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Lebanon Water and Wastewater Sector Support

QUARTERLY REPORT: APRIL 2014 — JUNE 2014

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ACRONYMS

ACWUA	Arab Countries Water Utilities Association	HDSL	High-bit-rate Digital Subscriber Line
ADSL	Asymmetrical digital subscriber line	HPIP	High Priority Intervention Program
AFD	French Development Agency	HR	Human Resources
AWP	Annual Work Plan	H&S	Health and Safety
APP	Annual Work Plan	IAR	Initial Assessment Report
ATP	Annual Training Plan	IEE	Initial Environmental Evaluation
BMLWE	Beirut-Mount Lebanon Water Establishment	IFI	International Financial Institution
BOQ	Bill of Quantities	IRG	International Resource Group
BWE	Bekaa Water Establishment	IRM	Information Resources Management
CAS	Central Administration of Statistics	IT	Information Technology
CCN	Cooperating Country National	IWRM	Integrated Water Resource Management
CCTV	Closed Cable Television	KPI	Key Performance Indicator
CDG	Chairman and Director General	LWWSS	Lebanon Water and Wastewater Sector Support
CDM	Camp, Dresser and McKee Engineering	MIS	Management Information System
CDR	Council for Development and Reconstruction	MMS	Maintenance Management System
CRM	Customer Relations Management	MOEW	Ministry of Energy and Water
CIP	Capital Improvement Plan	MOF	Ministry of Finance
CO	USAID Contract Office	MOTGE	Mise en place des Outils Techniques de Gestion de l'Eau
COA	Chart of Accounts	NLWE	North Lebanon Water Establishment
CQCP	Construction Quality Control Plan	NRW	Non Revenue Water
CSR	Customer Service Representative	NWSS	National Water Sector Strategy
COP	Chief of Party	O&M	Operations and Maintenance
COR	Contract Officer Representative	PMP	Performance Monitoring Plan
DG	Director General	PSP	Private Sector Participation
DAI	Development Alternatives Inc.	PPM	Parts per million
DCOP	Deputy Chief of Party	PPP	Public Private Partnership
DEP	Design Engineering Partners	SCADA	System Control and Data Acquisition
EIB	European Investment Bank	SLWE	South Lebanon Water Establishment
EU	European Union	SMP	Subcontractor Management Plan
EA	Environmental Assessment	SOW	Scope of Work
EDL	Electricite du Liban (National Electricity Provider)	STTA	Short-Term Technical Assistance
EMMP	Environmental Monitoring and Mitigation Plan	TBC	To be confirmed
ERP	Enterprise Resource Planning	TOR	Terms of Reference
EOI	Expression of Interest	USAID	United States Agency for International Development
FAS	Financial & Accounting System	USG	United States Government
GA	Geographical Area	WE	Water Establishment
GIS	Geographical Information System	WET	World Engineering and Technology
GIZ	Gezellschaft fur Internationale Zusammenarbeit	WPS	Water Pumping Stations
GNSS	Global Navigational Satellite System	WWTP	Wastewater Treatment Plant
GOL	Government of Lebanon		
GTZ	German Technical Assistance		

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LWWSS Counterparts and Primary Contacts:

Beirut-Mount Lebanon Water Establishment (BMLWE)	Joseph Nseir
Beka'a Valley Water Establishment (BWE)	Maroun Moussallem
North Lebanon Water Establishment (NLWE)	Jamal Krayyem
South Lebanon Water Establishment (SLWE)	Ahmed Nizam
Ministry of Energy and Water (MOEW)	Ghassan Beydoun
MOEW Advisor to Minister (Wastewater)	Randa Nemer

A. INTRODUCTION

The Lebanon Water and Wastewater Sector Support (LWWSS) Program is a \$34 million, 67-month (October 2009 - April 2015) program funded by USAID and implemented by Development Alternatives, Inc. (DAI). LWWSS provides technical assistance and related services to impact USAID/Lebanon's Assistance Objective (AO) 4, "Improved water services for all in Lebanon", and the corresponding Intermediate Results (IRs), "More efficient management of water resources", "Improved water infrastructure", and "Enhanced water governance".

LWWSS works in cooperation with the Ministry of Energy and Water (MOEW) to assist Lebanon's four Water Establishments (WEs) in strengthening their capacity to deliver high-quality and sustainable services. Ultimately, the LWWSS program aims to help the WEs advance towards financial and operational sustainability and overcome the many challenges they face, including staff shortages and an aging workforce, poor customer relations, low tariffs that fail to recover operating costs, lack of metering, excessive non-revenue water, and underinvestment in the water and wastewater infrastructure.

The areas of focus that LWWSS targets in working with the WEs include:

- Building management capacity within the WEs;
- Increasing financial management capacity and financial system integration;
- Procuring equipment to complement technical assistance and capacity building;
- Business planning to increase capital planning and benchmarking capacity;
- Funding urgent infrastructure works to enhance delivery or access and coverage; and
- Developing a corporate culture, customer service orientation, and public outreach programs.

Based on the initial LWWSS program objectives of building on previous USAID and other donor program progress, and as a result of lessons learned during the past four years of the program, LWWSS has focused on implementing its Year-Five Work Plan within specific areas of Water Establishment (WE) operations. The LWWSS program has, therefore, tailored the individual WE work plans to apply the information gathered on each WE and to leverage the successes accomplished to date.

This Quarterly Report covers the period from April 2014 – June 2014 and provides quarterly highlights, component updates that provide technical perspective, and detailed progress of project activities broken down by each WE and then further by each component, as per the Year Five Work Plan. Each component consists of several activities, and progress of each is depicted in the accompanying Gantt chart and detailed in the narrative.

B. QUARTERLY ACTIVITY HIGHLIGHTS

USAID develops the water infrastructure at the North Lebanon Water Establishment by rehabilitating Bebnine water network



Within its efforts to develop the water infrastructure at the North Lebanon Water Establishment (NLWE), USAID's Lebanon Water and Wastewater Sector Support Program (LWWSS) identified rehabilitating the water network at the town of Bebnine in Beit Mellat, Akkar, as a critical activity. The importance of this project stems from it allowing an estimated 4,360 households to connect to enhanced water supply, leveraging substantial existing investments and commitments from NLWE.



On 29 April, the Potable Water Distribution Network project in the city of Bebnine was officially launched in the presence of the mayor, public officers, LWWSS team, USAID representative, NLWE representative, Bebnine residents and other stake holders. Overall the inauguration was a very successful event. The residents welcomed the initiative and expressed their enthusiasm for the project stressing on the importance of adhering to health and safety measures throughout the duration of the project.



In addition to improving service coverage in underserved parts of Akkar or parts where water is not being served at all, this vital initiative will increase NLWE's revenues as it seeks to move away from the flat annual rate tariff scheme paid by most customers thus improving financial sustainability and solvency.

USAID strengthens the Institutional capacity of the four Water Establishments by providing Budget and Audit trainings.



USAID's Lebanon Water and Wastewater Sector Support (LWWSS) Program organized a two-day workshop on audit and budget manuals and standard procedures, for staff from the four Water Establishments (WEs) of Lebanon. The training is considered crucial for upgrading finance and accounting standards and methods.

The two-day workshop took place on May 7 and 8, 2014 for thirty five staff members from the four water establishments. The training was quite successful in conveying the importance of the budget and audit manuals and explaining the standard procedures that need to be followed.



Implementation of the budget and audit manuals have a high impact on the WEs management and operations thereby leading to better control of the establishments' financial and administrative processes. These activities are essential in identifying and reducing inefficiencies, clamping down on illegitimate activities, increasing staff accountability and providing senior management as well as Government auditors with feedback on the WEs performance.

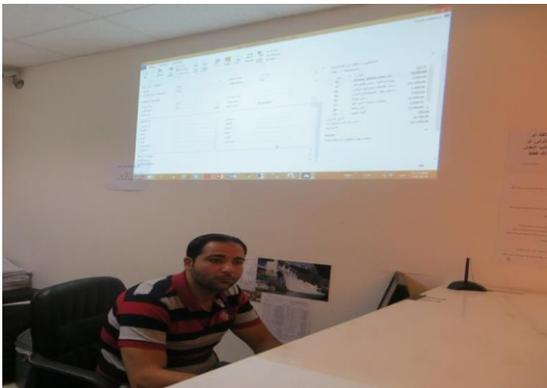
USAID increases Financial and Commercial Viability of the South Lebanon Water Establishment through implementing Enterprise Resource Planning system



Within its efforts to enhance the capacity of the South Lebanon Water Establishment (SLWE), USAID's Lebanon Water and Wastewater Sector Support Program (LWWSS) organized an interactive training session on the Billing Module of the Enterprise Resource Planning (ERP) system.



The training session took place on Tuesday June 3, 2014, in the Customer Service Center at the SLWE, targeting the nine staff working at the Center. This training comes as one in a series of related trainings aiming to implement the ERP system as a more advanced business management alternative, replacing the current system which is outdated, prone to data inaccuracy and errors.



The ERP is a centralized management system which, once implemented, will provide the SLWE with an integrated, flexible and modern platform for computerized operations across all departments, enabling the SLWE to achieve fast progress in terms of increased administrative efficiency, accountability, quality control and informed decision making. This advanced business solution leads to improved services and consequentially to more satisfied customers estimated to be around 150,000 subscribers.

Project Progress by Water Establishment and Component

Project activities are broken down by each WE and then further by each LWWSS component, in conformance with the Year Five Work Plan. Each component consists of several activities, and progress of each is depicted in the accompanying Gantt chart and detailed in the narrative.

1. Bekaa Water Establishment

Component 2: Capacity Building for Managerial, Technical and Operational Efficiency

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
2.2	Building the WEs' Water Quality Management Capacity: Water Quality Testing Plan	AUB	Activity completed	
2.3	Capacity Building in Operation and Maintenance of Pump Stations	KREDO	Activity completed	
2.4	Public administration and Process Management Training		Activity completed	June 2014
2.4.2	Public administration and process management training aiming at increasing staff familiarity with WE systems and processes	LWWSS (MK), ABA (MC)	Activity completed	June 2014
2.5	Training on Network Maintenance and Repair			
2.5.1	Basic training on network maintenance, monitoring and repair, for existing and newly recruited network team personnel	- LWWSS (MK) - KREDO	Activity completed	December 2013

Personnel: BG-Bassem Ghayda; MK-May Koleilat; GT-Gulnard Ters; MC-Mike Chalah

Below we provide additional context for selected activities presented in the table above.

