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# WATER INFRASTRUCTURE SUPPORT AND ENHANCEMENT FOR LEBANON (WISE-LEBANON)

THIRD ANNUAL REPORT (OCTOBER 2014 – SEPTEMBER 2015),  
INCLUDING THE TWELFTH QUARTER (JULY – SEPTEMBER 2015)

**OCTOBER 2015**  
**Report No. 30**

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**October 2015**

**Contract No. EPP-I-00-04-00020-00**

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**Report No. 30**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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## ACRONYMS

A&E	Architectural and Engineering
ADS	Automated Directives System
BMLWE	Beirut Mount Lebanon Water Establishment
BWE	Bekaa Water Establishment
BoQ	Bill of Quantities
CLIN	Contract Line Items Numbers
CMMS	Computerized Maintenance Management System
COP	Chief of Party
COR	Contracting Officer's Representative
DG	Director General
DQA	Data Quality Assessment
EA	Environmental Assessment
EMMP	Environmental Mitigation and Monitoring Plan
ER	Environmental Review
GoL	Government of Lebanon
IEE	Initial Environmental Examination
KPI	Key Performance Indicator
LOC	Letter of Commitment
LWWSS	Lebanon Water and Wastewater Sector Support
M&E	Monitoring and Evaluation
MoE	Ministry of Environment
MoEW	Ministry of Energy and Water
MOU	Memorandum of Understanding
NLWE	North Lebanon Water Establishment
O&M	Operations and Maintenance
PIAP	Performance Improvement Action Plans
PIRS	Performance Indicator Reference Sheet
PMBP	Performance Monitoring and Benchmarking Program
PMP	Performance Monitoring Plan
PMU	Project Management Unit
QA/QC	Quality Assurance Quality Control
RFTOP	Request for Task Order Proposal
SI	Social Impact
SLWE	South Lebanon Water Establishment
SOW	Scope of Work or Statement of Work
SQP	Supervision Quality Plan
WE	Water Establishment
WISE	Water Infrastructure Support and Enhancement for Lebanon
USAID	United States Agency for International Development



# **1. WISE-LEBANON PROGRAM: YEAR 3 HIGHLIGHTS**

## **1.1 Year 3, First Quarter Highlights**

During this quarter the WISE-Lebanon program concentrated on: coordinating activities and approvals with CDM Smith, per the WISE-Lebanon Task Order; providing EMMP training to the staff of the fourth Water Establishment and to the key staff of the fourth construction subcontractor; providing continuous close supervision of the four ongoing construction projects; conducting bi-weekly construction progress meetings with the subcontractors and the A&E firm to monitor progress, discuss technical issues, and resolve problems; assisting the water establishments in developing and distributing public awareness messages about the ongoing construction projects, about using water wisely, and about properly registering their service connections with the water establishments; preparing success stories and program highlights and submitting them to USAID for publication on the USAID website and on Facebook; evaluating the first two host communities quick impact projects (procuring fuel tanker trucks for BMLWE and procuring O&M tools for BWE), awarding subcontracts to the most qualified and responsive bidders, and receiving USAID approval on those subcontracts; and preparing the tender documents and issuing the tenders for two other host communities quick impact projects (Ablah Reservoir Rehabilitation and Ebel El Saki pump station rehabilitation.)

## **1.2 Year 3, Second Quarter Highlights**

During this quarter the WISE-Lebanon program concentrated on: coordinating activities and approvals with CDM Smith; providing specialized environmental training in selected subject areas to the staff of the North Lebanon Water Establishment; providing continuous close supervision of the four ongoing construction projects; conducting bi-weekly construction progress meetings with the subcontractors and the A&E firm to monitor progress, discuss technical issues, and resolve problems; assisting the water establishments in developing and distributing public awareness messages about the ongoing construction projects, about using water wisely, and about properly registering their service connections with the water establishments; preparing the BWE O&M Responsiveness success story and program highlights and submitting them to USAID for publication on the USAID website and on Facebook; evaluating the first two host communities quick impact construction projects (Ablah Reservoir Rehabilitation and Terbol Reservoir Construction), awarding subcontracts to the most qualified and responsive bidders, and drafting requests for USAID approval on those subcontracts; and preparing the tender documents for two other host communities quick impact construction projects (Ebel El Saki pump station improvements and the Ayoun Es Samak spring catchment). The WISE-Lebanon team also participated in implementing four grant agreements on behalf of the Chemonics LCSi program sponsored by the Office of Transition Initiatives (OTI). These grant agreements co-funded the procurement of pumps and accessories for the Terbol pump station; pumps for the Ayoun Es Samak spring catchment improvement project; O&M tools for the Bekaa Water Establishment; and the installation of electrical cables for the Batoulay pump station. All of these projects are in various stages of design or construction.

## **1.3 Year 3, Third Quarter Highlights**

During this quarter, the WISE-Lebanon program concentrated on: coordinating activities and approvals with CDM Smith; providing specialized technical trainings in selected subject areas

(O&M of WWTP, Integrated Water Resources Management, and Management of Ground Water) to respective staff of the North Lebanon Water Establishment, Bekaa Water Establishment, South Lebanon Water Establishment. Providing continuous close supervision of the three ongoing construction projects as CPS rehabilitation has been concluded in the previous quarter; conducting bi-weekly construction progress meetings with the subcontractors and the A&E firm to monitor progress, discuss technical issues, and resolve problems; Issuing regular success stories and program highlights and submitting them to USAID for publication on the USAID website and on Facebook; monitoring on-going host communities quick impact construction projects and preparing the call for bids for other host communities quick impact construction projects. The WISE-Lebanon team also launched a call for proposal for the development of a documentary filming activity over the various USAID funded water programs. WISE team participated and assisted the BWE to perform the regular Water Sector Coordination meetings and provided technical advice to other development agencies working on the WASH sector. WISE team worked directly with BWE management and BOD set up and endorse a consumption-based tariff which will be adopted in HEO early 2016 in HEO and other service areas in the Bekaa.

#### **1.4 Year 3, Fourth Quarter Highlights**

During this quarter as well the WISE-Lebanon program focused on: continually coordinating activities and seeking technical approvals with CDM Smith; conducting regular bi-weekly construction progress meetings with the subcontractors and the A&E firm to monitor progress, discuss technical issues, and resolve problems. WISE launched key public campaigns during this quarter mainly through billboards and unipoles in and around HEO and overall awareness messages, notices and meter brochures about the ongoing construction projects, about using water wisely, and about properly registering their service connections with the water establishments. WISE also launched the documentary filming activity covering the various USAID funded water programs; concluded a budget evaluation and de-scoping of host communities quick impact construction projects (mainly de-scoping of Terbol Reservoir Construction, and reduction in the scope of Ebel el Saki pump station improvements and Ayoun El Samak spring catchment to only include procurement of required pumps), and as result achieved CO approval for no-cost extension until end of December 2015. WISE also ensured the timely completion and handing over of the installation of electrical cables for the Batoulay pump station, and the handing over of the 17,000 liters tanker truck to BMLWE.

## 2. INTRODUCTION

### 2.1 Background

The Water Infrastructure Support and Enhancement for Lebanon (WISE-Lebanon) program is a three-year activity funded by the U.S. Agency for International Development (USAID) with the objective of improving Lebanon's capacity in the management of water resources through water infrastructure upgrades and related management support. WISE-Lebanon is comprised of three components, including: (1) project identification and design – performing a focused analysis within potential areas of intervention and identifying specific projects and activities, developing architectural and engineering designs, and preparing bidding documents for the implementation of selected projects, (2) project implementation – providing engineering, construction, procurement, and construction supervision/management services for the implementation of selected water infrastructure projects, and (3) capacity building on implemented capital investment to enhance the capacity of water establishments (WEs) on the management of the implemented projects. The project is now more than 83 percent through the time allocated and progress has accelerated to fully implement all the remaining tasks under Components 2 and 3, in order to continue forward with full construction on all four major infrastructure projects and the host communities' quick impact projects during Year 3.

The WISE-Lebanon project is being implemented by prime contractor Chemonics International Inc., and is supported by subcontractors KREDO S.A.L. and ELARD S.A.R.L. The Chemonics field office team was established in Beirut in October 2012 to undertake the work. The project is being implemented in coordination with the Government of Lebanon (GoL), water establishments (WEs), municipalities, and the private sector, including other USAID-funded contractors working in the sector on water-related issues. The project also recognizes the current efforts of other donors in the sector and is working with them to obtain synergies in the implementation of programs where appropriate. WISE-Lebanon is cooperating closely with those projects to capitalize on their achievements and lessons learned to date, and is leveraging their successes to further the objectives of WISE-Lebanon programs.

### 1.1 Task Descriptions

The WISE-Lebanon program comprises three inter-related components, referenced in the WISE-Lebanon task order as Contract Line Item Numbers (CLINs), in order to address the fundamental problems of water supply utility performance and sustainability in Lebanon. These CLINs each have a number of defined tasks, as laid out in the WISE-Lebanon task order and as follows:

#### **CLIN 1 (Task 1): Project Identification and Design**

- *Task 1.1: Develop a Startup Plan and a Work Plan.* Develop four weeks after award a Startup Plan to layout the planned activities for the six months of the project. By month eight after award, the Contractor shall develop a Work Plan to capture all of the project activities for the life of the project. The Work Plan shall be broken down into individual activities that can be executed separately in a phased approach, with a cost estimate and duration of each activity.
- *Task 1.2: Conduct a series of meetings with the regional WEs and USAID/Lebanon.* Perform a series of meetings with the regional WEs and USAID/Lebanon to assess the infrastructure needs of the WEs within the areas of proposed interventions, and identify

specific priority projects. The Contractor shall assess strengths, weaknesses, challenges, and opportunities in each of the WEs.

- *Task 1.3: Develop an Analytical Assessment/Feasibility Report.* Develop by month five after award, in coordination with USAID/Lebanon, an Analytical Assessment/Feasibility Report of potential specific projects that can be implemented including an engineering cost estimate and cost/benefit analysis of these options. The Contractor shall provide technical recommendations to USAID/Lebanon, with order of importance, on the best option(s) while considering the following criteria: need, cost, cost/benefit, sustainability, WE performance, impact, available resources, and visibility for USAID. The Contractor shall include in the report a proposed Sustainability Benchmark Schedule to be agreed on between USAID/Lebanon and the partnering WEs to include a schedule of major actions to be undertaken by the WEs during progress of each of the project options to ensure its sustainability. The Contractor shall assist USAID/Lebanon with the final decision on one or more projects to be implemented.
- *Task 1.4: Evaluate WEs' performance to measure their progress towards achieving efficient and sustainable operations.* In coordination with the LWWSS program, the Contractor will evaluate WEs performance by reviewing specific financial and management targets that could best illustrate the WEs progress towards achieving efficient and sustainable operations. Indicators of progress could be illustrated through improved bill collection and water revenues, cost recovery percentages, increase in number of customers, increase in hours of service delivery, reduction in water supply system breaks, development of accurate and timely financial reports, enhancement of management effectiveness, and improved customer service.
- *Task 1.5: Develop the engineering design and technical specifications for the projects selected under Task 1.3.* Develop by the end of month ten after award, the Engineering and Architectural Design and Specifications of the selected project(s) and submit them to CDM Smith, the Architectural and Engineering (A&E) firm awarded the WISE/A&E contract, for approval. USAID/Lebanon might request the preparation of documents for one or more of the identified options, but might not necessarily implement all of them under the WISE contract.
- *Task 1.6: Develop a Construction Quality Assurance/Quality Control Plan and a Safety Management Plan.* Develop a Construction Quality Assurance/Quality Control Plan and a Safety Management Plan and submit them to CDM Smith for approval.
- *Task 1.7: Conduct Environmental Assessments on the projects selected under Task 1.3.* Perform an Environmental Assessment (EA), per USAID/Lebanon's request, on selected or all activities that are determined by USAID to have a negative environmental impact. Develop Environmental Mitigation and Monitoring Plans (EMMP) for planned activities that might have an impact on the natural environment.
- *Task 1.8: Initiate a Prequalification process in coordination with the A&E firm.* Initiate soon after the award, a Prequalification process, in coordination with CDM Smith, for the identification of local subcontractors qualified to execute projects of similar anticipated size and complexity.
- *Task 1.9: Prepare construction bidding documents for tendering.* Prepare, in coordination with CDM Smith, the Construction Bidding Documents for the selection

of local engineering and construction firms to implement projects selected by USAID/Lebanon.

