan	1.0
2.3 To provide annual action plan	1.0
2.4 To monitor activity/performance of staff	2.0
2.5 To have training of staff yearly	1.5
Action Team	
1 NRW reduction activity	
1.1 Understanding of importance of NRW reduction	1.8
1.2 Understanding of causes of NRW reduction	2.0
1.3 Understanding of important activity of NRW reduction	2.0
2 Meaning of Water Audit	1.3
3 Understanding of Role of Material Procurement	1.8
4 Understanding of Current Situation of Leakage Detection	1.5

Evaluation criteria: x<30%: 0, 30%<x<60%: 1, 60%<x<80%: 2, 80%<x:3

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(3) Assessment by Customer Service Expert Team-2

Criteria	Score	MRs
	Rate 0-3	1
Total Score	100	35
① Reading Skill:	40	15
A) Judgment on the reading (normal or abnormal)	10	5
B) Calculation of current unit	10	5
C) Calculation of current water charge	10	5
D) Knowledge on a new water tariff structure & other charges	10	0
② Communication Skill with Customer:	40	10
A) Greeting	10	5
B) Reading data (current unit and water charge)	10	5
C) Possibility of leaks, defective meter, unpaid bill, new water tariff, etc.	10	0
D) Listening and understanding of customer's complains, needs, expectation	10	0
③ Reporting Skill to the Team Leader	20	10
A) Tasks report on daily basis (leaks, defective meter, illegal connections, and customers complain)	20	10

Note: MRs: Meter Readers (11 staff members)

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(3) Assessment by Customer Service Expert Team-1

Criteria	Score	SD&C	CC	CR&M	Accountant	BTL	MTL
	Rate 0-3	2	1	2	3	1	1
Total Score	100	60	50	55	80	50	50
① Management Skill:	60	35	25	30	45	30	30
A) Understanding of missions and tasks of the division/ team	10	5	5	5	10	5	5
B) Strategy to attain division's/team's mission	10	5	0	5	10	5	5
C) Trust relationship with his/her staff	10	10	5	5	5	5	5
D) Understanding of staff's skills, knowledge and performance	10	5	5	5	10	5	5
E) Activities/program for upgrading of staff's skill	10	5	5	5	5	5	5
F) Coordination with other divisions/teams	10	5	5	5	5	5	5
② Reporting Skill and Action:	20	15	10	10	15	10	10
A) Speed and quality reporting to her/his boss	10	5	5	5	10	5	5
B) Speedy and proper instructions/actions	10	10	5	5	5	5	5
③ Expertise (knowledge on her/his work)	20	10	15	15	20	15	15

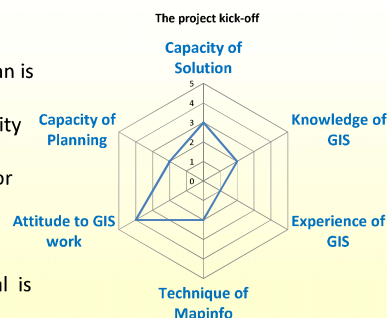
Note: SD&C: Service Delivery & Communications Manager, CC: Customer Care Leader, CR&M: Community Relation & Media Assistant Leader, BTL: Billing Team Leader, MTL: Meter Reading Team Leader

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(4) Assessment by GIS Expert Team

<Current Situation>

- No GIS operation plan is available.
- No business continuity is secured.
- No dedicated staff for GIS operations is available.
- No GIS operational standard and manual is available.



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(5) Assessment by Leakage Detection Expert Team-1

No.	Item	Target person	Present (Personal statement) As of 5,December 2012					
			Excellent		Good		Poor	
			+	-	+	-	+	-
1	Leak detection							
1-1	General knowledge (Detection method)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
1-2	Detection skill (Visible,Underground,Illegal)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
2	Planning							
	Systematic activity (Patrol, Customer report)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	

(5) Assessment by Leakage Detection Expert Team-3

No.	Item	Target person	Present (Personal statement) As of 5,December 2012					
			Excellent		Good		Poor	
			+	-	+	-	+	-
3	Operation / Equipment							
3-6	Valve Locator (Detect the buried valve)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
3-7	Pipe Locator (Locate the position and its depth)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
3-8	Ultra Sonic Flow Meter (Measurement & data transfer)	Mr. Eric					●	
		Mr. Matthew					●	
		Mr. David					●	
3-9	Digital Pressure Logger (Measurement & data transfer)	Mr. Eric					●	
		Mr. Matthew					●	
		Mr. David					●	