Activity 2.4 - Public Administration and Process Management Training

The training activity took place in April 2014. During the 7-day workshop, BWE staff members were trained on public administration and process management. The content of the training covered the BWE Organization Chart, Laws and Regulations. It also included process and procedure training on different modules: Procurement, Inventory and Fixed Assets, Accounting: Accrual vs Cash, Financial Reporting, Payroll and H/R, Budget Preparation and Execution, Billing and Collection vs CRM.

The training activity was highly needed in order to enhance the administrative, managerial efficiency and workflow of BWE’s key personnel. The training resulted in faster processing of customer applications,

work orders and requests. The training allowed the staff to become more acquainted with the WE's by-laws, thereby increasing their level of compliance and accuracy, as well as contributing to the BWE's better organizational and financial performance.

Activity 2.5 - Basic training on network maintenance, monitoring and repair, for existing and newly recruited network team personnel

Activity completed in the first quarter of Year Five.

Component 3: Increase Financial and Commercial Viability of Water Establishments

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
3.1	Upgrade Finance and Accounting Standards and Methods			
3.1.5	Develop procedures and a standard manual for yearly budgeting within the WE, and conduct applied training to key departments.	ABA (AA, MC)	Procedures defined, manual produced, training conducted.	December 2014
3.1.6	Develop procedures and a standard manual for internal audit within the WE, and conduct applied training to key departments.	ABA (AA, MC)	Procedures defined, manual produced, training conducted.	February 2015
3.2	Integrate the WEs Financial, Accounting, Customer Service and Business Process Systems: The Enterprise Resource Planning (ERP) Platform	ABA (AA, MC)	Systems integrated ERP modules fully functional	December 2014
3.2.4	Conduct training, assist in transition phase and provide one year on-site support	ABA (MC) EDM	Activity to be completed	December 2014

Pers
onne

I: AA-Ahmad Azzam; MC-Mike Chalah

Below we provide additional context for selected activities presented in the table above.

Activity 3.1 – Upgrade Finance and Accounting Standards and Methods

3.1.5 - Develop procedures and a standard manual for yearly budgeting within the WE, and conduct applied training to key departments

During April, preparations continued for a workshop that took place in May 2014, targeting the four WEs to explain and discuss the budget manual and key issues related to its implementation such as: policies, procedures, execution, forecast, methodology, reporting and templates. A draft of the budget manual was finalized and shared with all WEs to obtain their feedback and integrate it into the final version.

An action plan to standardize the budget across the four WEs and another action plan for the implementation of the manual for the 2015 budget were developed and shared with all WEs. The WEs interested in pursuing this activity were asked to officially commit, dedicating staff to work with the LWWSS team in accordance to the action plan. The deadline to receive the WEs' commitment was set for 26 May.

All WEs expressed their interest and showed commitment and identified staff members to follow up on the development of the budget manual and standardization of the existing templates.

Accordingly a meeting took place on Wednesday, June 25, at LWWSS premises between Heads of Financial departments from the WEs and the LWWSS team in order to develop a unified standard budget template to be used by all establishments. Budget standardization was discussed in depth and comments were collected regarding the changes that needed to be made in order to reach one unified form. Attendees agreed on one template for existing budget expense categories, formats and definitions. It was agreed that a finalized draft standardized budget template will be shared with all 4 WE's for final approval and comments. Once feedback from the WEs is received, LWWSS will follow up on the implementation according to the below schedule:

- Integration of the WE's comments in the budget manual
- Preparation of the list of forms and assignment of responsibilities
- Preparation of a detailed plan and instructions to fill the forms
- Providing assistance to WEs in filling 2015 budget forms
- Preparation of the draft 2015 budget
- Obtaining the approval of the DGs on the 2015 budget forms and finalizing

3.1.6 - Develop procedures and a standard manual for internal audit

In April, preparations continued for a training targeting the four WEs, which took place on 7 and 8 May to present the Audit manual to staff from the Water Establishments and obtain their commitment regarding its acceptance and implementation. A draft of the audit manual was finalized and shared with all WEs prior to the workshop to obtain their feedback.

The Audit manual and key issues related to its implementation were explained and discussed thoroughly during the two-day workshop, such as: code of ethics, automated systems audit, documentation and management, preliminary audit such as performance analysis, audit program, risk management, planning, methodology and reporting.

In June, following the training, work was under way to prepare an action plan mapping the major steps needed to develop and streamline the Audit procedures and standard manual. Once finalized, the action plan will be shared with all WEs requesting their commitment. The WEs interested in pursuing this activity further will be asked to officially commit, dedicating staff to work with the LWWSS team.

Major steps in the action plan were defined as follows:

- Conducting preliminary Audit
- Preparation of a risk plan
- Preparation of an audit strategic plan
- Preparation of an audit annual plan
- Preparation of an audit guide for selected audits
- LWWSS to assist WEs in audit implementation for selected audits
- Updating audit manual and procedures

Activity 3.2 - Integrating the WE’s Financial, Accounting, Customer Service and Business Process Systems

Enterprise Resource Planning (ERP) System Progress

During the reported period, LWWSS team and EDM subcontractor continued with the follow up visits to the BWE and met with the DG on regular basis. It was determined that all the ERP modules were operational and functional except for the billing and collection and CRM modules which were pending the receipt of the subscribers Master files.

In May 2014, an internal memo was sent by the DG to the BWE staff urging them to use the functional modules of the ERP system in their daily transactions while stopping all other parallel systems that were being used at the time. The functional modules included: procurement, budget, inventory, payroll, human resources and accounting.

Status update for the different modules is detailed in the table below.

Module Description	Completion Rate	Reporting Status	Comments
Procurement	100%	Reports generated	Presented to the DG
Budget	100%	Reports generated	Presented to the DG
Inventory	100%	Reports generated	presented to the DG
Payroll	100%	Reports generated except for one	presented to the DG
Human Resources	100%	Reports generated	Presented to the DG
Accounting	100%	Work in progress	Presented to the DG but the report will be generated in July
Documentation and Registration	100%	Reports generated from the system	Presented to the DG
Billing and Collection	90%	Work in progress	As of the end of June, EDM finalized the subscribers’ files for Chamsine, Zahle and Baalbeck but were still testing the

			data before going live in August.
CRM	90%	Work in progress	Linked to the subscribers' Master files and to the billing & collection module which have not been finalized yet.

Component 4: Capital Investment Planning and Program/Project Management

Work Plan Activity

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
4.4	Master planning			
4.4.1	Water Supply and Sewerage Master Plan	LWWSS, KREDO, ValuAdd	Activity to be completed	December 2014

Below we provide additional context for selected activities presented in the table above.

Activity 4.4 - Developing Water Supply and Sewerage Master Plan

By end of June 2014, despite numerous requests and warnings from LWWSS engineering team, the consultant KREDO still had not submitted the revised Irrigation Services Assessment Report which was due in April 2014, nor the TOR for Irrigation Systems Master Plan which was due in May 2014.

The Irrigation Services Assessment Report was first submitted by KREDO on April 17, 2014. It was reviewed and commented on by the LWWSS team. On May 19, 2014, a meeting was held between KREDO, LWWSS engineering team and the consultant Mr. Philip Giantris, to further discuss the said report. It was agreed that KREDO should amend the report according to the comments raised by LWWSS, and should resubmit it for review prior to the submission of the TOR for Irrigation Systems Master Plan, which was due on May 30, 2014.

On another note, the Wastewater Capital Investment Plan & Priority Action Plan due on April 30, 2014 were not submitted. KREDO was facing difficulties obtaining information. A meeting was held on May 6, 2014, at LWWSS offices to discuss the rescheduling of deliverables. The consultant justified his request by setting out the difficulties and challenges his team were encountering in gathering information from official sources. It was agreed that the new schedule of the remaining deliverables was now as follows:

Deliverable	New Due Dates as agreed in the meeting of May 6, 2014
Irrigation Services Assessment Report. Submitted for the first time on:	April 17, 2014
TOR for Irrigation Systems Master Plan	May 30, 2014
Wastewater Capital Inv. Plan & Priority Action Plan	June 30, 2014
Water Supply Capital Inv. Plan & Priority Action Plan	September 30, 2014
Final Master Plan	November 30, 2014

Component 5: Procurement of Technical Equipment to Strengthen WEs

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
5.4	Upgrading the Water Analysis Laboratories			
5.4.1	Upgrade the water testing laboratories with infrastructure and equipment	MK	Activity completed	October 2013
5.4.2	Establish service agreements and provide user training	MK	Activity completed	October 2013

Personnel: MK-May Koleilat

Activity 5.4.2 – Establish service agreements and provide user training

Activity completed in the first quarter of Year Five.

Component 6: Small to Medium Scale Rehabilitation/Upgrade/Extension Water and Wastewater Works within WEs

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
6.1	Decreasing Water Losses and Upgrading Existing Networks			
6.1.1	Design network upgrades in Zahle: rehabilitating the water supply network of the region of Mar Elias	LWWSS (WA) Local Engineering Firm (W.E.T)	Design completed;	January 2013
6.1.2	Implement network upgrades in Zahle: rehabilitating the water supply network of the region of	Local Engineering Firm (W.E.T) Local	Activity completed	February 2014

	Mar Elias	subcontractor (Nicolas Srouji)		
6.1.3	Design network upgrades in Zahle: rehabilitating five branch networks in Haouche el Oumara, Maalaka, Rassieh, Karak-Forzol and Midan	LWWSS (WA) Local Engineering Firm (W.E.T)	Activity completed	February 2014
6.1.4	Implement network upgrades in Zahle: rehabilitating five branch networks in Haouche el Oumara, Maalaka, Rassieh, Karak-Forzol and Midan	Local Engineering Firm (W.E.T) Local subcontractor (Nicolas Srouji)	Activity completed	February 2014

Personnel: WA- Walid AbouZeid

Below we provide additional context for selected activities presented in the table above.

Activity 6.1 - Decreasing Water Losses and Upgrading Existing Networks

Following the completion of the Zahleh Network Project in February 2014, a substantial inspection was jointly held during the month of April 2014 between DAI, the subcontractor Nicolas Srouji Establishment for Contracting, the consultant WET and BWE. The purpose of the inspection was to ensure that all the tasks included in the contract have been satisfactorily completed according to contract specifications and drawings. A Punch List including any defective or incomplete works was drawn up and handed over to the subcontractor. The subcontractor undertook the reparation of all observed defects and handed over to LWWSS the final As-built drawings of the project.