## **CLIN 2 (Task 2): Project Implementation**

- *Task 2.1: Select and subcontract with local engineering and construction firms for project implementation.* Following the completion of the prequalification process and the preparation of construction bidding documents, Chemonics shall proceed with the bidding process for the selection of the design and/or construction subcontractors to execute the specific projects selected by USAID/Lebanon. This includes the invitations to tender, technical analysis/review of the bidders' proposals, and selection/award of winning firms. CDM Smith shall provide technical input and validate this process per the working relationship between Chemonics and CDM Smith. The competition process must be in full compliance with USAID procurement rules and regulations, allow utmost consideration for fairness in competition, and receive USAID subcontract consent per the procurement requirements of USAID.
- *Task 2.2: Manage the design and construction process.* Chemonics shall manage all activities under the project including management of the selected subcontractors. Chemonics shall properly coordinate project activities, provide technical recommendations and decisions on the day-to-day progress of the project, and shall coordinate all engineering technical matters with CDM Smith per the working relationship described in Section E of the WISE-Lebanon RFTOP.
- *Task 2.3: Monitor the sustainability benchmark compliance.* Assist USAID/Lebanon in monitoring the Sustainability Benchmark Schedule agreed with the partnering WEs and provide the necessary recommendations.
- *Task 2.4: Procure, ship, install, and commission specific technical equipment related to the specific needs of the infrastructure projects.* Provide for the procurement, shipping, installation, and commissioning of specific technical equipment and spare parts required as an integral part of the infrastructure projects, and equipment and spare parts identified as a separate need by the WEs. Chemonics shall assess the relevant WEs needs in terms of water monitoring and leak detection tools along with their ancillary computer hardware and software, and provide for their procurement, shipping, installation, and commissioning. Chemonics shall also provide for the necessary training of selected WEs personnel on this equipment.

## **CLIN 3 (Task 3): Capacity Building on Implemented Capital Investment**

- *Task 3.1: Organize training sessions and study tours (as needed).* Organize training sessions and study tours (if needed), and provide training materials, within the context of USAID Participant Training, to improve and build the regional WEs' capacity in: planning and budgeting for water investments, managing effectively the public investment through the project cycle, and capital investment sustainability. Capacity building shall be specifically focused on (or related to) the implemented projects, and complimentary to similar activities under the USAID/Lebanon LWWSS program.
- *Task 3.2: Provide targeted on-the-job training.* Exercise the learning by doing approach through carrying out all of the WISE contract activities in direct collaboration with WE staff with the constant goal of building their capacity to implement similar activities on their own in the future.

- *Task 3.3: Develop O&M Manuals and provide O&M supervision.* Develop operation and maintenance (O&M) manuals for all of the delivered infrastructure projects. Provide Operation and Maintenance supervision on the completed infrastructure projects for at least six months post completion.

### Host Communities Quick Impact Projects

In August 2013, USAID requested that the WISE-Lebanon program conduct a rapid assessment of the communities served by the Water Establishments (WE) and directly affected by the Syrian refugee influx in order to identify, develop, recommend, and potentially implement integrated interventions. The focus of the interventions is to raise the capacity of the WEs to cope with the increase in water demands due to the refugee influx and to address the recurring emergencies resulting from an overall volatile situation in the Middle East region.

As a result of the mentioned rapid assessment, six quick impact projects were identified in collaboration with the four Water Establishments as priority activities. On July 24, 2014, USAID modified the WISE-Lebanon Task Order No AID-268-TO-12-00002 to revise its scope of work by adding the following quick impact projects and activities to support the Lebanese communities hosting Syrian refugees:

No	Water Establishment	Proposed Interventions and Procurements	Estimated Implementation Time (months)
1	North Lebanon	Spring catchment, including concrete catchment, pumps, pump station, and required accessories for Ayoun El Samak spring within the Minyeh Branch service area	12
2	Bekaa	Reservoir rehabilitation (200 m <sup>3</sup> ) as part of the Ablah reservoir (network to be replaced by the EU with World Vision)	10
3*	Bekaa	New reservoir construction (300 m <sup>3</sup> ) at Terbol	12
4	Bekaa	O&M tools and network repair equipment for up to four branches in the Bekaa	6
5	South Lebanon	Procurement of three submersible pumps within the Ebel el Saki location	4
6	Beirut/Mount Lebanon	Two fuel tanker trucks (17,000 + 28,000 liters)	6

\* cancelled due to budget and time constraints

## 3. ACHIEVEMENTS: YEAR 3, TWELFTH QUARTER OF THE LEBANON-WISE PROGRAM

The fourth quarter of the third year of the project has resulted in significant progress on many aspects of the Work Plan. The quarter has been productive in implementing several tasks under CLIN 2 - Project Implementation for the four primary infrastructure projects and the six host communities' projects. The main activities and key achievements of the WISE program in the twelfth quarter of Year 3 are highlighted below:

### 3.1 Summary of Achievements in Current Quarter

The WISE project continues to meet the requirements of the Task Order and during this quarter has concentrated on: continually coordinating activities and approvals with CDM Smith, per

the WISE-Lebanon Task Order; providing specialized environmental training in selected subject areas to the staff of the North Lebanon Water Establishment; providing continuous close supervision of the four ongoing construction projects; conducting bi-weekly construction progress meetings with the subcontractors and the A&E firm to monitor progress, discussing technical issues, and resolving problems. In this quarter, WISE launched key public campaigns during this quarter mainly through billboards and unipoles in and around HEO and issued awareness messages, notices, and meter brochures about the ongoing construction projects, using water wisely, and about properly registering their service connections with the water establishments. WISE also launched the documentary filming activity covering the various USAID funded water programs; concluded a budget evaluation and de-scoped some of its host community quick impact construction projects as necessary (mainly Terbol Reservoir Construction, and a reduction in the scope of Ebel el Saki pump station improvements and Ayoun El Samak spring catchment to only include procurement of required pumps). WISE achieved CO approval for a no-cost extension until end of December 2015 and also ensured the timely completion and handing over of the installation of electrical cables for the Batoulay pump station, and the handing over of the 17,000 liters tanker truck to BMLWE. A summary of each of the four major infrastructure projects is contained in Section 3.3 of this quarterly report, and detailed construction status tables are included in Annex 4.

The WISE-Lebanon team continues to develop synergies with the LWWSS program and other donor programs throughout the project implementation. The program is using criteria defined in the performance Monitoring and Evaluation plan (M&E) Report to help the WEs maximize the benefits gained from the infrastructure elements of the program.

### **3.2 Achievements and Progress on Deliverables**

This section reports on the progress of the activities described and scheduled in the Year 1, Year 2, and Year 3 Work Plans approved by USAID and the achievements as a result of those activities. It discusses the completed and ongoing activities, as needed. Most tasks have one or more corresponding deliverables.

#### **3.2.1 Task 1.1 Develop a Startup Plan and a Work Plan**

This task consisted of two sub-tasks as follows:

- a. *Develop a Startup Plan to lay out planned activities for the first 6 months of the WISE project.* A Startup Plan was prepared and submitted to USAID on November 2, 2012. The COR provided written comments on the plan; the plan was then revised and re-submitted to USAID on November 23, 2012. It was approved by USAID on November 30, 2012. *As a result, this subtask was completed November 30, 2012.*
- b. *Develop a Work Plan to capture all of the project activities for the life of the project.* The Year 1 and Year 2 Work Plan was prepared and submitted in draft form to USAID on May 24, 2013. The COR provided written comments on the plan on May 30, 2013; the plan was then revised and re-submitted to USAID on June 11, 2013. It was approved by USAID on that same date. *As a result, this subtask was completed June 11, 2013.*

The Year 3 Work Plan was prepared and submitted to USAID on August 31, 2014. It was approved by USAID on September 18, 2014. *As a result, this subtask was completed September 18, 2014.*

#### **3.2.2 Task 1.2 Conduct Meetings with Regional WEs and USAID**

The WISE project team conducted more than 20 meetings between November 1, 2012, and March 1, 2013, to assess the infrastructure needs of the WEs and to collect information and discuss the viability, advantages, and disadvantages of various infrastructure projects for potential implementation. The USAID COR for the WISE project attended the initial meetings with the Directors General (DGs) of the WEs and the technical advisors to the Ministry of Energy and Water (MoEW). During the meetings, the WISE technical team completed a review of the strengths, weaknesses, challenges, and opportunities of the management teams for each WE to prepare a training and staff development plan. The training and preliminary staff development plan was prepared and included in the annual Work Plan, which was submitted and approved by USAID on June 11, 2013. This task consisted of two sub-tasks as follows:

- a. *Conduct meetings to assess the infrastructure needs of the WEs.* The Preliminary Analytical Assessment / Feasibility Report was prepared and formally submitted to USAID on March 19, 2013. Based on USAID's informal and formal written comments on the draft report on March 7, 2013, and April 10, 2013 respectively, the report was revised and re-submitted to USAID on April 23, 2013. The COR provided additional written comments on the revised report on April 29, 2013; the report was then further revised and re-submitted to USAID on April 30, 2013. It was approved by USAID on that same date. *As a result, this subtask was completed April 30, 2013.* Section 2.2.3 below provides more details regarding this report.
- b. *Conduct meetings to assess strengths, weaknesses, challenges, and opportunities in each WE.* The Strengths and Weaknesses Report was prepared and submitted in draft form to USAID on January 23, 2014. This report discusses the most critical issues facing the WEs. Based on the weaknesses identified, training and capacity building will be provided throughout the life of the project in selected areas to develop the skills of designated managers and other employees. The COR provided written comments on the report on February 21, 2014; the report was revised and re-submitted to USAID on April 15, 2014. It was approved by USAID on May 6, 2014. *As a result, this subtask was completed May 6, 2014.*

### **3.2.3 Task 1.3 Develop an Analytical Assessment/Feasibility Report**

Between November 2012 and March 2013, the WISE technical team performed a preliminary assessment of the infrastructure needs in each of the four WEs in Lebanon. The assessment methodology consisted of developing and testing selection criteria and ultimately short listing potential candidate projects by conducting site visits at the MoEW and the WEs. The team worked closely with each WE to identify their specific needs and to understand aspects of their operations. This work occurred in consultation with USAID and through engaging with the DGs of Exploitation and Tutelage and the Minister's advisors at MoEW. The selection criteria included financial, commercial, technical, environmental, sustainability, social and community needs, and urgency of the projects. Using these criteria, projects were short listed and the technical team conducted consultative visits with the DGs and technical staff of the WEs.

The Analytical Assessment/Feasibility Report was submitted in two parts for USAID review and approval. Part I was prepared and submitted to USAID on March 19, 2013; it was subsequently revised twice and re-submitted to USAID on April 23, 2013 and April 30, 2013 when it was finally accepted and approved by the COR. Part I of the report focused on the Analytical Assessment, which included details about the processes and methodology used to assess the options and opportunities and summaries of the consultations with the WEs and the MoEW. Part II of the report was prepared and submitted to USAID on February 3, 2014, and focused on the technical feasibility of three out of four of the selected infrastructure projects in

accordance with the criteria set forth in the Task Order which included: need, cost, cost/benefit analysis, impact, WEs' performance and visibility for USAID. The report also contains a Sustainability Benchmark Schedule for each WE, stating the major actions to be undertaken by the WEs during progress of each of the project options to ensure its sustainability. Part II of the report was partially approved by USAID on March 3, 2014, because it only contained three out of four of the required feasibility studies. The feasibility report was reviewed and sent to USAID in August 2015. This task consists of two sub-tasks:

- a. *Develop a Preliminary Analytical Assessment / Feasibility Report.* Part I of the Preliminary Analytical Assessment / Feasibility Report was prepared and submitted to USAID on March 19, 2013. USAID provided written comments on the draft report on March 7, 2013, and additional comments on the preliminary report on April 10, 2013. That report was revised and re-submitted to USAID on April 23, 2013. The COR provided additional written comments on the revised report on April 29, 2013; Part I of the report was then further revised and re-submitted to USAID on April 30, 2013. It was approved by USAID on that same date. *As a result, this subtask was completed April 30, 2013.*
- b. *Develop the Final Analytical Assessment / Feasibility Report.* Part II of the Preliminary Analytical Assessment / Feasibility Report was prepared and submitted to USAID on February 3, 2014. It was partially approved by USAID on March 3, 2014, because it only contained three out of four of the required feasibility studies. The addendum contained the final version of the fourth and last feasibility study for the three Kesserouan Villages customer metering project. *As a result, this subtask was considered partially completed on March 3, 2014.* The feasibility report was reviewed and sent to USAID in August 2015.