(5) Assessment by Leakage Detection Expert Team-2

No.	Item	Target person	Present (Personal statement) As of 5,December 2012					
			Excellent		Good		Poor	
			+	-	+	-	+	-
3	Operation / Equipment							
3-1	Listening Stick (Distinguish the leak sound)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
3-2	Electric Listening Stick (Distinguish the leak sound)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
3-3	Water Leak Detector (Detect the leak point)	Mr. Eric				●		
		Mr. Matthew					●	
		Mr. David					●	
3-4	Leak Noise Correlator (Detect the leak point)	Mr. Eric					●	
		Mr. Matthew					●	
		Mr. David					●	
3-5	Leakage Confirmation (Determine the exact point by the Drilling/Boring)	Mr. Eric					●	
		Mr. Matthew					●	
		Mr. David					●	

Current situation

- (1) Leak detection team periodically conducts visible leak survey by patrol activity and report to leak repair section.
- (2) Leak detection team lacks knowledge for the underground leak detection and its experience.
- (3) Leak detection team has leak detection equipment but some equipment does not work, and others are not used on the regular work.

1.3 Organizational Capacity of Solomon Water (SW)

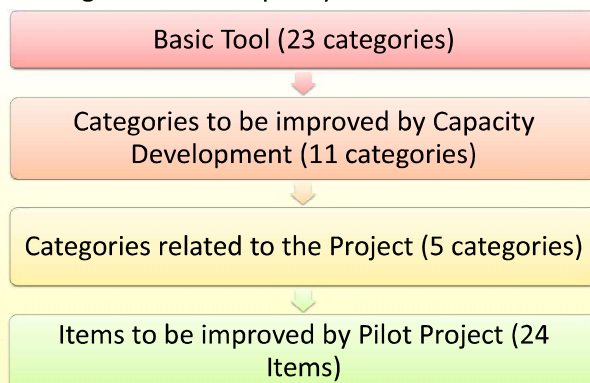
(1) Assessment Tool

- Performance Index (PI)
- Utility Detail Checklist in Assessment Guideline of JICA

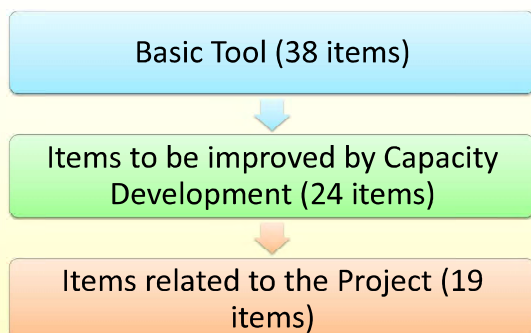
(2) Source of Information

- Monthly Technical Report of SW
- Project Manager of the NRW Project
- Human Resources Manager
- Preparatory Study Report of JICA (March 2012)

(4) Selection of Items in Utility Detail Checklist for Organizational Capacity



(3) Selection of Performance Index



(5) Current Baseline in Performance Index (PI) of Solomon Water-1

Relevant Output in PDM	Category 1	Category 2	Index	Historical Data for Entire Honiara City (as of 2011)
1, 2, 3	Technical Aspects	Measurers of NRW	NRW ratio (%)*	52.5
			- Unbilled meter (%)	0.2
			- Unbilled un-metered consumption (%)	0.8
			- Unauthorized consumption (%)	14.8
			- Metering in accuracies and data handling errors (%)	1.8
			- Leakage on pipes (%)	33.7
			- Leakage & overflow at storage (%)	1.2
			Water production (m ³ /day)	22,142
			Billed water (m ³ /day)	10,178
			Ratio of water meter installation	60.5
2			Number of the water pipe breaks responded to within 24 hours (%)	n.a.
2			Quantity of NRW (m ³ /km/day)	63
2			Quantity of NRW (m ³ /connection/day)	2.5

(5) Current Baseline in Performance Index (PI) of Solomon Water-2

Relevant Output in PDM	Category 1	Category 2	Index	Historical Data for Entire Honiara City (as of 2011)
3	Non-technical aspects	Financial performance	Water tariff collection ratio (%)	83
3			Billing amount** (SBD x1000)	24,837
2, 3		Unit operational cost for water (SBD/m ³)	11.2	
2, 3		Average revenue for water (SBD/m ³)	7.4	
2		Training	Total number of training days in the year on water supply sector (days/annual/staff)	1.14
3	Customer relations	Number of customer complaints responded to within 10 days (%)	n.a.	