The substantial taking over certificate was jointly issued by BWE and LWWSS on May 30, 2014. The Contractor implemented the project during the contractual period and without any delays. The defects liability period started on February 25, 2014 and expires on February 24, 2015. The Zahle Network Rehabilitation Project was a total success on all fronts.

USAID rehabilitated seven major water lines in Zahle namely: Maallaka, Mar Elias, Dhour Zhale, Rassieh, Midan, Haouch El Oumara and Karak El Ferzol. Even though Zahle has the highest number of subscribers in the Bekaa region, and the highest rate of bill collection, its water network is reported to be one of the most deteriorated in the country because of aging infrastructure and lack of capital investment. Water distribution lines have been in service for 30 to 50 years and suffered from frequent breaks and water service shut-downs

USAID's (LWWSS) rehabilitated 15 km of the Zahle water network, thus improving water services for approximately 22,000 people within the Zahle area, reducing water leakages and water supply service disruptions. The project also improved water pressure, allowing water to reach the upper levels of multi-apartment dwellings, therefore decreasing illegal water tapping. USAID also trained technical staff on the operation and maintenance of the network, ensuring sustainability of their intervention.

In addition, the project provided BWE with an opportunity to improve operations, which would eventually result in enhanced revenues. Promoting customer satisfaction and improving service reliability should improve customer bill payment. In turn, increased revenue will lead to continued service improvements and continued water access to thousands of Lebanese citizens.

Component 7: Corporate Culture, Customer Service Orientation, and Public Outreach

There are no component seven activities with BWE in the LWSS program Year Five work plan.

2. Beirut-Mount Lebanon Water Establishment

Component 2: Capacity Building for Managerial, Technical and Operational Efficiency

There are no component two activities with NLWE in the Year Five work plan.

Component 3: Increase Financial and Commercial Viability of Water Establishments

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
3.1	Upgrade Finance and Accounting Standards and Methods			
3.1.5	Implement the yearly budgeting within the WE.	ABA (AA, MC)	Activity to be completed	December 2014
3.1.6	Develop procedures and a standard manual for internal audit within the WE, and conduct applied training to key departments.	ABA (MC, AA)	Procedures defined, manual produced, training conducted.	February 2015
3.1.7	Develop module and training on the cost Tariff Analysis Module	ABA (AA, MC)	Activity completed	October 2013
3.2	Integrate the WEs Financial, Accounting, Customer Service and Business Process Systems			
3.2.4	Conduct training, assist in transition phase and provide one/two year on-site support	ABA EDM	Activity to be completed	December 2014

Personnel: AA- Ahmad Azzam; MC-Mike Chalah. Resource: ABA-Allied Business Advisors

Below we provide additional context for selected activities presented in the table above.

Activity 3.1 – Upgrade Finance and Accounting Standards and Methods

3.1.5 - Develop procedures and a standard manual for yearly budgeting within the WE, and conduct applied training to key departments

During April 2014, preparations continued for a workshop that took place in May 2014, targeting the four WEs to explain and discuss the budget manual and key issues related to its implementation such as: policies, procedures, execution, forecast, methodology, reporting and templates. A draft of the budget manual was finalized and shared with all WEs to obtain their feedback and integrate it into the final version.

An action plan to standardize the budget across the four WEs and another action plan for the implementation of the manual for the 2015 budget were developed and shared with all WEs. The WEs interested in pursuing this activity were asked to officially commit, dedicating staff to work with the LWWSS team in accordance to the action plan. The deadline to receive the WEs' commitment was set for 26 May 2014.

All WEs expressed their interest and showed commitment and identified staff members to follow up on the development of the budget manual and standardization of the existing templates.

Accordingly a meeting took place on Wednesday, June 25, at LWWSS premises between Heads of Financial departments from the WEs and the LWWSS team in order to develop a unified standard budget template to be used by all establishments. Budget standardization was discussed in depth and comments were collected regarding the changes that needed to be made in order to reach one unified form. Attendees agreed on one template for existing budget expense categories, formats and definitions. It was agreed that a finalized draft standardized budget template will be shared with all 4 WE's for final approval and comments. Once feedback from the WEs is received, LWWSS will follow up on the implementation according to the below schedule:

- Integration of the WE's comments in the budget manual
- Preparation of the list of forms and assignment of responsibilities
- Preparation of a detailed plan and instructions to fill the forms
- Providing assistance to WEs in filling 2015 budget forms
- Preparation of the draft 2015 budget
- Obtaining the approval of the DGs on the 2015 budget forms and finalizing

3.1.6 - Develop procedures and a standard manual for internal audit

In April, preparations continued for a training targeting the four WEs, which took place on 7 and 8 May to present the Audit manual to staff from the Water Establishments and obtain their commitment regarding its acceptance and implementation. A draft of the audit manual was finalized and shared with all WEs prior to the workshop to obtain their feedback.

The Audit manual and key issues related to its implementation were explained and discussed thoroughly during the two-day workshop, such as: code of ethics, automated systems audit, documentation and management, preliminary audit such as performance analysis, audit program, risk management, planning, methodology and reporting.

In June, following the training, work was under way to prepare an action plan mapping the major steps needed to develop and streamline the Audit procedures and standard manual. Once finalized, the action plan will be shared with all WEs requesting their commitment. The WEs interested in pursuing this activity further will be asked to officially commit, dedicating staff to work with the LWWSS team.

Major steps in the action plan were defined as follows:

- Conducting preliminary Audit
- Preparation of a risk plan
- Preparation of an audit strategic plan
- Preparation of an audit annual plan
- Preparation of an audit guide for selected audits
- LWWSS to assist WEs in audit implementation for selected audits
- Updating audit manual and procedures

3.1.7 - Develop module, procedures and provide training on the Cost Tariff Analysis Module for Strategic Planning and Budgeting

The development of the Cost Tariff Module was completed in the first quarter of Year Five. Follow-up to ensure sustainability of this task did not take place as LWWSS is waiting for BMLWE to feed the data for 2011-12-13 into the module in order to verify the reports generated and get user feedback. However, due to lack of staff at the WE, it is not expected that follow up will take place in the coming quarter. No recruitments are expected in the near future. The establishment lacks the capacity to dedicate staff to work with LWWSS on the implementation of this activity.

Activity 3.2 - Integrating the WE's Financial, Accounting, Customer Service and Business Process Systems: Enterprise Resource Planning System

Activity completed in the first quarter of Year Five.

Component 4: Capital Investment Planning and Program/Project Management

There are no component four activities with BMLWE in the Year Five work plan.

Component 5: Procurement of Technical Equipment to Strengthen WEs

There are no component five activities with BMLWE in the Year Five work plan.

Component 6: Small to Medium Scale Rehabilitation/Upgrade/Extension Water and Wastewater Works within WEs

There are no component six activities with BMLWE in the Year Five work plan.

Component 7: Corporate Culture, Customer Service Orientation, and Public Outreach

There are no component seven activities with BMLWE in the Year Five work plan.

3. North Lebanon Water Establishment

Component 2: Capacity Building for Managerial, Technical and Operational Efficiency

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
2.5	Training on Network Maintenance and Repair			
2.5.1	Basic training on network maintenance, monitoring and repair, for existing and newly recruited network team personnel	- LWWSS (MK) - KREDO	Activity to be completed	September 2014

MK-May Koleilat

Activity 2.5 – Training on Network Maintenance and Repair

This training will be conducted by KREDO and will target up to 36 network operators from the NLWE. It will support the LWWSS program’s efforts in the North, namely the infrastructure activities which include the water network replacement and extension in the city of Bebnine. It will also introduce best practice methods for detection and repair of water distribution breakdowns, which will directly contribute to a decrease in service disruptions, faults and operational damage of networks, a reduction in the risk of personal injury of operating staff, and financial and resource savings for the NLWE.

In May and June preparations for this activity were underway. A meeting was held with the NLWE, and LWWSS to discuss this activity in details. It was agreed that the NLWE should send an official letter nominating the staff who should attend the training which is going to be divided into two sessions, five days each, consisting of both classroom and practical courses. The first one is going to start on 19 August and the second on 04 September.

Component 3: Increase Financial and Commercial Viability of Water Establishments

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
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3.1	Upgrade Finance and Accounting Standards and Methods			
3.1.5	Develop procedures and a standard manual for yearly budgeting	ABA (MC, AA)	Procedures defined, manual produced, training conducted.	December 2014
3.1.6	Develop procedures and a standard manual for internal audit within the WE, and conduct applied training	ABA (MC, AA)	Procedures defined, manual produced, training conducted.	February 2015

Personnel: AA-Ahmad Azzam; MC-Mike Chalah; MK-May Koleilat.

Resource: ABA-Allied Business Advisors

Below we provide additional context for selected activities presented in the table above.

3.1.5 - Develop procedures and a standard manual for yearly budgeting within the WE, and conduct applied training to key departments

During April 2014, preparations continued for a workshop that took place in May 2014, targeting the four WEs to explain and discuss the budget manual and key issues related to its implementation such as: policies, procedures, execution, forecast, methodology, reporting and templates. A draft of the budget manual was finalized and shared with all WEs to obtain their feedback and integrate it into the final version.

An action plan to standardize the budget across the four WEs and another action plan for the implementation of the manual for the 2015 budget were developed and shared with all WEs. The WEs interested in pursuing this activity were asked to officially commit, dedicating staff to work with the LWWSS team in accordance to the action plan. The deadline to receive the WEs' commitment was set for 26 May 2014.

All WEs expressed their interest and showed commitment and identified staff members to follow up on the development of the budget manual and standardization of the existing templates.