### **3.2.4 Task 1.4 Evaluate WEs' Performance to Measure their Progress towards Achieving Efficient and Sustainable Operations**

All four WEs have updated their Five-Year Business Plan (Years 2013 - 2017) to define their strategic objectives and action plans for performance improvement for the next five year planning period. These business plans will serve as a "road map" for guiding each WE's management. The WEs are transitioning to a more corporatized and commercial business model. This task consisted of two sub-tasks as follows:

- a. *Review specific financial and management targets of the WEs to measure progress towards achieving efficient and sustainable operations.* The WISE technical team reviewed the business plans and related Performance Improvement Action Plans (PIAP) of each of the WEs to understand their specific strategic objectives. The team also reviewed the adopted key performance indicators (KPI) under the Performance Monitoring and Benchmark Program (PMBP) reported annually to the MoEW. The WISE-Lebanon team then reviewed the performance indicators developed and used by USAID's LWSS program to monitor and measure the WEs' performance. The WISE-Lebanon project adopted some of the same indicators used by LWSS that also meet the WISE program objectives. The final performance indicators were defined in the performance Monitoring and Evaluation (M&E) plan (formerly PMP) report, which was submitted to USAID on March 28, 2013. *As a result, this subtask was completed March 28, 2013.*
- b. *Develop a PMP report to track the performance of the WEs using KPIs.* Performance indicators for WISE-Lebanon's M&E plan (formerly PMP) are closely aligned with the identified priority projects in each water establishment to be able to measure the progress made on each priority project. The technical team is primarily collecting data on projects

in targeted service areas directly implemented by WISE-Lebanon. The team focused on these targeted areas to ensure that results are within the team's ability to manage. The M&E plan includes eight output indicators (one of which is gender-sensitive) and nine outcome indicators. Output indicators measure tangible, immediate, and intended products or consequences of an activity. Outputs are lower-level steps that are not developmentally significant but are essential in achieving results. Outcome indicators measure conditions or occurrences that result from outputs. In differentiating output from outcome, outcomes are considered developmentally significant changes that answer the question "so what" after outputs. The PMP report was first prepared and submitted to USAID on March 28, 2013. Based on USAID's and Social Impact's (SI) informal and formal written comments on the draft report on April 17, 2013, and April 24, 2013 respectively, the report was revised and re-submitted to USAID on May 12, 2013. The COR and SI provided additional written comments on the revised report on May 14, 2013. The report was revised for the second time and was re-submitted to USAID on August 16, 2013. The COR and SI provided further written comments on the revised report on September 16, 2013. The report was revised for the third time and was re-submitted to USAID on October 5, 2013. It was also renamed the Monitoring and Evaluation Plan Report. It was approved by USAID on October 10, 2013. *As a result, this subtask was completed October 10, 2013.*

During the data quality assessment (DQA) discussions with SI, it became clear that we should propose one additional indicator to measure the training received by each participant in terms of training days. So we prepared the additional indicator and the supporting PIRS, revised the M&E report and resubmitted it to USAID for approval on September 12, 2014. The COR provided further written comments on the revised report on September 18, 2014. The report was revised for the fifth time and was re-submitted to USAID on September 22, 2014. It was approved by USAID on September 25, 2014. After receiving the DQA report in November 2014, we were asked by the COR to modify our M&E report in order to: 1) address the recommendations listed in the DQA report, and 2) reflect the addition of the "Host Communities Projects" to the Task Order SOW. The report was revised for the sixth time and was re-submitted to USAID on November 19, 2014. It was approved by USAID on November 25, 2014. The data collection and the tracking of the trends of these indicators are an on-going subtask, which will be updated every quarter during the life of the project.

### **3.2.5 Task 1.5 Develop Engineering Design and Technical Specifications for Projects Selected under Task 1.3**

This task consists of two sub-tasks as follows:

- a. *Develop engineering design and technical specifications in preparation for the tenders.* The technical team gathered technical specifications and standards for construction materials, construction techniques, and equipment from a variety of sources including: CDM Smith (under the LWSS project); best practice construction codes; CDR; other consulting firms in Lebanon; other international projects in the Gulf region; and other international projects outside the Middle East. These documents were reviewed, consolidated and refined to fit the Lebanon construction environment. These were finalized during the fourth quarter of Year 1. This work was performed by the WISE technical team and took about six weeks longer than anticipated to complete this work, because the A&E firm was not selected by USAID until late June 2013. It was necessary to have input on this subtask from the A&E firm. Once CDM Smith came on board, the WISE team sought their inputs and finalized the technical specifications and construction standards.

The CDM Smith team requested more time than originally planned by Chemonics to review and comment on the documents. This caused an additional delay, which significantly affected the tendering processes, initially scheduled to begin in early August 2013. The first tender for the Chehabiyeh Pump Station Rehabilitation project was not actually released until October 4, 2013. The second tender for the Haouch El Oumara Water Supply Network project was released on October 21, 2013. The third tender for the Deddeh Water Supply Network project was released on December 9, 2013. The fourth and last tender for the Customer Metering project in the three Kesserouan Villages (Raifoun, Qleyat, and Ajaltoun), was released on May 16, 2014. As a result, this subtask was partially completed on October 4, 2013; on October 21, 2013; on December 9, 2013; and on May 16, 2014. *This subtask was fully completed on May 16, 2014.*

- b. *Submit the final engineering design and technical specifications to the A&E firm for approval.* In September 2012, USAID issued a Request for Task Order Proposal (RFTOP) for the Water Infrastructure Support and Enhancement for Lebanon Architectural and Engineering Services (WISE-Lebanon/A&E) program. The WISE-Lebanon program is tasked to coordinate with the A&E firm selected in several areas, including this subtask. In early July 2013, USAID informed the WISE-Lebanon program that the A&E contract award was made by USAID to CDM Smith. After the engineering design and technical specifications were finalized, the WISE-Lebanon team submitted them to CDM Smith, the A&E firm, for review and approval. The WISE-Lebanon team first submitted these documents to the A&E firm for the Chehabiyeh Pump Station on September 5, 2013, for the Haouch El Oumara water supply network on September 24, 2013, for the Deddeh water supply network on November 1, 2013, and for the Customer Metering project in the Kesserouan Villages on April 7, 2014. As a result, this subtask was partially completed on September 5, 2013; on September 24, 2013; on November 1, 2013; and on April 7, 2014. *This subtask was fully completed on April 7, 2014.*

### **3.2.6 Task 1.6 Develop a Construction Quality Assurance/Quality Control (QA/QC) Plan and a Safety Management Plan**

A typical QA/QC plan contains the following items: a description of the QA/QC activities performed, the people responsible for these activities, the schedule for completing these activities, and the reporting protocols to be used. A typical safety management plan includes general measures of safety at the work site, preparation of workers prior to commencement of work, personal protective equipment, frequent use of communication devices at the work site and very specific safety precautions around equipment and in the trenches. This task consists of three sub-tasks as follows:

- a. *Develop a construction QA/QC plan.* Upon agreement with CDM Smith, the QA/QC plan was replaced by a Supervision Quality Plan (SQP) that explains the methodology that will be followed by WISE-Lebanon for the supervision of each of its construction projects. WISE-Lebanon's technical team prepared SQPs for the construction projects executed under the WISE program and submitted them to CDM Smith for review and approval. After revising the SQPs based on CDM's comments, final versions of those documents were approved by CDM as follows: for the Chehabiyeh Pump Station on April 25, 2014; for the Haouch El Oumara water supply network on May 7, 2014; and for the Deddeh water supply network on May 7, 2014. The SQP for the Kesserouan project has been prepared and was forwarded to CDM Smith for review and approval on January 29, 2015. It was just approved on April 9, 2015. *As a result, this subtask was three-fourths completed on May 7, 2014 and fully completed on April 9, 2015.*

- b. *Develop a Safety Management Plan.* Safety management guidelines were prepared for each of the construction projects as part of the tender documents to guide the subcontractors during developing their safety management plans and throughout the implementation of the projects. Those safety management guidelines were approved by CDM Smith since they were included as part of the tender documents for each of the construction projects. The safety management plans actually submitted by the construction subcontractors were reviewed and approved by the WISE-Lebanon technical team during the submittals process, as follows: for the Chehabiyeh Pump Station on March 31, 2014; for the Haouch El Oumara water supply network on July 6, 2014; for the Deddeh water supply network on July 14, 2014; and for the Kesserouan villages metering project on December 17, 2014. *As a result, this subtask was completed December 17, 2014.*
- c. *Submit the final engineering design and technical specifications to the A&E firm for approval.* The WISE program began coordinating with CDM Smith, the selected A&E firm in several areas, including this sub-task, in August 2013. After the engineering design, technical specifications, and BoQs were finalized, the WISE team submitted them to the A&E firm for review and approval. The WISE-Lebanon team submitted the final revised documents to the A&E firm for the Chehabiyeh Pump Station on October 4, 2013, for the Haouch El Oumara water supply network on October 21, 2013, for the Deddeh water supply network on December 9, 2013, and for the Customer Metering project in the Kesserouan Villages on May 2, 2014. *As a result, this subtask was partially completed on September 5, 2013; on September 24, 2013; on November 1, 2013; and on May 2, 2014. This subtask was fully completed on May 2, 2014.*

### **3.2.7 Task 1.7 Conduct Environmental Assessments on Projects Selected under Task 1.3**

Most of the proposed infrastructure projects required an Environmental Review with approval from USAID before the project was allowed to move forward for tendering. An *Environmental Review Assessment Checklist (ERAC)* was used to determine whether the proposed course of action (scope of work) of sub-projects and activities had the potential to cause an environmental impact or concern, and if so to determine the scope and extent of additional environmental evaluation, mitigation, and monitoring necessary to fulfill federal U.S. environmental requirements. The ERAC is intended to be used in conjunction with the Leopold Matrix to ensure that environmental consequences were taken into account by USAID and the host country, and to clarify the threshold decision for specific activities based on information that was available at the time the Initial Environmental Examination (IEE) was approved. This task consists of two sub-tasks as follows:

- a. *Prepare an Environmental Review (ER) for each proposed infrastructure project.* This work was started in the third quarter and was performed by ELARD, a subcontractor to Chemonics. First, ELARD prepared four screening applications, along with the supporting documentation, and submitted them to the Ministry of Environment (MoE) in accordance with Decree 8633, for an initial determination as to whether an IEE or an EIA would be required. The first three screening applications were submitted to the MoE on June 12, 2013. The MoE rendered a Decision on June 13, 2013, which stated, “The first 2 projects in Deddeh and Zahleh (constructing water supply networks) require performing an IEE study. As for the third project, the rehabilitation of an existing water pumping station will require no official environmental studies to be submitted to the Ministry if the Environment as per the requirements of the EIA Decree. You can prepare an environmental management plan for them and share it with us on an information level if you wish to do so.” For the

fourth project (Customer Metering Project), ELARD sent the screening application, along with the supporting documentation, to the MoE on October 18, 2013. The MoE rendered a Decision on October 21, 2013, which stated, “The project you described below, and after reading all its related documents, requires no studies to be done prior to its implementation. No EIA or IEE required.” *As a result, this subtask was completed on October 21, 2013.*

Second, ELARD prepared and submitted the two IEE reports mentioned above to the Ministry of Environment for review, on August 5, 2013. The Ministry approved both reports on September 5, 2013 with only minor conditions, requiring monitoring and reporting during construction. *As a result, this subtask was completed on September 5, 2013.*

Third, ELARD prepared the first three environmental review (ER) reports for submittal to and approval by USAID. These ER reports were finalized and submitted to USAID on August 7, 2013. The USAID COR and Mission Environmental Office provided written comments on the three reports on August 16, 2013. The A&E firm also provided their written comments on the three reports on August 27, 2013 and August 28, 2013. ELARD then prepared revised ER reports on September 26, 2013, which incorporated all of USAID and A&E firm comments. The revised ER reports were resubmitted to USAID on October 6, 2013 and October 7, 2013. USAID provided its initial written comments and final written comments on the A&E firm’s comments on October 25, 2013, and January 9, 2014, respectively. These comments were incorporated into the final ER reports and those reports were finalized; they were resubmitted to USAID for final approval on September 15, 2014 and they were approved by USAID on September 18, 2014. *As a result, this subtask was completed on September 18, 2014.*

ELARD prepared the fourth environmental review (ER) report for submittal to and approval by USAID. This ER report was finalized and submitted to USAID on April 7, 2014. The USAID COR and Mission Environmental Office provided written comments on the three reports on April 17, 2014. The A&E firm also provided their written comments on this report on April 23, 2014. ELARD then prepared and revised this ER report on April 24, 2014, which incorporated all of USAID and A&E firm comments and this report was finalized. It was resubmitted to USAID for final approval on September 15, 2014 and it was approved by USAID on September 18, 2014. *As a result, this subtask was completed on September 18, 2014.*

For the host communities’ quick impact projects, ELARD prepared four screening applications, along with the supporting documentation, and submitted them to the Ministry of Environment (MoE) in accordance with Decree 8633, for an initial determination as to whether an IEE or an EIA would be required. All four screening applications were submitted to the MoE on October 14, 2014. The MoE rendered a Decision on November 28, 2013, which stated, “Kindly be informed that Project No. 4 (Rehabilitation of Ayoun El Samak Spring catchment and Renovation of Ayoun El Samak Pump Station, North Lebanon) requires an IEE Study. As for the 3 others, no study is needed.” *As a result, this subtask for the host communities’ projects was completed on November 28, 2014.*

- b. *Develop Environmental Mitigation and Monitoring Plans (EMMP) for each infrastructure project.* As expected, the Environmental Reviews identified potential pollution concerns requiring appropriate mitigation and monitoring. As a result, EMMPs had to be developed. This work was performed by ELARD and was included in the ER reports mentioned above. *As a result, this subtask was completed on September 18, 2014.*

### **3.2.8 Task 1.8 Initiate Prequalification Process in Coordination with A&E Firm**

Chemonics has been contracted by USAID to execute and manage the implementation of each of the proposed infrastructure projects. Project implementation includes providing engineering design, construction, procurement, construction supervision/management services for the selected water infrastructure projects, and O&M supervision with training. In anticipation of USAID approving the selection of specific projects for each WE, and in accordance with the initial work plan, the WISE-Lebanon team completed the process of prequalifying construction contractors in order to expedite the tender process for the four specific projects. The purpose of the prequalification process was to identify potential local and American construction subcontractors which have a presence in Lebanon and may be qualified to execute projects of similar size and complexity as the candidate projects submitted to USAID.