Note:
Source: Preparatory Study Report
* Monthly Report of Solomon Water prepared by Mr. Benjamin Billy
** Ratio of Billing to O&M Cost' is one of the Performance Index. However, an effect of improvement will not be clear because the ratio also depends on O&M cost. Therefore, Ratio of Billing to O&M Cost was replaced with Billing Amount.

(6) Assessment for Organizational Capacity-2

Assessment Items	Content of Assessment	Current Status	Approach to improve	Goal of Achievement	Current Achievement (Max. score: 3)
Flow meter	Frequency of replacement of water meter	Change meters which are obviously broken or have suspected failure based on monitoring household water consumption	Check of condition of water meters by using the test meter will enable to replace it smoothly	SW will be able to reduce non-detective water quantity	1
Flow meter	Recognition of number of malfunctioning water meter	Not recognized	Check of condition of water meters by using the test meter will enable to replace it smoothly	SW will be able to reduce non-detective water quantity	0
Capacity on leakage reduction	Current activities on leakage reduction	Making proactive efforts to detect and repair surface leakages by inspecting water pipes	Identify leakage points by detector team and repair pipes	Leakage will be reduced in the pilot project	1
Capacity on leakage reduction	Days required for repair of pipes once leakage is reported or detected	Less than two days	Securing repairing team and pipe material will enable to work smoothly.	Days from observation to repair will be less than a day	3

(6) Assessment for Organizational Capacity-1

Assessment Items	Content of Assessment	Current Status	Approach to improve	Goal of Achievement	Current Achievement (Max. score: 3)
Overall	NRW reduction plan	Not exists	Advise on making NRW reduction plan for pilot project	SW will be able to prepare NRW reduction plan	0
Overall	Causes of NRW	Reasonable understanding with some reliable data	Learn causes based on precise data to be collected through pilot project	SW will be able to component of causes of NRW and take measures	1
Flow meter	Calibration equipment required for checking accuracies of water meter and bulk flow meter	Not test	Introduce the test-meter in the project	SW will be able to secure accuracy of water meters	0

(6) Assessment for Organizational Capacity-3

Assessment Items	Content of Assessment	Current Status	Approach to improve	Goal of Achievement	Current Achievement (Max. score: 3)
Capacity on leakage reduction	Skill level on leakage detection	Some staff have related skill but underground leakage detection is not conducted according to a plan	OJT on leakage detection will be done through pilot project.	Leakage detection team will receive skill on leakage detection technology underground	1
Capacity on leakage reduction	Weak points on leakage reduction activities	There is equipment but lack of knowledge	Clarifying causes of leakage reduction through pilot project will be able to make staff understand.	SW will be able to NRW reduction plan	2
Quality control for pipe installation	Pressure leakage test after laying service pipes	No	Check water pressure through pilot project	Work on water pressure test will be established	1
Meter reading, billing and tariff collection	Manual of meter reading, billing and tariff collection	There are some well-organized manuals but they are not well followed	Update O&M manual and notify it to SW's all of staff members	Work will be done based on the O&M manual	1
	Collaboration between the bill collection and accounting section	They are separated and a cross-checking function	Have weekly or bi-weekly meeting continuously	Data will be shared each other	3