Accordingly a meeting took place on Wednesday, June 25, 2014, at LWWSS premises between Heads of Financial departments from the WEs and the LWWSS team in order to develop a unified standard budget template to be used by all establishments. Budget standardization was discussed in depth and comments were collected regarding the changes that needed to be made in order to reach one unified form. Attendees agreed on one template for existing budget expense categories, formats and definitions. It was agreed that a finalized draft standardized budget template will be shared with all 4 WE's for final approval and comments. Once feedback from the WEs is received, LWWSS will follow up on the implementation according to the below schedule:

- Integration of the WE's comments in the budget manual
- Preparation of the list of forms and assignment of responsibilities
- Preparation of a detailed plan and instructions to fill the forms
- Providing assistance to WEs in filling 2015 budget forms
- Preparation of the draft 2015 budget
- Obtaining the approval of the DGs on the 2015 budget forms and finalizing

3.1.6 - Develop procedures and a standard manual for internal audit within the WE, and conduct applied training to key departments

In April 2014, preparations continued for a training targeting the four WEs, which took place on 7 and 8 May 2014 to present the Audit manual to staff from the Water Establishments and obtain their commitment regarding its acceptance and implementation. A draft of the audit manual was finalized and shared with all WEs prior to the workshop to obtain their feedback.

The Audit manual and key issues related to its implementation were explained and discussed thoroughly during the two-day workshop, such as: code of ethics, automated systems audit, documentation and management, preliminary audit such as performance analysis, audit program, risk management, planning, methodology and reporting.

In June 2014, following the training, work was under way to prepare an action plan mapping the major steps needed to develop and streamline the Audit procedures and standard manual. Once finalized, the action plan will be shared with all WEs requesting their commitment. The WEs interested in pursuing this activity further will be asked to officially commit, dedicating staff to work with the LWSS team.

Major steps in the action plan were defined as follows:

- Conducting preliminary Audit
- Preparation of a risk plan
- Preparation of an audit strategic plan
- Preparation of an audit annual plan
- Preparation of an audit guide for selected audits
- LWSS to assist WEs in audit implementation for selected audits
- Updating audit manual and procedures

Component 4: Capital Investment Planning and Program/Project Management

There are no component four activities with the NLWE in the Year Five work plan.

Component 5: Procurement of Technical Equipment to Strengthen WEs

Work Plan Activities

Item	Activity Description	Program Resource	Deliverable by End of Year Five	Target Date
5.2	Upgrading Pumping and Energy Efficiency			
5.2.3	Review and design the replacement of nine submersible pumps and associated works	- CDM Smith (BG, GT) - EI-Ard	Tests completed and design produced	December 2013
5.2.4	Supply and install the replacement nine submersible pumps and associated works	- CDM (BG, GT) - Local subcontractor	Activity to be completed	March 2015

	and conduct training	(TBD)		
5.2.5	Testing and Commissioning	- CDM (BG, GT, EH) -Local subcontractor (TBD)	Activity to be completed	April 2015
5.3	Increasing Supply Hours to Areas Facing Supply Shortage			
5.3.1	Supply and install up to 9 back-up generators for key NLWE stations	- CDM (BG, GT) - Local subcontractor (TBD)	Activity completed	November 2013
5.3.2	Establish service agreements and conduct user training program for these generators	- CDM (BG, GT), DAI (MK) - Local subcontractor (TBD)	Activity to be commenced	April 2015

Personnel: BG-Bassem Ghayda; GT-Gulnard Ters; MK-May Koleilat

Below we provide additional context for selected activities presented in the table above.

Activity 5.2 - Upgrading Pumping and Energy Efficiency

This activity consists of replacing seven submersible pumps for the North Lebanon Water Establishment and purchasing an additional two pumps to be kept as spare, at a cost of \$626,000. The efficient operation of these pump stations is crucial to the livelihood of 297,825 beneficiaries especially the lower income population, who frequently incur steep costs to purchase water from private suppliers during shortage periods

On April 7, 2014, CDM Smith submitted their final evaluation of technical proposals and pointed out that all three (3) proposals had significant technical errors and omissions, therefore, were unacceptable. LWSS together with subcontractor CDM Smith provided each bidder with a list of deficiencies and requested new technical and financial proposals to correct the deficiencies and comply with the required technical specifications included in the bill of quantity. The deadline to receive the revised proposals was set for April 30, 2014. During this period LWSS answered many requests for clarification from the bidders, circulating responses to all bidders.

In May 2014, three bids were re-submitted and evaluated by CDM Smith. It was concluded that two of the proposals had several submission errors, omissions and technical deficiencies and were deemed technically unacceptable. The only technically compliant bid came from Modon Group.

On June 18, 2014, USAID Contracting Officer gave his approval to award the subcontract to Modon Group. LWSS and the supervising engineer CDM Smith held a kick off meeting on June 23, 2014 with the subcontractor to discuss the purpose and deliverables of the project. A formal notification letter was sent to the Director General of the NLWE informing him that the award was given to subcontractor Modon. In addition, the naming of a designated staff was requested to represent the establishment, conduct site handover and liaise with CDM Smith on matters related to work commencement and progress.

It is expected that a Notice to Proceed will be issued in the first week of July 2014. The duration of the project is 10 months but the contract provides for an additional 12 months as a defects liability period.

Activity 5.3 - Increasing Supply Hours to Areas Facing Supply Shortage

Throughout the reporting period, subcontractor Edan Group International continued the routine service maintenance on the eight installed generators for the NLWE. The monthly maintenance reports were submitted to the Heads of the NLWE branches. Complete documentation of maintenance records performed by Edan Group International will be turned over to NLWE at the end of the second year or after 2000 hours of maintenance services, whichever comes first.

Site visits will be carried out in August 2014 by the LWWSS team to insure that operators are properly using the required check lists and log sheets.

Component 6: Small- to Medium-Scale Infrastructure Work

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
6.2	Expanding Service Provision to Non-Served Areas			
6.2.1	Beit Mellat, Akkar, North Lebanon: Procurement and appointment of infrastructure works contractor.	LWWSS (WA) KREDO	Procurement completed; Subcontractor appointed	April 2014
6.2.2	Site implementation period ; O&M sustainability; support as needed.	KREDO Local subcontractor (TBD)	Activity completed	April 2015

Personnel: WA- Walid AbouZeid-Infrastructure PM

Below we provide additional context for selected activities presented in the table above.

Activity 6.2 - Rehabilitation and construction of a water supply network in Beit Mellat region in Akkar for the NLWE.

LWWSS is rehabilitating 26 km of the water network in the town of Bebnine in Beit Millat area, and constructing up to 21 km of new lines, costing 2.96 million dollars. As a result, 4360 beneficiaries will receive improved service of clean potable water.

Further to the consent of USAID to subcontract the works to the General Company for Quarries & Contracting (GCQC), a kick-off meeting was held on April 2, 2014, at LWWSS offices between the engineering team, GCQC and the consultant KREDO. During the kick off meeting, it was made clear that the supervising engineer will be responsible for leading the project forward in line with the drawings, specifications and BOQ. A more detailed program was developed by the subcontractor GCQC and approved by KREDO and LWWSS. GCQC submitted the prerequisite documents needed for the issuance of the Notice to Proceed including: a Performance Bond, Health & Safety Plan, Work Plan and insurance policies. After all the required documents were submitted, reviewed and approved by LWWSS, a Notice to Proceed was given to the subcontractor in May 2014.

An inaugural ceremony for the project sponsored by the Mayor of Bebnine took place in the municipality on April 29, 2014. The ceremony was attended by more than 200 people, including political and social figures, former mayors, local NGOs and clubs, USAID, LWWSS, KREDO and GCQC. During the ceremony, the project objectives and duration were presented, and appeals were made to the public to be patient with the disruption that this kind of construction might cause in the community. Temporary inconvenience will eventually lead to permanent improvements to the water supply services.

In May 2014, work on this project was progressing slowly due to some challenges the contractor was encountering as detailed in the challenges section below. All stakeholders however, showed their good will and demonstrated a willingness to collaborate to turn this into a successful project.

In June 2014, the Beit Mellat project continued to move forward but the progress was slower than planned, mainly due to problems with some citizens of Bebnine seeking employment on the project. The problems were resolved successfully with the support of the mayor. Up until end of June 2014, 3.5 kms out of 21 kms of new water lines were rehabilitated in Abda & Boubla, Al Hariq, and Al Ain & Raya districts.

The timeline related to this project is as follows:

Stage	Description	Completed By
Services Appointment	Appointment of consulting engineer. Environmental assessment and approvals.	February, 2013
Investigation, Preliminary and Detailed Design, Tender Package	<ul style="list-style-type: none"> - Stage 1: Research, field investigation, assessment and detailed project definition stage. Project strategy defined and agreed. - Stages 2 and 3: Preliminary and detailed design stage, detailed costing and programming and phasing. Final design and scope parameters agreed and coordinated with NLWE; Production of a complete design package for review and approval by LWWSS and NLWE. - Stage 4: Following approval of the design package, production of tender drawings and preparation of a complete bid package for LWWSS to procure the construction works. 	10 months – Completed by January, 2014
Procurement of Works	- Stage 5: Launching of Bid for works. Proposals received, evaluated and infrastructure subcontractor appointed.	2 months – Completed by March, 2014
Construction, Completion and	- Stage 6: Implementation of works until completion, commissioning and taking over.	10 months – Completed by March,

Stage	Description	Completed By
Commissioning	In parallel: - Capacity building to NLWE staff and outreach and community involvement activities, conducted by LWWSS and NLWE, to maximize the impact of the project.	2015

Component 7: Corporate Culture, Customer Service Orientation, and Public Outreach

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
7.3	Develop Tools and Support WEs in Adopting Corporate Communication			
7.3.2	Hosting of NL WE Corporate Website	Netways	Activity underway	February 2015

Below we provide additional context for selected activities presented in the table above.

Activity 7.3 – Designing and Implementing WE Corporate Website

This activity was completed successfully. LWWSS received the sign off documents in April 2014. The website (www.eeln.gov.lb) plays an essential role in disseminating public awareness messages to thousands of subscribers. In addition, it provides information on the services available to customers, allowing them to send their feedback to the NLWE. It also enables them to report on problems and malfunctions, thereby improving customer service efficiency and creating a positive relationship with the WE. The website could also serve as basis for the deployment of an on-line payment system in the future.

In order to ensure sustainability of this initiative, training was organized by LWWSS to five NLWE personnel to enable them to manage website content.

4. South Lebanon Water Establishment

Component 2: Capacity Building for Managerial, Technical and Operational Efficiency

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
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2.3	Build Pump Stations Operators Capacity in Operation and Maintenance			
2.3.1	Pump station operators basic O&M and H&S training	- DAI (MK) - KREDO	Activity conducted	October 2013
2.4	Public Administration and Process Management Training			
2.4.2	Public administration and process management training aiming at increasing staff familiarity with WE systems and processes	- LWWSS (MK) - ABA (MC)	Activity to be completed	September 2014

Personnel: BG-Bassem Ghayda; GT-Gulnard Ters; IN – Ihab Nasr; MK-May Koleilat

Below we provide additional context for selected activities presented in the table above.