This deliverable was submitted in two parts for USAID review and approval. Part I was prepared and submitted to USAID on March 28, 2013. It focused on the procedural process that the WISE-Lebanon project used to prequalify contractors. The evaluation process was completed in June 2013 and the final prequalification report required by the Task Order (Part II) was prepared and submitted to USAID on August 14, 2013. This task consists of three sub-tasks as follows:

- a. *Develop a prequalification process and a qualifications questionnaire and coordinate resulting activities with the A&E firm.* The WISE technical team developed a prequalification process and a qualification questionnaire. In line with what is noted in 2.2.6 (c) above, this activity was completed on March 20, 2013. There was no coordination with the A&E firm, since that firm was not selected by USAID until late in the third quarter of the program. *As a result, this subtask was completed on March 20, 2013.*
- b. *Prepare an Interim Prequalification Findings Report.* The Interim Prequalification Findings Report was prepared and submitted to USAID on March 28, 2013. It was approved by USAID on that same day. *As a result, this subtask was completed on March 28, 2013.*
- c. *Prepare a Final Prequalification Findings Report.* The Final Prequalification Findings Report was prepared and submitted to USAID on August 14, 2013. That report included a description of the actual prequalification that took place, the actual findings, and the final list of prequalified contractors. *As a result, this subtask was completed on August 14, 2013.*

### **3.2.9 Task 1.9 Prepare Construction Bidding Documents for Tendering**

This task consists of two sub-tasks as follows:

- a. *Prepare construction bidding documents, including technical specifications in preparation for the tenders.* The technical team collected technical specifications and sample tender documents from a variety of sources including: CDM Smith (under the LWSS project); CDR; the Construction Standards Institute (CSI) in the United States; other consulting firms in Lebanon; other international projects in the Persian Gulf region; and other international projects outside the Middle East. These documents were reviewed, consolidated and refined to fit the Lebanon construction environment. The final consolidated document was finalized during the fourth quarter of the WISE-Lebanon program. This document was originally planned to be submitted to USAID during the third quarter but it took longer to perform the work than originally anticipated. The WISE-Lebanon team first submitted these documents to the A&E firm for the Chehabiyeh Pump Station on September 5, 2013, for the Haouch El Oumara water supply network on

September 24, 2013, and for the Deddeh water supply network on November 1, 2013. The engineering design and technical specifications documents for the Customer Metering project in the Kesserouan Villages was submitted to CDM Smith on April 7, 2014. The lateness of this document caused a slight delay in the commencement of the tendering processes. As a result, this subtask was partially completed on September 5, 2013; on September 24, 2013; on November 1, 2013; and on April 7, 2014. *This subtask was fully completed on April 7, 2014.*

- b. *Submit the final construction bidding documents to the A&E firm for review and approval.* In line with 2.2.6, WISE project is prepared to coordinate with CDM Smith, the A&E firm selected by USAID, in several areas, including this subtask. The final construction bidding documents for the first three projects were submitted to the A&E firm in phases throughout the months of September and November 2013. Based on comments received from the A&E firm, the bidding documents were revised. As a result, this subtask was partially completed on October 4, 2013, for the Chehabiyeh Pump Station Rehabilitation project; on October 21, 2013, for the Haouch El Oumara Water Supply Network project; and on December 9, 2013, for the Deddeh Water Supply Network project. The final construction bidding documents for the Kesserouan Villages Customer Metering project were submitted to CDM Smith on May 2, 2013. *This subtask was fully completed on May 2, 2014.*

### **3.2.10 Task 2.1 Select and Subcontract with Local Engineering and Construction Firms for Project Implementation**

Following the completion of the prequalification process and the preparation of construction bidding documents, the WISE-Lebanon project proceeded with the bidding process for the selection of the design and/or construction subcontractors to execute the specific projects selected by USAID/Lebanon. This task consists of two sub-tasks as follows:

- a. *Prepare the Invitations to Tender and issue up to four tenders.* This process included preparing the instructions to bidders and compiling the construction bidding documents (including technical specifications, Bills of Quantities (BoQ), engineering design report and design drawings); issuing the tenders; receiving and opening bids; technical analysis/review and financial review of bidders proposals (bid evaluations); and selection/award of winning firm. This work commenced in the first quarter of Year 2 and was fully completed in the fourth quarter of Year 2. The tendering and evaluation processes have been completed for all four tenders. As a result, this subtask was partially completed on October 21, 2013 for the first two tenders; on December 9, 2013 for the third tender; and on September 18, 2014 for the fourth tender. *This subtask was fully completed on September 18, 2014.*
- b. *Coordinate with the A&E firm and seek their technical input to the tendering process.* After the tendering process was finalized, but before the tenders were issued, the WISE team coordinated with the A&E firm for its concurrence and validation. This work commenced in the first quarter of Year 2 and was fully completed in the third quarter of Year 2. This process has been completed for all four tenders. As a result, this subtask was partially completed on December 9, 2013 for the first three tenders and fully completed on May 16, 2014 for the fourth tender. *This subtask was fully completed on May 16, 2014.*

### 3.2.11 Task 2.2 Manage Design and Construction Process

There are many subtasks that support this task. The three most crucial are listed below.

- a. *Prepare the subcontracts for the engineering firms and the construction contractors.* ELARD and KREDO are the primary environment and engineering partners, respectively, to Chemonics for WISE-Lebanon. KREDO will be performing all the design related work on the infrastructure projects and ELARD will be performing all the environmental related work on the infrastructure projects. The statements of work and the subcontracts for both of these firms were prepared by the Chemonics home office, with direct input from the WISE technical team; after several revisions, they were submitted in final form to USAID for approval on June 25, 2013 and July 5, 2013, respectively. USAID approved the subcontracts for ELARD and KREDO on July 29, 2013 and August 1, 2013, respectively. A similar process was used for preparing and seeking USAID approval of the subcontracts for the construction contractors, after they were selected in Task 2.1. USAID approved the subcontracts for Construction Services Company, Parallel Contracting Company, Zakhem Engineers, and Estephan Company on January 29, 2014, February 11, 2014, March 3, 2014, and September 17, 2014, respectively. *This subtask was fully completed on September 17, 2014.*
- b. *Supervise/monitor the work performed by the engineering firms and the construction contractors.* The extent and character of the work to be performed by the engineering firms and the construction contractors are subject to the general oversight, supervision, direction, control, and approval of authorized WISE-Lebanon personnel. For the construction sites, the construction contractors are required to have a competent Site Supervisor on-site who is approved and accepted by the WISE-Lebanon Construction Management Specialist and the A&E firm. The Site Supervisor has the authority to act on behalf of the contractor. In addition, Chemonics hired a full time site supervisor for each infrastructure project to represent WISE-Lebanon on the work site, after conducting a competitive recruit to select such supervisors.

During the fourth quarter of Year 1 of the WISE program, Chemonics advertised and interviewed qualified candidates for construction site supervisors. Having received all the necessary USAID approvals, this hiring process was completed during the second quarter of Year 2 in time for the commencement of construction. The first construction site supervisor, for the Haouch El Oumara Water Supply Network project, was approved by USAID on December 19, 2013. The second construction site supervisor, for the Deddeh Water Supply Network project, was approved by USAID on February 17, 2014. The third construction site supervisor, for the Kesserouan Villages Customer Metering Project, was approved by USAID on February 28, 2014. The fourth and final construction site supervisor, for the Chehabiyeh Pump Station Rehabilitation Project, was approved by USAID on March 9, 2014. *The construction management and supervision tasks are ongoing until the end of the WISE-Lebanon program.*

- c. *Payment of subcontractor costs.* Chemonics is making interim progress payments to the engineering firms and to the construction contractors at the prices agreed to by the respective parties and as stated in their respective subcontracts. The engineering firms submit invoices monthly along with deliverables. Once the quantities and quality of the deliverables are approved and accepted by the WISE team technical representatives, the invoices are sent to CDM (USAID's A/E appointed for WISE) for review as per USAID/Lebanon directions. CDM then reviews the interim partial payments and provides recommendation back to WISE regarding their opinion of the level of substantiation and documentation of the IPCs. Upon receiving the IPC review comments from CDM the

construction contractors are paid the full approved invoiced amount less any withholdings (retentions, disputed or unsubstantiated costs, or liquidated damages) as set forth in their respective subcontracts. In general, the review process by CDM adds two to four weeks to the invoicing payment process. Payments of unpaid balances are made upon completion and final acceptance of the complete construction work by the WISE-Lebanon technical team. Payments to the construction contractors are based in part on the percentage of completed work and adequate documentation and substantiation of costs claimed. *This subtask is ongoing until the end of the WISE-Lebanon program.*

### **3.2.12 Task 2.3 Monitor the Sustainability Benchmark Compliance**

The Memoranda of Understanding (MOU) entered into between USAID and the partnering WEs set forth the WEs' responsibilities and contributions and include benchmarks for implementation, terminal dates for completion of benchmarks, and the benchmark verification elements which are defined as documentation and reporting requirements that must be achieved by the WEs prior to USAID's disbursement of construction funds. The sustainability benchmark schedules and their current status are shown in Annex 5. This task consists of two sub-tasks as follows:

- a. *Collect data to track indicators agreed to in the M&E (formerly PMP) plan report, and included in the benchmark sustainability schedule contained in the Final Analytical Assessment/Feasibility Report, mentioned in Tasks 1.3 and 1.4.* It is important to gather sufficient information to develop a baseline and set manageable targets. After selecting the program's performance indicators, the WISE technical team is gathering existing and derived data from available sources to serve as a baseline for what the program is monitoring throughout the life of the project. WISE-Lebanon's performance monitoring approach strikes a balance between data collection and technical work so that data collection responsibilities for staff are integrated into project activities. The technical team is collecting data using document review, interviews, direct observation during field visits, and customer surveys. The WISE-Lebanon program successfully facilitated an official MOU executed between USAID and each WE, which outlined the data that the WE is required to share with WISE-Lebanon as part of the collaboration effort. For every field visit that involves collecting or verifying data, the technical team is completing a field visit log identifying items, at a minimum, relevant indicators, types of data collected/received, data sources, observations, and a date/time stamp. The WISE-Lebanon Procurement Specialist is facilitating the maintenance of field visit logs. This work began in the second quarter of Year 2, since the revised M&E plan report (formerly PMP report) was approved by USAID on October 10, 2013. The MOUs were signed on July 11, 2014. *This subtask is ongoing until the end of the WISE-Lebanon program, in December 2015.*
- b. *Make recommendations to USAID regarding the WEs' compliance with the MOUs (formerly LOCs) and the sustainability benchmark schedules.* The WISE-Lebanon team has established a system for verifying accuracy, integrity, and validity of data using three levels of quality control as data is received. The first level is review from the WISE-Lebanon team as they are best positioned to provide initial quality control for the various data elements given their technical background and familiarity with interpreting data. After review by the technical team, the data will be given to the WISE-Lebanon Procurement Specialist as a second level of quality control, who will conduct random spot checks for calculation errors, confirm out-of-range numbers, and so forth. Before the data is submitted to USAID via quarterly reports, the third and last level of quality control will be the WISE-Lebanon COP and Chemonics home office project management unit (PMU). When possible during field site visits, technical staff will conduct random spot checks on data

reported by the WEs through direct observation and interviews. Because the program’s approach strikes a balance between M&E and technical work, verifying data in this way will not present additional burdens on program resources. WISE-Lebanon will make recommendations to USAID as appropriate to ensure the WEs’ compliance with the MOUs and the sustainability benchmark schedules. *This work began in the second quarter of Year 2 and will continue as needed in subsequent quarters.*

### **3.2.13 Task 2.4 Procure, Ship, Install, and Commission Specific Technical Equipment Related to Specific Needs of Infrastructure Projects**

There are many subtasks that support this task. The three most crucial are listed below:

- a. *Procure, ship, install, and commission specific technical equipment.* USAID’s statutory procurement authority is Section 604(a) of the FAA, which authorizes procurement “from the United States, recipient country, or developing countries.” Tracking that statutory authority, the Regulation establishes a presumptive USAID Principal Geographic Code, Code 937, for all USAID federally financed procurement of commodities and services under implementation instruments, unless otherwise specified. The procurement rules are enforced under ADS Chapter 310. Since the WISE-Lebanon project is designated Code 937, all construction contractors and other vendors will be required to certify the source, origin, and components of goods and commodities in compliance with ADS 310. Chemonics procured the first shipment of commodities from the American Water Works Association in the United States in October and November 2013. These commodities consisted of technical manuals, textbooks and DVDs, covering various topics including Emergency Preparedness, Drought Preparedness, Water Audits, Leak Detection Best Practices, Controlling Water Losses, Customer Metering, O&M of Distribution Networks, and Consumption-Based Metered Tariffs. These commodities are all related to capacity building under CLIN 3 and other specialized purchases will continue as needed in subsequent quarters. The construction subcontractors have also started procuring equipment and materials, through local suppliers and distributors of manufacturers, in accordance with the rules under ADS Chapter 310. The construction related items are being procured under CLIN 2.