(6) Assessment for Organizational Capacity-4

Assessment Items	Content of Assessment	Current Status	Approach to improve	Goal of Achievement	Current Achievement (Max. score: 3)
Cost management	Number of vehicle used for meter reading and billing	Not nearly enough	Use a pick-up which is used for the project team	Transportation will be secured	0
Organizational function and Performance	Understanding of SW for current status of water supply service based on performance index	To some extent	Conduct min-workshop on Performance Index (PI)	PI will be used for annual action plan and the report of activities	2
Training program	Current situation of OJT	Some OJT is carried out but in an unorganized way	Mini-test on measure of water consumption and tariff calculation will be done	All of the water meter readers will obtain skill on calculation of water consumption and water tariff	1
Accountability	Frequency of newsletter publication year	Less than once a year	Publication of Newsletter will be developed involving NRW management team	Newsletter will be published four time a year	0
	Public relation on water rationing	Almost enough notification in an ad-hoc manner	Plan of the water rationing will be prepared	Water users in Honiara will be notified	1

(6) Assessment for Organizational Capacity-6

Assessment Items	Content of Assessment	Current Status	Approach to improve	Goal of Achievement	Current Achievement (Max. score: 3)
Water user willingness	Campaign activities (water conservation)	Not completed	Improve willingness of water users on water conservation through radio and TV	Water consumption will be reduced	2
	Campaign activities (illegal connection)	Not completed	Improve willingness of water users on elimination of illegal connection and water supply service improvement through radio and TV	Illegal connections will be reduced	2
	Campaign activities (report to SW on leakage)	Not completed	Improve willingness of water users on current status of leakage through radio and TV	Number of report for leakage on ground will be increased	2

(6) Assessment for Organizational Capacity-5

Assessment Items	Content of Assessment	Current Status	Approach to improve	Goal of Achievement	Current Achievement (Max. score: 3)
Understanding of water users	Database of water users	Irregularly updated	Secure staff members to update database	Database will be shared in each division	1
	Current situation of illegal connection	Very serious	Reveal illegal connection and disconnect the service pipes through pilot project	Illegal connection will be eliminated	0
Satisfaction of water users and willingness to pay for improvement of water supply service	Satisfaction of water users	A part of water users	Conduct an interview survey for meter reading and customer care team	SW will be able to understand satisfaction of water users properly	1
	Recognition on willingness to pay of water users	Unknown	Conduct an interview survey by meter reading and customer care team	SW will be able to learn willingness of water users properly.	0

2. Schedule for Capacity Development Plan & Pilot Project

December 2012

No.	Task	14 Fri	15 Sat	16 Sun	17 Mon	18 Tue	19 Wed	20 Thu	21 Fri	22 Sat	23 Sun	24 Mon	25 Tue	26 Wed	27 Thu	28 Fri	29 Sat	30 Sun	31 Mon
1	Interview with Action Team Member																		
2	Set-up Current Baseline of NRW Team Member of SIWA																		
3	Set up Current Baseline of PDM																		
4	Field Survey on Isolates in Pilot Areas																		
5	Field Survey on Meter Reading																		
6	Review on Existing Data																		
7	Fact finding and Wrap-up																		
8	Capacity Development and Annual Action Plan																		
9	Procurement of Equipment and Logistics																		
10	Interview with Action Team Member																		
11	Interview with Action Team Member																		
12	Interview with Action Team Member																		
13	Interview with Action Team Member																		
14	Interview with Action Team Member																		
15	Interview with Action Team Member																		
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26	Interview with Action Team Member																		
27	Interview with Action Team Member																		
28	Interview with Action Team Member																		
29	Interview with Action Team Member																		
30	Interview with Action Team Member																		
31	Interview with Action Team Member																		
Total																			

January 2013

No.	Task	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
		Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri
-	Report to JICA Headquarter on Capacity Assessment & Capacity Development Plan								X										
1	Field Survey on Isolation in Pilot Areas																		
2	Capacity Development and Annual Action Plan																		
3	Procurement of Equipment and Lot/bids																		
	Takatoshi FUJUYAMA (Leader)																		
	Akinori MIYOSHI (Deputy & NRW-1)																		
	Masatoshi SENO (NRW-2)																		
	Akihiro OKAZAKI (Leakage)																		
	Masakazu ASAI (GIS)																		
	Keiji KANAMATSU (Customer)																		
	Aiko SAKAMOTO (Coordinator)																		
	Norio ISHIJIMA (GIS Adviser)																		
	Number of JICA Team Members	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

3. Issues towards Implementation of Pilot Project

Procurement of Water Supply Equipment have had half-month-delay



- ◆ Quick action is required for the request so as to implement the pilot project as scheduled.
- ◆ Follow-up is always important after taking an action