Activity 2.3 – Capacity Building in Operation and Maintenance of Pump Stations

No further activities are planned in Year Five under this component.

Activity 2.4 - Public Administration and Process Management Training

This activity will enable SLWE’s new personnel to increase their administrative and managerial efficiency, and enhance the workflow. Work on this activity will start in Q4.

Component 3: Increase Financial and Commercial Viability of Water Establishments

Work Plan Activities

Item	Activity Description	Program Resource	Outcome by End of Year Five	Target Date
3.1	Upgrade Finance and Accounting Standards and Methods			
3.1.5	Develop procedures and a standard manual for yearly budgeting within the WE, and conduct applied training to key departments.	ABA (AA, MC)	Procedures defined, manual produced, training conducted.	December 2014
3.1.6	Develop procedures and a standard manual for internal audit within the WE, and conduct applied training to key departments.	ABA (AA, MC)	Procedures defined, manual produced, training conducted.	February 2015
3.1.7	Develop module, procedures and provide training on the Cost Tariff Model for Strategic Planning and Budgeting	ABA (AA, MC)	- Module installed, connected to ERP - Procedures defined, training conducted.	February 2015

3.2	Integrate the WEs Financial, Accounting, Customer Service and Business Process Systems (ERP)				
3.2.1	Procurement of software design and implementation	ABA (AA, MA), EDM		Activity completed	January, 2014
3.2.2	Process mapping and other prerequisites	ABA (AA, MA), EDM		Activity to be completed	March 2014
3.2.3	System implementation , adoption, user training, migration	ABA (AA, MA), EDM		Activity to be completed	September 2014
3.2.4	Assist in transition phase and provide on year on-site support	ABA (AA, MA), EDM		Activity to be completed	February 2015

Personnel: MA-Mitri Abou Jreich;AA-Ahmad Al Azzam

Below we provide additional context for selected activities presented in the table above.

Activity 3.1 – Upgrade Finance and Accounting Standards and Methods

3.1.5 - Develop procedures and a standard manual for yearly budgeting

During April 2014, preparations continued for a workshop that took place in May 2014, targeting the four WEs to explain and discuss the budget manual and key issues related to its implementation such as: policies, procedures, execution, forecast, methodology, reporting and templates. A draft of the budget manual was finalized and shared with all WEs to obtain their feedback and integrate it into the final version.

An action plan to standardize the budget across the four WEs and another action plan for the implementation of the manual for the 2015 budget were developed and shared with all WEs. The WEs interested in pursuing this activity were asked to officially commit, dedicating staff to work with the LWWSS team in accordance to the action plan. The deadline to receive the WEs' commitment was set for 26 May 2014.

All WEs expressed their interest and showed commitment and identified staff members to follow up on the development of the budget manual and standardization of the existing templates.

Accordingly a meeting took place on Wednesday, June 25, 2014, at LWWSS premises between Heads of Financial departments from the WEs and the LWWSS team in order to develop a unified standard budget template to be used by all establishments. Budget standardization was discussed in depth and comments were collected regarding the changes that needed to be made in order to reach one unified form. Attendees agreed on one template for existing budget expense categories, formats and definitions. It was agreed that a finalized draft standardized budget template will be shared with all 4 WE's for final approval and comments. Once feedback from the WEs is received, LWWSS will follow up on the implementation according to the below schedule:

- Integration of the WE's comments in the budget manual
- Preparation of the list of forms and assignment of responsibilities
- Preparation of a detailed plan and instructions to fill the forms
- Providing assistance to WEs in filling 2015 budget forms
- Preparation of the draft 2015 budget

- Obtaining the approval of the DGs on the 2015 budget forms and finalizing

3.1.6 - Develop procedures and a standard manual for internal audit

In April 2014, preparations continued for a training targeting the four WEs, which took place on 7 and 8 May 2014 to present the Audit manual to staff from the Water Establishments and obtain their commitment regarding its acceptance and implementation. A draft of the audit manual was finalized and shared with all WEs prior to the workshop to obtain their feedback.

The Audit manual and key issues related to its implementation were explained and discussed thoroughly during the two-day workshop, such as: code of ethics, automated systems audit, documentation and management, preliminary audit such as performance analysis, audit program, risk management, planning, methodology and reporting.

In June 2014, following the training, work was under way to prepare an action plan mapping the major steps needed to develop and streamline the Audit procedures and standard manual. Once finalized, the action plan will be shared with all WEs requesting their commitment. The WEs interested in pursuing this activity further will be asked to officially commit, dedicating staff to work with the LWWSS team.

Major steps in the action plan were defined as follows:

- Conducting preliminary Audit
- Preparation of a risk plan
- Preparation of an audit strategic plan
- Preparation of an audit annual plan
- Preparation of an audit guide for selected audits
- LWWSS to assist WEs in audit implementation for selected audits
- Updating audit manual and procedures

3.1.7 - Develop module, procedures and provide training on the Cost Tariff Analysis Module for Strategic Planning and Budgeting

During the reporting period, Data was being collected for the ERP system, but will eventually feed into the Cost Tariff Module. The two systems will be linked, as the structures of both are directly related. They are cost-center based and will share some common databases that would enable data exchange. Work on this module is expected to begin in December 2014, after the implementation of the ERP system has been fully completed.

Activity 3.2 - Integrating the WE's Financial, Accounting, Customer Service and Business Process Systems: The Enterprise Resource Planning (ERP) Platform

In April 2014, EDM started a one on one training to the SLWE staff covering four modules: Purchasing, Budget, Accounting and Administrative departments. The training consisted of 3 sessions for each module, 2 hours per day each. A guide manual was delivered to the users after the training.

In May and June 2014, work progressed well under this activity. The SLWE users were being cooperative and responsive to the new system. Details against each module are included in the below table.

Module Description	Completion Rate	Reporting Status	Comments
Procurement	90%	Reports will be tested in July 2014.	This module is fully operational and staff started issuing new purchase orders from the system. However, historical data is still being entered.
Budget	90%	Reports will be tested in July 2014.	Following the above cycle, the staff started using the system for old and new requests (budget reservation – budget contract – budget settlement). However, historical data is still being entered.
Inventory	90%	Reports will be tested in July 2014.	Following the above cycle, the staff started using the system for old and new requests (budget reservation – budget contract – budget settlement). However, historical data is still being entered.
Payroll	70%	Cannot confirm reporting status until testing for the Dec 2013-Jun 2014 data is complete.	The payroll for July has been tested and generated from the system. In addition the annual production incentives for the staff have been prepared and approved by the board of directors.
Human Resources	80%	Operational but reports will be generated after staff records have been entered into the system.	Development of this module is complete however staff records are still being entered into the system.
Accounting	80%	Operational but reports will be generated in July after historical data has been entered.	The accounting department is waiting to receive the historical data after being completed by the above departments.
Documentation and Registration	80%	Operational but reports have not been generated yet.	Staff can start working anytime on this module but the decision has not been taken yet.
Billing and Collection	70%	None	Development of this module is complete along with the training. However, EDM is still testing the data converted from the old system before going live.
CRM	70%	None	Development of this module is complete along with the training. However, EDM is still testing the data converted from the old system before going live.

Component 4: Capital Investment Planning and Program/Project Management

There are no component four activities with SLWE in the Year Five work plan.

Component 5: Procurement of Technical Equipment to Strengthen WEs

Work Plan Activities

Item	Activity Description	Program Resource	Deliverable by End of Year Five	Target Date
5.1	Identifying Water Production and Contributing to Water Demand Management			
5.1.1	Supply and install production meters, fittings and protection box/manhole (all non-metered sources in WE)	- CDM Smith (BG, GT) - Modon Group	Activity completed	October 2013
5.1.2	Establish service agreements, conduct training and complete meter reading	- CDM Smith (BG) - Modon Group	Activity to be completed	September 2014
5.4	Upgrading Water Analysis Laboratories			
5.4.4	Conduct user training program on the atomic absorption instrument	- LWWSS (MK)	Training to be conducted on atomic absorption instrument	August 2014

Personnel: BG-Bassem Ghayda; GT-Gulnard Ters

Below we provide additional context for selected activities presented in the table above.

Activity 5.1 - Identifying Water Production and Contributing to Water Demand Management

Meter Reading:

During the reporting period, subcontractor Modon Group continued the routine flow measurement readings on the installed source meters for the SLWE. Monthly reading reports were submitted to LWWSS for review and evaluation, and then forwarded to the SLWE.

SLWE dedicated a staff member to be responsible for entering meter reading data sheets submitted by the different SLWE branches. During April 2014, the two branches of Tyre and Bint-jbeil were still behind schedule. The heads of the branches were contacted and the missing information was received by end of April 2014.

In June 2014, some internal changes took place at the SLWE as the Meter reading management was transferred from the Project and Studies Department to the Production Department. In addition, new engineers were recruited; hence, several coordination meetings took place for orientation purposes and to ensure proper hand over of the meter reading activity. Site visits done in collaboration with the new staff, started in June and will continue through the coming few months to various metered locations. Follow up by LWWSS team on this activity will continue.

All seven departments were prompted by the DG to send their meter reading information on schedule, as this information was helpful for the SLWE’s planning processes. LWWSS on their part will continue sending SLWE the meter readings of Modon Group for comparison.

Metering Strategy:

During May 2014, Value Add consultant Philip Giantris visited the SLWE DG and Heads of Departments to explain the expected outputs of the metering strategy. He received the GIS data he needs to complete the final strategy draft planned to be submitted to the SLWE in July 2014. The metering strategy will include analysis of the current situation and recommendations.

Water metering strategy is an essential operational element for water demand management. System-wide water metering contributes to efficiency and conservation for the water utility, and is necessary in order to conduct system supply audits and water balances. A good metering strategy is a requirement for: Water loss control, water demand management, accounting and rate making, volume based consumption billing, verification of water and cost savings, and evaluation of the effectiveness and efficiency of conservation measures.