For the host community quick impact projects, WISE-Lebanon has completed the tendering, evaluation, and awarding of contracts processes during the ninth quarter for the procurement of two fuel tanker trucks for BMLWE and for O&M tools and equipment for BWE. All of the equipment was delivered to the respective water establishments during the tenth quarter of the WISE-Lebanon program, except the two fuel tanker trucks. The first fuel tanker truck for BMLWE was transferred in August 2015. The second fuel tanker is in Lebanon, awaiting the installation of the fuel tank on the truck chassis and the expected transfer date is mid-November.



*Fuel tanker truck handing over-BMLWE*

- b. *Assess the relevant WEs’ needs for procuring specialized water monitoring and leak detection equipment along with ancillary computer hardware and software.* The WISE-Lebanon team assessed the needs of the WEs for the equipment mentioned and other

equipment that is needed to help them improve their performance in maintaining and operating the water supply networks. This work was completed during the fourth quarter of Year 2. The BWE expressed its preference for WISE-Lebanon to buy them specific O&M tools and equipment, instead of water monitoring and leak detection equipment. The BMLWE also expressed its preference for WISE-Lebanon to buy them two diesel fuel tanker trucks, instead of water monitoring and leak detection equipment.

All of the WEs previously received water monitoring and leak detection equipment, which were procured under the GIZ water sector reform program. This equipment is still functional and is used periodically by each water establishment. *As a result, this subtask was completed on October 15, 2014.*

- c. *Provide necessary training of selected WEs' personnel on any procured equipment*
- WISE-Lebanon is insisting that the manufacturer of any specialized equipment procured under the project, will provide a reasonable amount of on-site training as part of the procurement contract. This work began in the first quarter of Year 2 and technical specifications were included in all four tenders regarding the responsibilities of the equipment suppliers; it will continue as needed in subsequent quarters. The only remaining training on procured equipment for the 13<sup>th</sup> quarter will be for the new fuel trucks o/a mid-November, 2015. WISE has initiated trainings on the meter reading devices and portable barcode printers to staff respectively at BWE, NLWE, and BMLWE throughout the 4<sup>th</sup> quarter of 2015. .



*Training session on O&M equipment - BWE.*

### **3.2.14 Task 3.1 Organize Training Sessions and Study Tours (as needed)**

The topics that USAID believes have the greatest potential to improve and build the regional WEs' capacity are: planning and budgeting for water investments, effectively managing public investment through the project cycle, and capital investment sustainability. Capacity building shall be specifically focused on (or related to) the implemented projects, and be complimentary to similar activities under the USAID/Lebanon LWSS program. This task consists of two sub-tasks as follows:

- a. *Organize training sessions, workshops, and study tours.* WISE-Lebanon will conduct several workshops where international and regional experts will lead discussions on the selected topics mentioned above as well as other management issues. The workshops will be held periodically throughout the life of the project. This subtask will be an ongoing effort. The first workshop was held on November 12, 2013 and covered the topic of emergency preparedness planning, to help WEs cope with the increased water demands caused by the Syrian refugee influx.

Several other training sessions have been provided by Chemonics and its subcontractor, ELARD, since the first workshop under the WISE-Lebanon program held on November 12, 2013. A summary table showing all the training sessions held is contained in Section 3 of this quarterly report.

- b. *Coordinate capacity building efforts with the LWWSS program.* WISE-Lebanon has coordinated the planning and delivery of training sessions with the LWWSS program to build upon any capacity building sessions that they might have delivered. This work began in the third quarter of Year 2 and this sub-task was completed in July 2015 during the fourth quarter.

### **3.2.15 Task 3.2 Provide Targeted On-the-Job Training**

This task consists of two sub-tasks as follows:

- a. *Perform training needs assessments associated with the targeted investments.* The WISE-Lebanon team will perform a small training needs assessment and gap analysis with respect to topics related to the implementation of the WISE-Lebanon task order. Such topics may include prioritizing capital improvements, preparing and evaluating tenders, water demand management, billings and revenues collections, etc. WISE-Lebanon, through ELARD, conducted the training needs assessments in May and June 2014 using structured questionnaires for the NLWE, BWE, and SLWE. BMLWE did not express interest in receiving such specialized training. The results of the needs assessments revealed that the water establishments were eager to receive training in the following areas: operation and maintenance of wastewater treatment plants; integrated water resources management; management of groundwater resources; and implementation of environmental mitigation and monitoring plans. *As a result, this subtask was completed on August 18, 2014.*
- b. *Conduct on the job training in targeted areas based on needs assessment.* WE staff training modules will be directly linked to the WISE-Lebanon investments in water loss reductions (part of water demand management), benchmarking and performance indicator measurement, cost recovery, and improved collections. Schedules for delivery of associated training are included in the investment implementation portion of the work plan. Staff from each WE have been designated by their respective DGs to work on the construction sites along with the WISE-Lebanon site supervisors in order to gain knowledge and experience in inspecting work and managing construction. One example of on-the-job training which has already been delivered to BWE, NLWE, and SLWE is the Priority Project Selection Matrix tool which the WISE-Lebanon team developed in coordination with the respective WEs. After developing the matrix, the WISE-Lebanon team taught each of the three DGs how to use the tool in order to prioritize and rank their proposed capital investment projects. The selection criteria and weighting of factors was emphasized to help them make more informed decisions going forward.

### **3.2.16 Task 3.3 Develop O&M Manuals and Provide O&M Supervision**

Water treatment plants and distribution networks are constructed to operate 24 hours a day every day of the year, and equipment can wear out if not maintained properly. When equipment breaks down, it disrupts what should be continuous treatment and delivery processes. Preventive and predictive maintenance programs reduce breakdowns and identify problems in advance so they can be handled during a planned, controlled shutdown. World class utilities often use a computerized maintenance management system (CMMS) due to the large amount of equipment and the frequency of preventative maintenance necessary to keep the water system operating effectively. The WISE-Lebanon program is developing O&M manuals tailored to each infrastructure project. This task consists of two sub-tasks as follows:

- a. *Develop O&M Manuals.* The technical team has collected sample O&M specifications for water supply networks from a variety of sources including: United States water utility programs; other international projects in the Gulf region; and other international projects outside the Middle East. These documents were reviewed, consolidated and refined to fit the Lebanon operational environment. They were finalized during the second year of the WISE project. One example of these efforts was the adoption of the Standard Operating Procedures (SOPs) and guidelines developed earlier for each of the Water Establishments (WE) technical departments; which were originally developed by Chemonics Egypt in 2010, under GIZ funded technical assistance. These SOPs integrate internationally adopted standard practices for capital repair and replacement of various infrastructure components. They include a tailored step by step process, supported through visual aids and simplified descriptions, to be strictly followed and implemented by the WEs during installation, repair and maintenance of selected water infrastructure components including: networks (all types of pipes – HDPE, GRP, DI, AC, etc.) service connections, meters, pipe handling, laying and welding, trenching, bedding, pressure testing and related safety measures. These documents are now available as a reference at each construction site office, for easy access and use for on-the-job trainings implemented by the WISE-Lebanon technical team and supervisors to raise the technical capacity of the subcontractors and the WEs' appointed engineers, who are working side-by-side with the supervisors.
  
- b. *Provide O&M supervision on completed infrastructure projects.* The technical team is assisting the WEs in developing and implementing O&M plans for the completed infrastructure projects as they are currently being placed into service. WISE-Lebanon is coordinating the O&M functions and assisting the WE staff members in performing these activities.



*Completed roof of Ablah reservoir*

*Handing over of Terbol pumps*

### **3.2.17 Special Rapid Assessment**

To address the effects of the Syrian crisis on Lebanese host communities and specifically on the water and sewer service providers (WES) in Lebanon, USAID requested Chemonics' WISE-Lebanon team to perform a rapid assessment of the communities served by the WEs that are directly affected by the Syrian refugee influx. The purpose of this assessment is to identify, develop, recommend, and potentially implement integrated interventions to raise the capacity of the WEs to cope with recurring emergencies resulting from the volatile regional situation. The team of consultants proposed by Chemonics, under the direction of the WISE-Lebanon COP, undertook the assessment between September 15, 2013 and November 15, 2013, which achieved the following objectives:

1. Provided USAID/Lebanon with a final report, based on the assessment, which contained sufficient detail for USAID to develop an emergency response strategy and action plan focused on enhancing and building emergency planning and preparedness capacities of the WEs to cope with this crisis and future crises. This report was submitted to USAID on December 2, 2013 and was approved by USAID on January 9, 2014.
2. Recommended options for effective interventions identified in coordination with key stakeholders including, but not limited to the WEs, affected municipalities, other USAID programs, the EU, UN agencies, international and local NGOs, and the World Bank. The team focused on integrated quick implementation projects with outcomes that would mitigate the effects of the influx of large numbers of Syrian refugees on Lebanese host communities, whilst keeping the identified activities and interventions within the overall strategy of emergency preparedness and planning. Those activities will secure and maintain

medium to long term benefits to the WEs, preserve basic levels of sustainability, and assign ownership and maintenance responsibilities for any assets installed or constructed.

3. Proposed methodologies and tools for technical assistance and capacity building in conjunction with the integrated quick implementation projects.
4. Sponsored a workshop for the WEs and other key stakeholders to report on the results of the rapid assessment assignment and introduced the concepts of emergency preparedness planning. This workshop was held on November 12, 2013.

### **3.3 Status Report on Construction Projects**

This section provides a summary status report of the Chehabiyeh, Haouch El Oumara, Deddeh, and Kesserouan infrastructure projects as of the end of the fourth quarter, Year 3. Please reference Annex 4 for a more detailed breakdown of mobilization, design and feasibility reviews, procurements, and progress to date organized according to percentage completed and anticipated time of delivery. Please note, these tables are updated and submitted to CDM Smith every two weeks and a comprehensive update is submitted to USAID in each quarterly report.

#### **3.3.1 Status Report: Chehabiyeh Pump Station Rehabilitation Project, SLWE**

The subcontractor Construction Services Company (CSC) has completed major construction works at the Chehabiyeh Pump Station. All of the civil, mechanical, and electrical works have been completed. All of the pumps and motor control center units have been tested and fully commissioned. The pump station is currently in full operation under the direction of the South Lebanon Water Establishment pump station operators and the defect liability period has taken effect as of mid- January 2015. The Variation Orders documentation is being processed and appropriately filed. All remaining snag list items have been addressed and as per several variation orders, the installation of one flow meter, installation of four air release valves, backfilling of the air lock siphon and the installation of a new circuit breaker has been recently completed. Upon the SLWE management's request, the pump operation sequencing restructuring has been adjusted in order to meet the growing demands of Chehabiyeh and Kafra service areas. Substantial completion for the project has been completed. The Demobilization and closeout procedures have been completed. All variation orders will be submitted by October 2015 to USAID for CO approval.



*The CPS in full operation*

#### **3.3.2 Status Report: Haouch El Oumara Water Supply Network Project, BWE**

All aspects of execution of the works on the network are fully underway. 100% of all required shop drawings, 100% of all required method statements, and 100% of all required materials have been approved by the WISE-Lebanon technical team. 45,500 meters of combined ductile iron and high density polyethylene pipe have been fully installed and hydraulically tested to date in all six zones of the project. This is 100% of the total planned meters of pipe. The installation process of the 4,859 customer water meters procured as per the tender BOQ in March 2015, was initiated during the 3rd week of



*Asphalt pavement works*

June 2015. The forecasted number of customer meters to be installed for existing customers and new subscribers is only 1200 meters; the additional meters will be handed over to BWE to be installed for future new subscribers. The sub-contractor installed and consolidated 423 customer meters by end of September 2015. The three district water meters for the network have also been delivered in March 2015 and one was installed and became operational in June 2015 and the second and third in July 2015. All six zones have been flushed, decontaminated, and technically commissioned, therefore the network is now considered operational. The next step includes the transfer of the HEO project to Chemonics by the sub-contractor followed by the commissioning of the project by BWE after the 31<sup>st</sup> of October 2015.

### **3.3.3 Status Report: Deddeh Water Supply Network Project, NLWE**

All aspects of execution of the work on the network are fully underway. 100% of all required shop drawings, 100% of all required method statements, and 100% of all required materials, have been approved by the WISE-Lebanon technical team.



*Completed Deddeh Reservoir*

44,900 meters of combined ductile iron and high density polyethylene pipe have been fully installed and hydraulically tested to date in all four zones of the project. This is 100% of the total planned meters of pipe. 2,215 customer water meters and the three district water meters were ordered and delivered to site in June 2015. The five district meters were installed in August 2015, the dials/ converters will be installed in October 2015. Upon the initial request of NLWE head of exploitation, 1500 customer meters were installed in 777 boxes. Notably, this number exceeded the 400 existing customers and the additional 1100 meters are provisional for future subscribers. The remaining

meters that were not installed will be handed over to the NLWE by the end of October 2015. All four zones along with the reservoir have been flushed, decontaminated, and technically commissioned, therefore the network is now considered operational. The next steps include the transfer of the DWS project to Chemonics by the sub-contractor followed by the commissioning of the project by BLWE after the 31<sup>st</sup> of October 2015.

### 3.3.4 Status Report: Kesserouan Villages Metering Project, BMLWE

The Kesserouan Villages metering project mobilized during the ninth quarter of the WISE-Lebanon program. 100% of Rayfoun, Qleiat and Ajaltoun shop drawings have been completed. 100% of all required method statements and 100% of all required materials have been approved by the WISE-Lebanon technical team. The 333 protection boxes and the related 678 customer water meters and associated fittings have been installed in Rayfoun service area out of a forecasted total need of 344 boxes and 713 meters. Ajaltoun customer metering has been initiated on June 11<sup>th</sup> 2015. The 765 protection boxes and related 2380 customer water meters and associated fittings have been installed out of



*Customer meter reading*

a forecasted total need of 1324 protection boxes and 2451 meters. Qleiat customer metering has been initiated on March 30<sup>th</sup>, 2015. The 593 protection boxes and related 1633 customer water meters and associated fittings have been installed out of a forecasted total need of 619 protection boxes and 1636 meters. Also, the planned installation of district meters was de-scoped mainly due to time constraints, along with provisional sums of network extensions that were included as contingencies in the original scope. The district meters that were initially identified during the design phase were to be located at the level of the supply mains feeding the subject villages. Upon further investigation on March 5, 2015 during the project implementation phase the WISE-team and the subcontractor identified that these mains already had district meters installed and that the BMLWE has been and is currently reading regularly to monitor the supply. As such, the WISE-Team investigated potential installation of these district meters in other service areas that have had customer meters installed in previous years, and accordingly identified similar cases. As such, and based on a thorough assessment of the available options and potential monetary and time implications, along with the identification that there would not be any negative impacts on the operational sustainability of the KVM project, the WISE-Team halted the introduction of additional district meters to avoid redundancy.

Nevertheless, this will not affect the technical and operational integrity of the project as all other key components, mainly customer meter installation, data consolidation, and customer meter reading tools and barcoding, are being comprehensively addressed.

## 4. PERFORMANCE MONITORING AND EVALUATION

The sixth revision of the performance monitoring and evaluation (M&E) plan was approved by USAID on November 25, 2014. Performance indicators for WISE-Lebanon's M&E Plan closely reflect identified priority projects in each water establishment. This M&E Plan includes eight output indicators (one of which is gender-sensitive) and nine outcome indicators. Two of the indicators are Mission M&E indicators. Output indicators measure tangible, immediate, and intended products or consequences of an activity. The technical team gathered existing and derived data from available sources to serve as a baseline for what the program will monitor throughout the life of the project. Please note, indicators W4a, W4b, and W5 listed below will be more thoroughly addressed in the final completion report (13th Quarterly report). For any indicators that cannot be fully measured at the time of WISE's completion, those items will be

reported as “in progress” with a detailed explanation in the Performance Monitoring & Evaluation Plan Indicator Annex of the report.

The key performance indicators table in Annex 3B updates M&E indicators as of this quarter (fourth quarter of project year 3). Specific comments are provided hereafter for each indicator:

- **Indicator # M1 - Total Increase in the number of beneficiaries connected to Water Establishments potable water network:** to be determined after the completion and operation of construction projects in Deddeh, Haouch El Oumara and Kesserouan.
- **Indicator # M2 - Percentage increase in customer satisfaction with potable water services in selected service areas receiving USG assistance:** a customer satisfaction survey was intended to be carried out after the completion and operation of construction projects, however due to time and budget constraints the survey was not rolled-out as planned. WISE is still following up with customers to assess customer service satisfaction, mainly through direct interviews that are currently being conducted for the WISE-Lebanon documentary (refer to section: 5).
- **Indicator # W1 - Total Increase in the number of customers served in targeted service areas:** to be determined after the completion and operation of construction projects in Deddeh, Haouch El Oumara and Kesserouan.
- **Indicator # W2 - Increase in the hours of service delivery to customers in targeted service areas:** to be determined after the completion and operation of construction projects in Deddeh and Haouch El Oumara and the host communities’ project in Terbol.
- **Indicator # W3 - Decrease in the percentage of potable non-revenue water (NRW) in targeted service areas:** to be determined after the completion and operation of construction projects in Deddeh, Haouch El Oumara and Kesserouan.
- **Indicator # W3a - Decrease in the percentage of technical losses of potable water in targeted service areas:** to be determined after the completion and operation of construction projects in Deddeh, Haouch El Oumara and Kesserouan. Results for BMLWE were supposed to be reported in project years 1 and 2. The installation of those district meters was expected to start in project year 1 but was delayed to year 3 due to lack of cooperation from the local municipalities. The results of these indicators will be available for monitoring in the first year of construction project operation.
- **Indicator # W3b - Decrease in the percentage of commercial losses of potable water in target service areas:** to be determined after the completion and operation of construction projects in Deddeh, Haouch El Oumara and Kesserouan.
- **Indicator # W4 - Increase in the percentage of cost recovery:** to be determined after the completion and operation of construction projects in Deddeh, Haouch El Oumara and Kesserouan.
- **Indicator # W4a - Decrease in the average unit cost per volume of potable water pumped:** see Annex 2B where these results for Douara, Jabal Amel, Kafra and Majedel (Chehabiyeh Pump Station) are listed. For Ebel Es Saki, we will not report on this indicator since that construction project was cancelled. Please note, this indicator will be more thoroughly addressed in the final completion report (13th Quarterly report).
- **Indicator # W4b - Decrease in energy consumption per m<sup>3</sup> of potable water pumped by service area:** see Annex 2B where the results for Douara, Jabal Amel, Kafra and Majedel (Chehabiyeh Pump Station) are listed. For Ebel Es Saki, we will not report on this indicator since that construction project was cancelled. Please note, this indicator will be more thoroughly addressed in the final completion report (13th

Quarterly report).

- **Indicator # W4c - Increase in collection ratio:** to be determined after:
  - Implementation of an awareness campaign that encourages subscribers to pay their water fees; and
  - Providing some training sessions to water establishments' employees about fee collection.
- **Indicator # W4d - Increase in the percentage of registered water users who pay their bills:** : to be determined after:
  - Implementation of an awareness campaign that encourages subscribers to pay their water fees; and
  - Providing some training sessions to water establishments' employees about fee collection.
- **Indicator # W5 - Number of participants in OJT program and workshops:** no training events took place this quarter. Please note, this indicator will be more thoroughly addressed in the final completion report (13th Quarterly report).
- **Indicator # W5a - Number of participant-days for OJT program and workshops:** this sub-indicator is included to better monitor actual training days. The same staff may be trained on several different topics, and this is not captured by the previous indicator.

#### WISE-Lebanon Training Sessions (Indicator W5)

WE	Title	Date	No. of Trainees
NLWE	Project Selection Matrix	Apr 19, 2013	2
NLWE	Emergency Preparedness Training	Nov 12, 2013	4
NLWE	EMMP	May 20, 2014	11
NLWE	Communications Procedures & Introductory Session	Dec 4, 2014	11
NLWE	Customer Satisfaction Survey	Dec 16, 2014	13
NLWE	Deddeh Capital Investment Project	Dec 16, 2014	11
NLWE	Operations & Maintenance of Wastewater Treatment Plants (Day 1)	Jan 20, 2015	6
NLWE	Operations & Maintenance of Wastewater Treatment Plants (Day 2)	Jan 27, 2015	5
NLWE	Integrated Water Resources Management (Day 1)	Feb 17, 2015	5
NLWE	Integrated Water Resources Management (Day 2)	Feb 24, 2015	4
NLWE	Management of Groundwater Resources (Day 1)	Mar 10, 2015	10
NLWE	Management of Groundwater Resources (Day 2)	Mar 17, 2015	10

BWE	Project Selection Matrix	Apr 19, 2013	2
BWE	Emergency Preparedness Training	Nov 12, 2013	4
BWE	Project Execution Training	Feb 12, 17, 19, 24, 26, & Mar 3, 2014	1
BWE	EMMP	Apr 16, 2014	9
BWE	Communications Procedures & Introductory Session	Jun 26, 2014	6
BWE	Operations & Maintenance Equipment	Mar 24, 2015	24
BWE	Operations & Maintenance of Wastewater Treatment Plants (Day 1)	Apr 16, 2015	10
BWE	Operations & Maintenance of Wastewater Treatment Plants (Day 2)	Apr 21, 2015	10
BWE	Integrated Water Resources Management (Day 1)	Apr 27, 2015	4
BWE	Integrated Water Resources Management (Day 2)	May 4, 2015	5
BWE	Operations & Maintenance Equipment (Day 1)	May 12, 2015	22
BWE	Operations & Maintenance Equipment (Day 2)	May 13, 2015	22
BWE	Management of Groundwater Resources (Day 1)	Jun 9, 2015	7
BWE	Management of Groundwater Resources (Day 2)	Jun 16, 2015	9
BMLWE	Emergency Preparedness Training	Nov 12, 2013	2
BMLWE	EMMP	Nov 24, 2014	7
BMLWE	Fuel Tanker Truck	Apr 20, 2015	4
SLWE	Project Selection Matrix	Apr 19, 2013	1
SLWE	Emergency Preparedness Training	Nov 12, 2013	1
SLWE	EMMP	Apr 17, 2014	18
SLWE	Training & Simulation on Control Panels	Dec 3, 2014	9
SLWE	Operations & Maintenance Training for CPS Operators (Day 1)	Feb 19, 2015	8
SLWE	Operations & Maintenance Training for CPS Operators (Day 2)	Mar 19, 2015	9
SLWE	Management of Groundwater Resources (Day 1)	Apr 15, 2015	22
SLWE	Management of Groundwater Resources (Day 2)	Apr 22, 2015	22
SLWE	Operations & Maintenance of Wastewater Treatment Plants (Day 1)	Apr 28, 2015	17

SLWE	Operations & Maintenance of Wastewater Treatment Plants (Day 2)	May 5, 2015	19
SLWE	Integrated Water Resources Management (Day 1)	May 12, 2015	17
SLWE	Integrated Water Resources Management (Day 2)	May 27, 2015	15

- **Indicator # W6 - Total number of residents receiving potable water from WE network in targeted service areas (number of Syrian Refugees):** this indicator will not be reported on since the host communities' projects in Ayoun Es Samak, Terbol, and Ebel Es Saki were cancelled.
- **Indicator # W7 - Potable water reservoir constructed by WISE-Lebanon (capacity in m<sup>3</sup>):** this indicator will not be reported on since the Construction of Terbol Reservoir project was cancelled.
- **Indicator # W8 - Spring catchment constructed by WISE-Lebanon (capacity in m<sup>3</sup>):** this indicator will not be reported on since the Ayoun Es Samak Spring Catchment project was cancelled.