Activity 5.4 – Upgrading Water Analysis Laboratories

During the reporting period, meetings were held with Mrs. Amal Chidiac, Head of SLWE Laboratories and LWWSS team regarding the upcoming advanced training on the Atomic Absorption. The final plan and scope of work for the training were discussed and finalized. Training has been tentatively delayed till mid-August 2014 due to an accident that happened to the trainer. Final confirmation on the date of the training should be obtained in July 2014.

The Atomic Absorption machine is a very advanced technology. When it was first installed, the supplier Numelab provided basic training on how to operate the machine and use the different features in order to test for different contaminants. However it was not within his capacity to offer an in depth training on the testing methodologies and analytical aspects of the different techniques. The objectives of the upcoming training are explained below:

- 1) Offer guidance on how to conduct laboratory tests for heavy metals in drinking water such as: Cr, Co, Na, Cu, Mn, Pb.
- 2) Analyze, describe and clarify the various testing techniques.
- 3) Provide the SLWE laboratory team with the procedures required to carry out effective water analysis on heavy metals.
- 4) Supervise the full operation of preparing samples and standards ready to be tested
- 5) Offer guidance on how to control the storage stage of the samples.
- 6) Read, analyze and compare both the previous and current results.
- 7) Offer guidance on how to operate the hydrid system and how to conduct testing for the following metals: arsenic and mercury.

Component 6: Small- to Medium-Scale Infrastructure Work

Work Plan Activities

Item	Activity Description	Program Resource	Deliverable by End of Year Five	Target Date
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6.3	Pump Station Infrastructure Rehabilitation			
6.3.1	SLWE: Test and design pumps, motors and associated works for the rehabilitation of selected stations	CDM Smith (and their subcontractor DEP)	Activity completed	February 2013
6.3.2	SLWE: Supply and install pumps, motors and associated works for the rehabilitation of selected stations and conduct training	- CDM Smith - Local subcontractor (Al Rawan)	Infrastructure contract placed; works commenced	April 2015

Below we provide additional context for selected activities presented in the table above.

Activity 6.3 – Upgrading Pumping and Energy Efficiency

This activity consists in rehabilitating two major pump stations in South Lebanon, namely Batoulay and Wadi Jilo costing \$2.7 million dollars and serving 49 villages. After the work is complete, pump station efficiency will improve by up to 25%. As a result, seventy thousand people will receive continuous uninterrupted supply of clean water.

During April 2014, several coordination meetings took place with the SLWE, CDM Smith, LWWSS and construction subcontractor Al Rawan Company. Many issues were discussed including: the project status, updates, upcoming activities onsite, pump delivery schedule, the activities that need to be implemented and completed before the arrival of the new pumps, in addition to the shutdown period allowed by the water establishment during the replacement of the pumps. Change orders and subsequent additional costs were discussed in several meetings with LWWSS management. It was decided that change order activities should be finalized taking into consideration the limited project budget, allowing only for items that are of high priority and mandatory to be executed for the satisfactory installation and proper functioning of the completed project. The importance and responsibility of Al Rawan in keeping the pump stations operational during the construction and replacement of the pumps, in accordance with their subcontract clauses, was stressed during meetings with the DG and LWWSS management.

In May 2014, meetings were held with Al Rawan subcontractor in order to review CDM Smith comments on mechanical shop drawings and details related to Ouadi Jilo and Batoulay pump stations and to negotiate the cost and price breakdown for each new activity. The program of work for the upcoming activities was discussed in depth. Keeping Ouadi Jilo pump station running during the construction phase was re-emphasized. On May 14, 2014, a “Change Order Review” meeting was held with Al Rawan, LWWSS and CDM Smith. It was agreed that LWWSS will give an at risk Notice-To-Proceed to Al Rawan to start the change orders activities while awaiting USAID consent to modify the contract.

On June 4, 2014, a meeting was held at LWWSS premises between the USAID COR and alternate COR, LWWSS team and CDM Smith, to carry out in depth discussions regarding the change order, its

implications and all related details. During the meeting, it was agreed that the project team should submit the change order request to USAID CO in Cairo within a week. CDM Smith home office team was informed and more coordination took place to finalize the necessary documents including the change order cost break down and the final schedule for both electrical and mechanical works such as MCC assembly, dismantling and installation of new MCCs and boosters, in addition to temporary installation of MCCs. Also towards end of June, Al Rawan subcontractor started to remove the booster pumps that were not functional from Batoulay and Ouadi Jilo stations and transported them to the SLWE warehouse as the new pumps were expected to arrive early July 2014.

The time line of the project has been revised as per the below table:

Stage	Activity Description	Duration	Start Date	Finish Date
Investigation, Design, and Construction Package	<ul style="list-style-type: none"> • PS survey & data collection • Scope identification for local engineering services • Hiring of local engineering firm • Environment assessment • Production of complete design • Production of construction package 	10 months Now revised to 13 Months	1-Oct-11	31-Jul-12 revised to 15 Feb. 2013
Procurement of Rehab Works (Construction Subcontracting & Equipment Buy-outs)	<ul style="list-style-type: none"> • Advertise bid package • Evaluate and negotiate proposals • Award contracts upon USAID consent and approval 	5 months	1-Aug-12 Now revised to 16 Feb. 2013	31-Dec-12 Now revised to 30 June 2013
Implementation, Completion and Commissioning	<ul style="list-style-type: none"> • Site mobilization • Equipment procurement, shipping, clearance, and delivery to sites • Implementation of rehabilitation construction works • Commissioning (startup, testing, and troubleshooting) of equipment and pumps • O&M training and capacity building for SLWE personnel 	24 months Now revised to 18 Months	1-Jan 13 Now revised to 1 Aug 2013	Now revised to 31 Jan. 2015 (End of contract period)

Component 7: Corporate Culture, Customer Service Orientation, and Public Outreach

There are no component seven activities with SLWE in the Year Five work plan.

5. Study Tours and Conferences

There are no activities related to Study Tours and Conferences in Year Five.

C. COLLABORATION WITH DONORS AND GOVERNMENT OF LEBANON OFFICIALS

Donor coordination is an essential part of LWWSS project planning and execution in order to (1) avoid unnecessary duplication; (2) identify specific areas of coordination; and (3) identify areas where LWWSS can collaborate with other donors on specific projects or programs. The list of meetings and special events with the Government of Lebanon (GOL) and other donors below provides a clear picture of this important program activity.

Meeting with Donor, GOL Official or Special Event	Date	Attendees	Brief Synopsis of Meeting
BLUE GOLD Meeting at WISE Office	April 2, 2014	Blue Gold Reps, USAID Reps, LWWSS, WISE, WISE AE and LRBMS Reps	A meeting held for Blue Gold to become familiar with USAID water supply and water resources programs
SLWE Syrian Refugee Coordination Meeting	April 3, 2014	DG, SLWE; Donor Reps; Mitri Abi Jreiche, LWWSS	Meeting to inform and coordinate on programs impacting the Syrian Refugee Crisis.
Meeting with COR at USAID	April 15, 2014	Sana Saliba, COR Charbel Hanna, PMA Rana Maalouf, PM/F; Amal El Deek, Comms Mgr./M&E; Kaitlin Asrow, PM/H Bill Parente, COP	Meeting to discuss project updates, project issues, and project matters including remaining LOP budget and preliminary closedown plan.
Closing Workshop for Litani River Basin Management Support Program	April 16, 2014	LRA Reps; LRBMS project Reps; Various Donors; Bill Parente, COP; Rana Maalouf, PM Bassam Jaber, SA	Closing reports and ceremony of the LRBMS project.

Inauguration of Water Distribution Network Project in Bebnine, North Lebanon	April 29, 2014	Dr. Kiffah Al Kassar, Mayor; Charbel Hanna, USAID GCQC Reps; KREDO Reps; LWWSS Reps	Meeting with stakeholders of Bebnine Village to introduce the project, inform them of impending disruption due to construction, and improve willingness to pay for water supply services.
BWE Syrian Refugee Coordination Meeting	April 29, 2014	DG, BWE; Donor Reps; Rana Maalouf, LWWSS	Meeting to inform and coordinate on programs impacting the Syrian Refugee Crisis.
Meeting with USAID	May 6, 2014	Sana Saliba, COR Charbel Hanna, PMA Ahmed Al-Azzam, ABA Mike Chalah, ABA Rana Maalouf, PM Bill Parente, COP	Meeting for Ahmed Al-Azzam of ABA to present to USAID the detail and status of the ERP implementations in BWE and the SLWE.
Water Coordination Meeting at the MoEW	May 13, 2014	Abdo Tayar, Advisor to the Minister; Many reps of the donor agencies; Bassam Jaber, Adv. Bill Parente, COP	Regular monthly meeting with the MoEW, the WEs, and the various donor and humanitarian aid agencies.
BWE Water Coordination Meeting	May 27, 2014	Amal Deek, Rana Maalouf, LWWSS. Many reps of the donor agencies	Regular monthly meeting at BWE with the various donor and humanitarian aid agencies.
Meeting with USAID	June 4, 2014	Sana Saliba, COR Rami Wehbeh, Alt COR Rana Maalouf, PM J.Bechaalany, Enginee. Elias Hasbini, Procurement Manager Bill Parente, COP	Meeting to discuss the content of the change order to Al Rawan subcontract regarding Ouadi Jilo - Batoulay Pumps Stations of the SLWE.
Meeting with USAID	June 18, 2014	Sana Saliba Charbel Hanna Rana Maalouf Amal El Deek Katie Tilahun Bill Parente	Regular Project Meeting
Drought Management Workshop, LIVCD Project at Le Royal Hotel	June 19, 2014	USAID, GOL Officials, Contractors, Beneficiaries.	Workshop on the impacts and possible remedies to the current drought crisis in Lebanon.
Water Coordination Meeting at the MOEW	June 24, 2014	All reps from involved agencies	Donor coordination between the MOEW, Water Establishments and the Donor Community.

Coordination Meeting with EYH Project	June 10, 2014	Khadija Zahzah, PM EYH Jessy Feghali, EYH, Bill Parente, May Koleilat, Rana Maalouf, Amal El Deek	To discuss training activities for the WEs
SLWE Coordination Meeting	June 19, 2014	Amal Deek, Katie Tilahun, Rana Maalouf from LWWSS. Various donors from the WASH Group	Monthly WASH Coordination Meeting

E. CONTRACT DELIVERABLES

The second quarter, Year Five report was submitted to the COR in June 2014.