## 5. CHALLENGES ENCOUNTERED

The challenges facing the water sector are many and varied, and whilst some have a detrimental effect on project implementation, there are mitigating actions that the WISE-Lebanon team are taking to minimize these effects. One of the most important factors to overcoming challenges has been the development of strong working relationships with the Directors General and staff of the WEs based on the skill and experience of the WISE-Lebanon team. In planning for and addressing specific challenges, the WISE-Lebanon team utilizes the following matrix:

**Table 5.1: Critical Assumptions, Risks, and Mitigating Actions for Overcoming Challenges**

Assumption	Risk	Mitigating Action
Water Establishment management and staff are committed to development	Poor commitment will lead to inability to implement program and reduced investment in infrastructure	WISE-Lebanon is working closely with key managers and staff to ensure ownership of process and cooperation in implementation
Water Establishment staff have the sense of drive and urgency to meet the objectives of the WE	Institutional lethargy will lead to poor customer response, negative impacts on revenue collection, worsening water losses, etc.	WISE-Lebanon is working with staff of WEs to provide encouragement and direction
Absorption capacity of Water Establishments and staff is sufficient to enable developmental changes to occur, particularly as all four	Necessary changes are not made, or lack ownership by management of WEs; information is slow to be	WISE-Lebanon is working with management teams and developing programs with timing to meet needs of WEs; the ERP applications installed

WEs have major projects in progress with another USAID project and other donors	provided; companies develop more slowly than anticipated	under the LWWSS program are key to accelerating information sharing
Government is committed to allow infrastructure projects selected by WISE-Lebanon to be implemented under USAID terms and conditions without interference	Where necessary coordination with MoEW is not adhered to by MoEW, governance of WEs and implementation of selected projects will be impaired	WISE-Lebanon is keeping MoEW informed and making sure there are not any objections from MoEW on the selected projects. WISE-Lebanon is working closely with the other donor organizations to achieve synergies from the programs
No political influence in Board of Directors and management and daily operation of WEs	Water Establishments may respond to political pressures rather than technical priorities	WISE-Lebanon will be working closely with Director Generals of each WE to develop and implement specific technical capacity building programs for senior managers
WEs to ensure that all land is available or properly expropriated for all infrastructure work	Unclear or contested ownership will delay or prevent construction	WISE-Lebanon is working closely with all WEs to identify schemes, route and land requirements, and ensure that correct authorities and permissions are in place
Cooperation by municipalities	Delayed or prevented construction/installation	WISE-Lebanon is requiring WEs to coordinate with the construction contractors to obtain all necessary permits soon after the contract is signed

## 5. COMMUNICATION AND PUBLIC OUTREACH

In support of the planned infrastructure projects, the WISE-Lebanon Program initiated the communication campaign in accordance with the internal approved communication strategy that aims to inform and raise the awareness of the public in each service area about the projects' objectives. Accordingly, the campaign is focused on specific messages identified in conjunction with the recommendations of the pre-construction satisfaction surveys in order to disseminate information about the benefits of these capital investments including metering and consumption based tariff to secure an equitable allocation of resources among registered customers. Furthermore, the messages highlighted the incentives and the advantages of enrollment of residents to become legally registered customers at the Water Establishment.

The messaging underlines the scale of the capital investment that was allocated by USAID/ Lebanon to secure clean and safe water supply while adopting the task order's requirements for visibility and proper branding and marking.

In this regard, the WISE-Lebanon communication team, continued working through a collaborative effort with the Water Establishment, using various media tools to disseminate specific information targeting the existing and potential customers. These communication tools included printed announcements, brochures, billboards and unipole (large billboards) campaigns and ads in local newspapers in the specific service areas. This communication tool also included tailored messages related to the administrative requirements and incentives each Water Establishment has adopted.



Notice of network shutdown

The announcements that were developed were disseminated at each household.



Customer metering awareness campaign

Moreover, the team has launched and completed its customer metering awareness campaign in and around Haouch el Oumara service area. The campaign consisted of 30 billboards and 8 unipoles displayed throughout the months of July and August 2015. The

The team leveraged existing brochures about customer metering that the Establishments had developed earlier. The WISE-Lebanon communications team is currently distributing these brochures along with a new customer metering brochure for BWE. The customer metering brochure has been tailored to be applicable to other future projects, including the Haouch and el Oumara projects.

Moreover, the team has launched and completed its customer metering awareness

material developed will be delivered to the BWE to be used for future campaigns. The team has been working along with a specialized production house to develop the two 8-12 minute documentaries. The first film will cover the four capital investment projects of WISE-Lebanon. Upon the request of USAID, the second documentary has been broadened to highlight USAID's overall water sector support. Furthermore, the team will develop a third short 2-3 minute movie whereby the US Ambassador highlights the USG's support to the water sector over the past half century during a planned site visit to South Lebanon. These documentaries will promote the strategic commitment and engagement of USAID towards improving the lives and livelihoods of Lebanese through sustained water sector assistance programs, such as WISE-Lebanon and LWSS.



*Filming the excavation works*

## 7. PLANNED ACTIVITIES IN NEXT QUARTER

The initial startup plan was approved by USAID on November 30, 2012; the Year 1 and Year 2 work plan was approved by USAID on June 11, 2013; and the Year 3 work plan was approved by USAID on September 18, 2014. Each of these plans laid out the full range of program activities for the respective periods covered. As a result, all planned activities mentioned below directly correspond to the Year 3 work plan.



*Removal of excavated material and hauling to approved landfills in Deddeh*

The main objectives for the upcoming quarter (the fourth quarter of Year 3 of the project) include:

1. Continue collecting data and tracking performance indicators for monitoring and evaluation (M&E) reporting and for sustainability benchmarking schedules reporting.
2. Continue coordinating activities and approvals with the A&E firm, per the WISE-Lebanon task order, mainly focusing on the technical concurrence to secure the closure of all construction projects.
3. Finalize all three remaining infrastructure projects (Haouch El Oumara, Deddeh, and Kesserouan), mainly addressing commissioning, transfer procedures and process transfer notifications to WEs along with related Defect Liability Period bonds
4. Complete close-out procedures for the Chehabiyeh Pump Station project.
5. Finalize all deliverables of WISE-Lebanon due to the mission as per the Task Order. Conduct the closing ceremony, scheduled on November 20<sup>th</sup>, 2015 along with related activities such as project documentary, presentations and handouts.
6. Complete the delivery of pumps for NLWE (Ayoun el Samak), SLWE (Ebel el Saki), complete the rehabilitation of Ablah reservoir and commissioning processes, and finalizing the delivery of the fuel tanker trucks to BMLWE.
7. Finalize all activities related to customer meter reading and barcoding, specifically training of appointed staff in each of the service areas under consideration.

8. Finalize the property inventory and secure CO approval for property and equipment transfer to the Water Establishments (WEs).

## 8. ADMINISTRATIVE ELEMENTS

### 8.1 Office Space and Operations

The office did not require any significant repairs or renovations during the fourth quarter of project year 3.

### 8.2 Staffing

The WISE-Lebanon long-term project staff during the twelfth quarter consisted of:

Name	Position
<b>Rick Albani</b>	Chief of Party (through August 19, 2015)
<b>Scott Short</b>	Chief of Party (as of August 31, 2015)
<b>Antoine Abou Samra</b>	Construction Management Specialist (resigned July 2015)
<b>Salah Saliba</b>	Technical Advisor
<b>Haitham Nemer</b>	Technical Liaison (resigned May 2015)
<b>Rindala Kraitem</b>	Finance Director
<b>Dzovinar Yeghiazarian</b>	Administration & Office Manager
<b>Diana Shannan</b>	M&E & Procurement Specialist
<b>Shaker Zreik</b>	Field Expeditor & Driver
<b>Nadim Salfani</b>	Field Expeditor & Driver
<b>Maya Bou Nassar</b>	Communications Specialist
<b>Imad El Khazen</b>	Construction Supervisor – Haouch El Oumara Project Acting Construction Management Specialist (as of July 27, 2015)
<b>Nabil Moustafa</b>	Construction Supervisor – Deddeh Project
<b>Charbel Moubarak</b>	Construction Supervisor – Kesserouan Villages Project
<b>Ahmad Shahrour</b>	Construction Supervisor – Chehabiyeh Pump Station Project
<b>Hussein Harb</b>	Construction Supervisor – Four Host Communities Projects

The project team is supplemented by Lebanese and international short-term technical assistance (STTA). During the fourth quarter of Year 3, the long-term and short-term team was supported by a dedicated Project Management Unit (PMU) in Chemonics' home office including PMU Director Scott Short, Manager Elyse Wesbey, and Associate Zachary Hauser at no direct cost to the contract. When Director Scott Short was approved as WISE's new Chief of Party, Ms. Catherine Kannam was appointed to PMU Director in September, 2015. As detailed in our monthly invoices, additional home office professionals have provided some billable technical and administrative support including engineering and contracts, monitoring and evaluation, communications, training, field accounting and compliance, and procurement.

### 8.3 Local Subcontracts

The Chemonics consortium implementing WISE-Lebanon includes KREDO and ELARD, Lebanese subcontractors. Chemonics submitted formal requests for USAID consent for ELARD and KREDO on June 25, 2013 and July 5, 2013, respectively. Chemonics proposed to enter into fixed-price subcontracts, which will issue individual firm fixed price purchase orders for specifically defined activities to ensure cost control and full compliance with the specifications and delivery requirements of these services procurements. With this type of subcontract, there is a high degree of certainty of the prices and that the deliverables are clearly defined, which are appropriate for the risks involved. USAID approved the subcontracts for ELARD and KREDO on July 29, 2013 and August 1, 2013, respectively.

Chemonics used a similar process with each of the four construction subcontractors (Construction Services Company, Parallel Contracting, Zakhem Engineers, and Estephan Company). After each firm was selected through a highly competitive process, Chemonics entered into a fixed price subcontract based on fixed unit rates, with a limited number of items designated as re-measurable quantities. Chemonics submitted requests for USAID consent for Construction Services Company, Parallel Contracting, Zakhem Engineers, and Estephan Company on January 27, 2014, February 7, 2014, February 26, 2014, and September 9, 2014, respectively. USAID approved the subcontracts for Construction Services Company, Parallel Contracting, Zakhem Engineers, and Estephan Company, on January 29, 2014, February 11, 2014, March 3, 2014, and September 17, 2014, respectively. Major host community subcontracts executed include Medilab for the procurement of fuel tanker trucks in November, 2014, Caretek for the procurement of water supply network operations and maintenance (O&M) equipment in December, 2014, and Parallel Consulting for Ablah reservoir rehabilitation in May, 2015.

## 9. FINANCIAL AND CONTRACTUAL ELEMENTS

### 9.1 Financial Elements

The 4th Quarter of Year 3 of the WISE-Lebanon project has been completed with invoice submissions on the following dates:

Invoice 33	August 26, 2015	(July invoice)
Invoice 34	September 24, 2015	(August Invoice)
Invoice 35	TBD/October 2015	(September Invoice)

The WISE accruals through Year 3, 4th Quarter are as follows:

Accruals as of September 30, 2015		
Total Funds Obligated	As of September 30, 2015	██████████
Total Life of Project Expenditures at End of Previous Quarter	As of June 30, 2015	██████████
Total Projected Quarterly Expenditures for Current Quarter	July 1, 2015 – September 30, 2015	██████████

Remaining Obligated  
 Funds Available at End of  
 Current Quarter

As of September 30, 2015

[REDACTED]

**9.2 Quarterly Financials (July 2015 – September 2015)**

The total budget under this task order is \$23,705,423, of which [REDACTED] has been obligated. Below is the estimated monthly expenditure summary for WISE-Lebanon during the reporting period for both programmatic and operations costs.

Monthly Project Expenditures for WISE-Lebanon				
Month	Total Amount Spent in Month	Total Amount Spent to Date	Obligated Amount Remaining	Total Contract Ceiling Amount Remaining
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Below is the estimated expenditure summary for WISE-Lebanon during the reporting period for both programmatic and operations costs, broken down by CLIN.

Expenditures Breakdown by CLIN						
CLIN No.	Approved Budget	Obligated to Date	Twelfth Quarter Expenses (July-September 2015)	Cumulative Expenses	Remaining Budget Balance	Projected Expenses for Upcoming Quarter (October-Dec, 2015)
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

**9.3 Contractual Elements**

During the twelfth quarter, WISE-Lebanon Task Order No AID-268-TO-12-00002 under the Integrated Water and Coastal Resources Management IQC, Contract No EPP-I-00-04-00020-00 received Modification 05. The modification extended the period of performance to December 23, 2015 and increased WISE’s obligation to [REDACTED].

## 10. TRAVEL INFORMATION

Although the frequency of international travel is low due to the nature of the program's work, in Quarter 12 the program had one trip by Project Management Unit (PMU) Director, Scott Short starting July 6 to the present date in order to serve as Acting COP, [REDACTED] Mr. Short received official USAID approval to serve in the capacity of Chief of Party on August 31, 2015. There was no other international travel during the Quarter 12 period.

### Travel of International Short-Term Experts in Fourth Quarter of Year 3

Name	Company	Dates of Travel	Reason
Scott Short*	Chemonics	July 6, 2015 to Present	Chief of Party (as of August 31, 2015)

\* Travel was approved by USAID.