F. CHALLENGES, PROBLEMS, ISSUES

Expanding Service Provision to Non-Served Areas

On May 5, 2014 the Notice to Proceed was issued to the contractor "General Company for Quarries and Contracting (GCQC). Thereby, the contractor started his field survey and mobilization to the site in Bebnine. Mid-May, the contractor was subject to severe pressures from local small contractors who wanted to work with him as subcontractors. These pressures hindered the work to such an extent that the work stopped on site for a few days in May. In order to defuse the situation, several meetings were held at the Municipality of Bebnine, in the presence of the Mayor, the consultant KREDO, the contractor GCQC, LWWSS engineering team and the local contractors. It was agreed that the GCQC will hire as much of the work force as possible from Bebnine to appease the residents of the area and to reduce the high rate of unemployment in the region. So far the completion date is still as planned. LWWSS increased the frequency of their site visits and are following up closely with the contractor KREDO.

G. STTA DURING QUARTER

During this quarter the following personnel worked on LWWSS as STTAs:

Person and Subcontractor	Period of STTA	STTA Activity
Raed Ghantous, CDM Smith	March 31 - April 8, 2014	1) Project Coordination for final year; 2) SLWE Pump Station Rehabilitation site visit; 3) Meeting with subcontractor Al Rawan;
John Crippen, CDM Smith	March 31 - April 12, 2014	1) Project coordination and planning for final year; 2) NLWE Pump Procurement follow-up and award; 3) Visit LWWSS projects in SLWE; 4) Follow-up on QA/QC and records keeping requirements.
Kaitlin Asrow, DAI/Bethesda	April 9-19, 2014	1) Detailed review of LWWSS budget; 2) Refine remaining LOP Budget; 3) Assistance/Training of newer staff; 4) Introduction of close-down procedures to staff.
Ahmad Al Azzam, ABA	May 5 - 16, 2014	1) Follow up on BWE 2013 closing and reporting status, 2) Present Budget Manual for all four

		establishments, 3) Present Internal Audit Manual and Forms to all four establishments, 4) Review SLWE ERP implementation progress.
Philip Giantris, ValuAdd	May 18 - 24, 2014	1) Review Irrigation Services Assessment Report for BWE; 2) Meetings with Directors General of BWE and SLWE; 3) Review Wastewater Capital Investment Report; 4) Review progress on the System-wide Water Metering Strategy for SLWE.
Katherine Tilahun, DAI/Bethesda	June 16 - 27, 2014	1) Develop key impact success stories; 2) Develop technical staff skills in identifying impact; 3) Conduct site visits; 4) Draft impact success stories for review.

H. MAJOR ACTIVITIES PLANNED FOR NEXT QUARTER

Bekaa Water Establishment

- Continuation of ERP support to BWE. (Component 3)
- Investigate and design key best practices in budgeting. Draft Budget Manual and establish linkages with ERP (Component 3).
- Review BWE internal audit requirements and identify key best practices. (Component 3)
- Water Supply and Sewerage Master Plan. (Component 4)

Beirut-Mount Lebanon Water Establishment

- Follow up on the Audit and Budget manual activities. (Component 3)

North Lebanon Water Establishment

- Training on Network maintenance and repair. (Component 2)
- Follow up on the implementation of the Internal Audit and Budget Manuals. (Component 3)
- Follow up on the pump station rehabilitation. (Component 5)
- Follow up on rehabilitation of the water supply network in Beit Mellat. (Component 6)

South Lebanon Water Establishment

- Follow up on the implementation of the Internal Audit and Budget Manuals. (Component 3)
- ERP training and implementation. Modules going live. (Component 3)
- SLWE Lab advanced training on the Atomic Absorption machine. (Component 5)
- Source meter reading support by subcontractor Modon. (Component 5)
- Continuation of pump station rehabilitation work. (Component 6)

I. ENVIRONMENTAL COMPLIANCE REPORTING

The LWWSS project Environmental Mitigation and Monitoring Plan (EMMP) details the project environmental compliance requirements, as well as a list of reports for submission to USAID. The primary environmental compliance reporting tool is the Quarterly Report.

The LWWSS EMMP notes are an initial screening form which must be completed for each project activity. If the activity is determined to be in category 2, 3, or 4, then an Environmental Review and Assessment Checklist (ERAC) and an Environmental Mitigation and Monitoring Plan (EMMP) must be completed and approved by the LWWSS COR.

Initial screening forms were completed for each activity (available in the files of the LWWSS Environmental Specialist), and it was determined that the activities under Components 5 and 6 all require ERACs and EMMPs. The first table below, entitled “LWWSS Environmental Compliance Overview,” summarizes the environmental compliance actions for each LWWSS activity. The second table below, entitled “LWWSS Environmental Mitigation and Monitoring Actions,” details environmental mitigation and monitoring actions for each activity that requires an ERAC and EMMP.

Environmental Compliance Table 1:

LWWSS Environmental Compliance Overview				
Activities (Completed, On-going and Planned)		Environmental Compliance Actions		
#	Activity Description	Has an initial screening form been completed?	As per the screening form, is an ERAC and EMMP necessary?	Is there an approved ERAC and EMMP (if applicable)?
Component 2				
2.1	Source metering training in SLWE	Yes, see activity 5.1	See activity 5.1	See activity 5.1
2.2	Water quality management in the Bekaa implemented by AUB	Yes	No	N/A
2.3	O&M trainings for pump station operators in BWE, NLWE, and SLWE	Yes	No	N/A
2.4	IT literacy training for BMLWE and BWE	Yes, see activity 3.1	No	N/A

2.5	Network maintenance and repair training for BWE	Yes	No	N/A
Component 3				
3.1	Upgrade finance and accounting standards and methods	Yes	No	N/A
3.2	ERP platform and associated activities	Yes	No	N/A
3.3	Pilot Stakeholder exercise to sustain O&M of USAID WWTP	Yes	No	N/A
Component 4				
4.1	Business planning for BMLWE and SLWE	Yes	No	N/A
4.2	Pump station inventory in South Lebanon	Yes	No	N/A
4.3	Water utility management: conferences, workshops, specialist trainings and study tours	Yes	No	N/A
4.4	Master planning for the Bekaa	Yes	No	N/A
Component 5				
5.1	Source metering installation and training	Yes	Yes	Yes
5.2.1-5.2.2	Jeita pump station rehabilitation	Yes	Yes	Yes
5.2.3-5.2.4	Pump station rehabilitation in North Lebanon	Yes	Yes	Yes
5.3	Back-up power generators for NLWE pump stations	Yes	Yes	Yes
5.4	Upgrading water analysis laboratories in SLWE and BWE (Y3) and rehabilitation of laboratory and equipment purchases for BWE (Y4)	Yes	Yes	Yes for Y3 activities and Y4 activities
5.5	Customer Service Center in BWE	Yes	Yes	Yes
5.6	Upgrade IT equipment in BWE and SLWE	Yes	Yes	Yes for BWE and SLWE
5.7	GNSS procurement and training for SLWE	Yes	Yes	Yes
Component 6				
6.1	Network rehabilitation in Zahle (BWE)	Yes	Yes	Yes
6.2	Expanding service provision in Beit Mellat (NLWE)	Yes	Yes	Yes

6.3	Pump station rehabilitation in South Lebanon	Yes	Yes	Yes
6.4	Chlorination systems installation and training	Yes	Yes	Yes
Component 7				
7.1	Building customer service management structure at BWE	Yes	No	N/A
7.2.1	Customer Service training at BWE and BMLWE	Yes	No	N/A
7.2.2	On-the-job training in communication planning	Yes	No	N/A
7.3.1-7.3.2	Design and implement WE brand identity guidelines and design and implement corporate website	Yes	No	N/A
7.3.3	Design and adopt customer service application forms	Yes	No	N/A
7.4	Customer satisfaction survey	Yes	No	N/A
7.5	Youth water conservation programs	Yes	No	N/A
7.6.1	Media campaign in the Bekaa	Yes	No	N/A
7.6.2	World Water Day 2012 youth outreach	Yes	No	N/A

ERAC = Environmental Review and Assessment Checklist

EMMP = Environmental Mitigation and Monitoring Plan

* = These EMMPs were originally planned to be completed during Year Four, but the activities were not finalized during Year Four. Therefore, the EMMPs will be finalized once the design, technical specs, and other requirements are finalized.

Environmental Compliance Table 2:

LWWSS Environmental Mitigation & Monitoring Actions		
Activity # (as per Y5 Workplan)	Activity Description	Environmental Mitigation and Monitoring Update (as of April 01, 2014)
5.1	Source metering installation and training	The ERAC and EMMP were approved by LWWSS' COR at the end of the third quarter of Year Three.
		An initial EMMP was included in the subcontract with Modon (signed in April 2012), the vendor that is supplying and installing source meters. A more detailed EMMP, as well as an environmental mitigation inspection checklist, was given to Modon personnel at the end of the second quarter of Year Three and discussed in detail with them.
		Preparation works for the installation of source meters began at the end of the fourth quarter of Year Three, and installation of the source meters started at the end of the third quarter of Year Four. An LWWSS engineer was on site four days/week to supervise Modon's work.
		The installation of the source meters was completed during the fourth quarter of Year Four. As per the EMMP, Modon's site supervisor was responsible for ensuring that all mitigation measures are followed and completed an environmental mitigation inspection checklist at each site. Checklists were received and reviewed by the LWWSS' ES. The checklists are included in the EMMP monitoring files.
		In addition, the LWWSS' Environmental Specialist (ES) went on site visits with the LWWSS engineer to ensure that mitigation measures are being followed. Photos are included in the EMMP monitoring files.
5.2.1-5.2.2	Jeita pump station rehabilitation	The rehabilitation was completed in the second quarter of Year Four. The BMLWE engineers have completed the environmental mitigation inspection checklists and delivered them to the LWWSS' ES during the second quarter of Year Four. Also, the commitment letter from BMLWE's DG concerning the environmental mitigation process was received. The letter and checklists are included in the EMMP monitoring files.
		During the fourth quarter of Year Four, O&M training was implemented for the pump station operators on the use of the equipment, as well as health and safety measures.

		In addition, an O&M manual was given to the WE.
5.2.3-5.2.4	Pump station rehabilitation in North Lebanon	<p>This activity has been delayed and began during the second quarter of Year Four with well assessment tests. The well assessment tests were completed by the end of the fourth quarter of Year Four.</p> <p>The LWWSS' ES completed the ERAC and EMMP during the second quarter of Year Five and submitted them to COR review. Approval was received in the Q2 of Year Five.</p> <p>In Q3 of Year 5, The EMMP, as well as an environmental mitigation inspection checklist, was included in the subcontract with MODON Group. The M&E manager met with the Modon Group and discussed in details the EMMP and inspection checklists and requested the amendment of the Health and Safety plan to include environmental mitigation measures. It was agreed also that a permit to a public dump site should be submit to LWWSS prior to the commencement of the work.</p>
5.3	Back-up power generators for NLWE pump stations	<p>The ERAC and EMMP were approved by LWWSS' COR during the fourth quarter of Year Three.</p> <p>The EMMP, as well as an environmental mitigation inspection checklist, was included in the subcontract with Edan Group International (signed in September 2012), the vendor that is supplying and installing the back-up generators.</p> <p>There have been two amendments to the EMMP during the second quarter of Year Four, both dealing with mitigation of the noxious exhaust from the generators. The second amendment was approved by LWWSS' COR during the second quarter of Year Four.</p> <p>The installation of the generators began in the third quarter of Year Four, and Edan Group International's site manager was ensuring that the mitigation measures were being followed at each site and completing the checklist. LWWSS engineers were also on site to monitor Edan's work. In addition, the LWWSS ES collected and reviewed the checklists, and conducted site visits to ensure that mitigation measures were being followed. The checklists are included in the EMMP monitoring files.</p> <p>During the first quarter of Year Five, the following problem was identified: Due to the small geographic area, the power generator provided by the LWWSS Program to NLWE in Beshmezzine was placed only 7 meters away from the nearest inhabited house. This would normally be in violation of environmental principles which would require a minimum of 15 meters mandatory distance between exhaust emissions and an inhabited area. One of the proposed solutions to this problem is planting trees to</p>

		<p>mitigate the negative environmental impact.</p> <p>During the second quarter of Year Five, the problem of the generator exhaust emissions being placed in close proximity to inhabited areas was resolved by planting Cypress trees to mitigate the negative effect on the environment, improve air quality, and reduce pollution.</p> <p>A memo was sent to NLWE DG requesting a commitment letter agreeing to dispose of the equipment in an environmentally responsible manner at the end of the useful life of the equipment. LWWSS has received a positive response. Both the memo and the response can be found in the EMMP monitoring files.</p>
<p>5.4</p>	<p>Upgrading water analysis laboratories in SLWE and BWE (Y3) and rehabilitation and equipment procurement in BWE (Y4)</p>	<p>-The ERAC and EMMP for the Year Three activities in SLWE and BWE were approved by LWWSS' COR during the second quarter of Year Three.</p> <p>-The ERAC and EMMP for the Year Four activity with BWE were completed in the second quarter of Year Four.</p> <p>LWWSS' capacity building specialist and engineers conducted frequent site visits to the laboratories throughout Year Three to ensure that all mitigation measures were followed and reported back to the ES. In addition, they took photos for documentation. The ES also conducted a couple of site visits to both SLWE and BWE and found that all mitigation measures were being followed.</p> <p>As per the EMMP, both the SLWE DG and the BWE DG signed commitment letters agreeing to follow detailed safety procedures during use of the equipment and to dispose of laboratory equipment in an environmentally responsible manner at the end-of-useful life of the equipment.</p> <p>The ERAC and EMMP for the Year Four activity with BWE was completed in the second quarter of Year Four and sent to the COR. The EMMP was revised in the third quarter after having identified with the BWE Head of Laboratories and AUB an adequate microbiological waste disposal, and after having designated a solid waste landfill. The ERAC and EMMP were sent to the COR in the third quarter for approval.</p> <p>During the fourth quarter, the ERAC and EMMP were approved by COR. However, another modification included the waterproofing task due to the extension of the scope of the lab rehabilitation (based on the DG request). The final ERAC and EMMP were approved at the end of the fourth quarter of Year Four. In addition, the DG signed a commitment letter to abide by safety measures and to dispose of laboratory equipment in an environmentally responsible manner, including disposal of microbiological waste after incineration. The commitment letter can be found in the EMMP monitoring files.</p>

		<p>The LWWSS ES coordinated with Sanabel regarding the mitigation measures, and conducted site visits to the lab during rehabilitation and waterproofing works to ensure that mitigation measures are being followed. Photos can be found in the EMMP monitoring files.</p> <p>A training was conducted on water quality monitoring during the second quarter of Year Four, and another one will be conducted in the second quarter of Year Five on the use of the equipment, and health and safety measures.</p>
5.5	Customer Service Center in BWE	<p>The ERAC and EMMP were approved by LWWSS' COR during the third quarter of Year Three.</p> <p>Rehabilitation - The contractor ensured that all mitigation measures were followed, and completed an environmental mitigation inspection checklist and turned this into the ES. LWWSS' Customer Service Specialist conducted frequent site visits during the rehabilitation and reported back to the ES, as well as taking photos for documentation. All photos are included in the EMMP monitoring files.</p> <p>Operation - As per the EMMP, the BWE DG signed a commitment letter to follow the mitigation measures during operation. The ES also conducted a couple site visits to the customer service center during operation to ensure that these measures are being followed and took photos for documentation. All photos are included in the EMMP monitoring files.</p>
5.6	Upgrade IT equipment in BWE	<p>The ERAC and EMMP were approved by LWWSS' COR during the second quarter of Year Three.</p> <p>As per the EMMP, the BWE DG signed a commitment letter agreeing to dispose of IT equipment in an environmentally responsible manner at the end-of-useful life of the equipment.</p>
	Upgrade IT equipment in SLWE	<p>The ERAC and EMMP for SLWE were approved by LWWSS' COR during the second quarter of Year Four. As per the EMMP, the SLWE DG signed a commitment letter agreeing to dispose of IT equipment in an environmentally responsible manner at the end-of-useful life of the equipment. The letter is included in the EMMP monitoring files.</p>
5.7	GNSS procurement and training for SLWE	<p>The ERAC and EMMP were approved by LWWSS' COR during the second quarter of Year Three.</p> <p>As per the EMMP, the SLWE DG signed a commitment letter agreeing to dispose of the GNSS equipment in an environmentally responsible manner at the end-of-useful life of the equipment.</p>

6.1	Network rehabilitation in Zahle (BWE)	The ERAC and EMMP were submitted to the LWWSS COR at the end of the fourth quarter of Year Three and were approved during the first quarter of Year Four.
		Environmental compliance language was included in the subcontract with WET, the contractor that is designing and supervising the network rehabilitation.
		The EMMP was developed after the preliminary design was submitted by WET and WET was given the EMMP and the environmental mitigation inspection checklist developed by LWWSS' ES.
		The EMMP was included in the subcontract with the construction subcontractor, who will be responsible for following mitigation measures during the rehabilitation. WET will be responsible for monitoring the construction subcontractor and will fill out the checklists and turn them in with monthly reports.
		The rehabilitation began on May 27, 2103, in the third quarter of Year Four. The LWWSS ES coordinated with WET to receive the checklists. The LWWSS' ES conducted site visits during the fourth quarter to ensure that all mitigation measures were being followed.
		In Q1 the contractor filled out the checklists and turned them in with the monthly reports. Constant monitoring and follow up on Environmental mitigation measures was being done by the subcontractor in coordination with the site supervisor and the ES.
		An environmental site visit was carried out in Q2 to ensure that all mitigation measures were being followed. Photos were taken. All documents are available in the EMMP monitoring files. Work was finalized. No more activities are expected to take place.
6.2	Expanding service provision in Beit Mellat (NLWE)	This activity began during Year Four. LWWSS' ES completed the ERAC and EMMP during the first quarter of Year Five, after the subcontractor has completed the design. The ERAC and EMMP were submitted to the COR for review and approval was received in Q2. The EMMP and checklist were shared with both the site supervisor and subcontractor. The LWWSS ES will go on site visits once rehabilitation begins.
		In Q3, work on this project commenced. A Health and Safety plan inclusive of the Environmental Mitigation Measures was submitted to LWWSS and approved. Also the permit to a public dumpsite was submitted. Environmental check lists are being filled out by the site supervisor and submitted on monthly basis. Environmental site visits are planned for Q4. Documents are available in the EMMP monitoring files.
6.3	Pump station rehabilitation in South Lebanon	This activity began during Year Four. The LWWSS ES completed the ERAC and EMMP during the second quarter of Year Four when the final design was completed by CDM Smith and their subcontractor Design Engineering Partners (DEP). As per the EMMP,

		<p>the SLWE DG signed a commitment letter agreeing to dispose of excavation waste and decommissioned equipment at the Ras Al Ain landfill.</p> <p>The ERAC and EMMP were submitted to LWWSS COR during the second quarter of Year Four and approved in the fourth quarter of Year Four.</p> <p>During the fourth quarter, the EMMP was shared with subcontractor, and the checklist was shared the LWWSS site supervisor. The LWWSS ES will go on site visits once rehabilitation begins.</p> <p>In Q1, Inspection checklists were filled by the site supervisor .Environmental site visits were planned for Q2.</p> <p>Follow up and monitoring continued through Q2 to ensure Environmental mitigation measures were being followed by the subcontractor in coordination with the site supervisor and the ES. Checklists were filled and submitted also an environmental site visit was carried out. Photos were taken. All documents are available in the EMMP monitoring files.</p>
		<p>Follow up and monitoring continued through Q3 of Year Five, to ensure Environmental mitigation measures were being followed by the subcontractor in coordination with the site supervisor and the M&E manager. Checklists were filled and submitted and an environmental site visit was carried out to ensure environmental mitigation measures were being adhered to. Photos were taken. All documents are available in the EMMP monitoring files.</p>
6.4	Chlorination systems installation and training	<p>The ERAC and EMMP were approved by LWWSS' COR during the first quarter of Year Three.</p> <p>LWWSS' capacity building specialist and engineers conducted frequent site visits to chlorination sites throughout Year Three to ensure that all mitigation measures were followed and reported back to the ES, as well as taking photos for documentation. Photos are included in the EMMP monitoring files.</p>

ERAC = Environmental Review and Assessment Checklist

EMMP = Environmental Mitigation and Monitoring Plan

ES = LWWSS Environmental Specialist