## 11. DELIVERABLES SUBMITTED TO USAID

The following deliverables have been submitted to USAID:

Report No.	Title of Report	Submission Date
00	Startup Plan (original)	November 2, 2012
00	Startup Plan (revised)	November 23, 2012
01	First Quarterly Report October 2012 - December 2012	January 18, 2013
02	Preliminary Analytical Assessment / Feasibility Report	March 19, 2013
02A	Preliminary Analytical Assessment Report (Revised)	April 23, 2013
02B	Preliminary Analytical Assessment Report (Second Revision)	April 30, 2013
03	Performance Monitoring Plan Report	March 28, 2013
03A	Performance Monitoring Plan Report (Revised)	May 12, 2013
03B	Performance Monitoring Plan Report (Second Revision)	August 17, 2013

Report No.	Title of Report	Submission Date
03C	Monitoring and Evaluation Plan Report (Third Revision)	October 5, 2013
04	Prequalification Findings Report (Interim)	March 28, 2013
05	Second Quarterly Report January 2013 – March 2013	April 12, 2013
06	Year 1 and Year 2 Work Plan	June 11, 2013
07	Third Quarterly Report April 2013 – June 2013	July 15, 2013
08	Deddeh Water Supply Network Report (Required IEE report submitted to Ministry of Environment.)	August 5, 2013
09	Haouch El Oumara Water Supply Network Report (Required IEE report submitted to Ministry of Environment.)	August 5, 2013
10	Chehabiyeh Pump Station - ERAC & EMMP Report	August 7, 2013
11	Haouch El Oumara Network - ERAC & EMMP Final Report	August 7, 2013
12	Deddeh Water Supply Network - ERAC & EMMP Final Report	August 7, 2013
13	Final Prequalification Findings Report	August 14, 2013
14	First Annual Report / Fourth Quarterly Report	October 23, 2013
15	Rapid Assessment of Water Service Needs of Lebanese Communities Hosting Syrian Refugees and Emergency Preparedness of Water Establishments	December 2, 2013
15A	Rapid Assessment of Water Service Needs of Lebanese Communities Hosting Syrian Refugees and Emergency Preparedness of Water Establishments (Executive Summary only)	December 2, 2013
16	Fifth Quarterly Report October 2013 – December 2013	January 17, 2014
16A	Fifth Quarterly Report (Revised) October 2013 – December 2013	

Report No.	Title of Report	Submission Date
		April 17, 2014
17	Strengths and Weaknesses of Water Establishments Report	Draft – January 23, 2014 Final - April 15, 2014
18	Final Feasibility Studies Report of Candidate Projects for Implementation Volumes I and II	February 3, 2014
19	Sixth Quarterly Report January 2014 – March 2014	April 17, 2014
19A	Sixth Quarterly Report (Revised) January 2014 – March 2014	May 12, 2014
20	Seventh Quarterly Report April 2014 – June 2014	July 19, 2014
20A	Seventh Quarterly Report (Revised) April 2014 – June 2014	August 18, 2014
21	Year 3 Work Plan	August 31, 2014
22	Introduction of Water Customer Metering in Kesserouan Caza – ERAC & EMMP Report	September 18, 2014
23	Second Annual Report/Eighth Quarterly Report	October 27, 2014
23A	Second Annual Report/Eighth Quarterly Report (Revised)	December 08, 2014
24	Ninth Quarterly Report October 2014 – December 2014	January 30, 2015
25	Tenth Quarterly Report January 2015 – March 2015	April 17, 2015
26	Eleventh Quarterly Report April-June, 2015	August 4, 2015
27	Feasibility Report for Household Water Meters Installation in Ajaltoun, Rayfoun, and Qleiat	August 26, 2015
28	Water Quality Sampling and Testing - Water Quality Sampling and Flow Measurement Report	August 2015
29	Refurbishment of the Ayoun Es Samak Spring Catchment Area - Initial Environmental Examination (IEE)	September 2015

Report No.	Title of Report	Submission Date
30	Twelfth Quarterly Report July-September, 2015	October 15, 2015

## 12. ANNEXES





Item	Task No.	Task Descriptions	Sub-Task and Deliverable	Date Due	Year 1				Year 2								Year 3											
					Q1	Q2	Q3	Q4	Q1	Q2	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
CLIN 2		Project Implementation																										
			c. Provide training of WEs' personnel on procured equip																									

Item	Task No.	Task Descriptions	Sub-Task and Deliverable	Date Due	Year 1				Year 2								Year 3											
					Q1	Q2	Q3	Q4	Q1	Q2	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33	M34	M35	M36
CLIN 3		Capacity Building on Implemented Capital Investment																										
	3.1	Organize training sessions and study tours (as needed)	a. Training and study tours	As needed																								
			b. Coordinate capacity building with LWWSS	As needed																								
	3.2	Provide targeted on-the-job training.	a. Training needs assessment for targeted investments	As needed																								
			b. On the job training based on needs	As needed																								
	3.3	Develop O&M Manuals and provide O&M supervision.	a. O&M manuals and supervision	Years 2 and 3																								
ADMIN		Various Reports and Submittals																										
	i	Annual Work Plan	Year 1 and 2 Work Plans	Month 8																								
	ii	Final Work Plan for Year 3	Annual Work Plan	August 2014																								
	iii	Quarterly Report	Quarterly Performance Report and summary of progress	Every 3 months																								
	iv	PMP Quarterly Reporting	Performance Indicators monitoring and reporting	Every 3 months																								
	v	Completion Report	Final close out report	End of Project																								

## Annex 2A: WISE-Lebanon Performance Monitoring & Evaluation Plan Indicators

#	Indicator (Type)	Definition	Disaggregate By	Data Source	Method and Frequency of Data Collection	Frequency of Reporting	WE	Baseline*	Target Y1	Target Y2	Target Y3	Total change from baseline	Total result at end of Y3	Key Assumptions, Comments, Milestones	Person Responsible
<i>USAID/Lebanon Development Objective: Improved capacity of public sector in providing transparent, quality services across Lebanon</i>															
<i>USAID IR 1.2: Improved availability of water related public services to all in Lebanon</i>															
M1	Total Increase in the number of beneficiaries connected to the WE potable water network (Output)	We will count the increase in the number of individuals benefitting from registered household connection within the targeted service areas (zones).	By WE targeted service area	WE customer databases and business plans and the Central Administration for Statistics (CAS)	As part of their LOC, WEs will submit data to technical staff every six months. Technical staff will conduct spot-checks to verify data. The technical team will use the latest occupancy rate from the Central Administration for Statistics (CAS).	Semi-annual	NLWE	1,840	0	1,380	2,806	4,186	6,026	Assumes WE customer databases are updated. Registration of new subscribers is year round. Descriptive analytics will show population served as percentage of total population in service area.	Maya Bou Nassar
							BWE	13,094	0	5,147	12,008	17,155	30,249		
							BMLWE	17,560	0	1,750	1,925	3,675	21,235		
M2	Percentage increase in customer satisfaction with potable water services in selected service areas receiving USG assistance (Outcome)	Customers are registered entities in WISE targeted service areas. Customers could include households, businesses or commercial entities, churches and mosques, industry (e.g., construction sites), and government institutions (schools & hospitals) within the targeted service areas (zones). Customer satisfaction is the extent to which customers are satisfied with the potable water services they receive from their respective water establishment.	By WE targeted service area, customer class, metered vs. non-metered	Sample of registered customers	Customer satisfaction survey: baseline and end-term.	Baseline and end-term	NLWE	TBD by Customer Survey	0%	0%	10%			Minimum sample size for each water establishment targeted service area will be calculated to ensure the results will be statistically significant (i.e., probability that the change in customer satisfaction did not happen by chance).	Salah Saliba
							BWE	TBD by Customer Survey	0%	0%	25%				
							BMLWE	TBD by Customer Survey	0%	0%	20%				
<i>LEBANON WISE Objective: Enhance Lebanon's capacity to manage water resources through water and wastewater infrastructure upgrades and related management support</i>															
<i>Intermediate Result 1: Infrastructure enhancements identified, designed, and implemented</i>															
W1*	Total Increase in the number of customers served in targeted service areas (Output)	We will count the increase in the number of <b>registered</b> customers in terms of households, businesses or commercial entities (can also include churches and mosques), industry	By WE targeted service area, customer class, metered vs. non-metered	WE customer databases and business plans	As part of their LOC, WEs will submit data to technical staff every six months. Technical	Semi-annual	NLWE	400	0	300	610	910	1,310	Assumes WE customer databases are updated. Registration of new subscribers is year	Maya Bou Nassar

		(e.g., construction sites), and government institutions (can also include military offices) within the targeted service areas (zones).			staff will conduct spot-checks to verify data.		BWE	2,786	0	1,095	2,555	3,650	6,436	round. Descriptive analytics will show number of customers served as percentage of service area population covered and will show the increase in the number of people with access to potable water.	
							BMLWE	5,017	0	500	550	1,050	6,067		
W2*	Increase in the hours of service delivery to customers in targeted service areas (Output)	We will determine the increase in average number of hours per day that customers in targeted service areas have potable water services.	By WE targeted service area	WE rationing plans, customers	As part of their LOC, WEs will submit data to technical staff every 3 months. Technical staff will verify through site visit surveys.	Quarterly	NLWE	9	0	0	6	6	15	Service hours fluctuate depending on EDL. Did not include BMLWE because their baseline for the target service area is already at 24 hours of service per day because the local reservoirs in the target service areas are fed by gravity from the Shabrouh dam. For BWE, it is estimated that hours of service are between 6-9 hours every other day or 12 in the winter and 6 in the summer. For SLWE, we will monitor whether the reservoirs are full for certain hours of the day.	Haitham Nemer
							BWE (Haouch El Oumara)	9	0	0	6	6	15		
							BWE (Terbol)	9	-	-	9	9	18		
W3*	Decrease in the percentage of potable non-revenue water (NRW) in targeted service areas (Outcome)	NRW is the difference between system input volume and <b>billed</b> authorized consumption. System input volume is the total volume input to the target service area. Authorized consumption is the total volume of metered and non-metered potable water taken by registered customers, the WEs, and others who are implicitly and explicitly	By WE targeted service area	WE meter records, production data, and sales data	Technical staff will collect data from WE records and calculate volume and percentage of non-revenue water every three months	Quarterly	NLWE	48%	0	0	28%	28%	20%	Bills are systematically issued at start of Lebanon FY (Jan) based on customer database in target service area. We will not start seeing results for NLWE and BWE target service areas	Salah Saliba

		authorized to do so (e.g., fire hydrants, fountains). For baseline calculation, we will use the simplified water balance equation (total potable water sent to system minus potable water sold/apparent demand) since data is not available. Once meters are installed, we will calculate by taking the cubic meters of total system input volume for specific targeted service areas and subtracting cubic meters of total billed authorized consumption, then percentage is calculated by dividing that number by total cubic meters of system input volume.					BWE	40%	0	0	20%	20%	20%	until the network is completed in Year 3. We will start seeing results for BMLWE target service area since the network is new and the scope involves meter installation and training. The targets are set assuming that shortly after the installation of new networks and meters illegal connection will not exist and leakage and over flows will be minimal.			
							BMLWE	50%	0	22%	8%	30%	20%				
W3a*	Decrease in the percentage of technical losses of potable water in targeted service areas (Outcome)	Technical losses, also referred to as "physical losses" or "real losses", is the total volume (in cubic meters) lost through types of leaks, bursts, and overflows on mains, storage tanks (covered reservoirs), and service connections up to the point of customer metering. We will report the percentage of technical losses from the total system input; This is calculated by taking the total volume of potable NRW in targeted service areas and subtracting the total cubic meters of <b>unbilled</b> authorized consumption and estimated total cubic meters of commercial losses in the same targeted service areas the result is divided by the total system input and multiplied by 100.	By WE targeted service area	WE records	Technical staff will collect data from WE records and calculate every three months	Quarterly	NLWE	33.6%	0%	0%	26.6%	26.6%	7%	For baseline data in NLWE and BWE, we will assume that technical loss is 70% of NRW because target service areas are villages. For BMLWE, the baseline is 10% of NRW since the network is new. We will not see results until the network is completed in Year 3.	Primary: Salah Saliba Secondary: Haitham Nemer		
							BWE	28%	0%	0%	18%	18%	10%				
							BMLWE	5%	1%	1%	1%	3%	2%				
W3b	Decrease in the percentage of commercial losses of potable water in target service areas (Outcome)	Commercial losses, also referred to as "apparent losses" or "administrative losses", consist of unauthorized consumption (illegal connections and theft of water from registered customers) and all types of meter inaccuracies (slow meters, malfunctioning meters, stuck or frozen meters, stopped and blocked meters, incorrect meter readings, and under estimated flat rate or lump sum tariffs). We will report the percentage of commercial losses from the total system input; This is calculated by adding an estimate of total cubic meters unauthorized consumption and an estimate of total cubic meters of customer metering inaccuracies in the targeted service areas.	By WE targeted service area	WE records	Technical staff will collect data from WE records and calculate every three months	Quarterly	NLWE	14.4%			1.4%	1.4%	13%	For baseline data for NLWE and BWE, we will assume that commercial loss is 30% of NRW because targeted service areas are villages. For BMLWE, baseline is 90% of NRW since networks are new so technical losses are very small. Even though this indicator is under IR 1 as part of the NRW calculation, it also contributes to IR 2. That is, a decrease in commercial losses is also a measure of financial and managerial sustainability.	Primary: Maya Bou Nassar Secondary: Haitham Nemer		
							BWE	12%			2%	2%	10%				
							BMLWE	45%			27%	27%	18%				
Intermediate Result 2: Financial and managerial performance and sustainability of WE improved through capacity building																	

W4*	Increase in the percentage of cost recovery (Outcome)	Cost recovery means the WEs are able to recover operations and maintenance (O&M) costs in the targeted service areas through revenues and improved collections (including full billing cycle and deployment of consumption-based tariffs). This is, in essence, improved water demand management. O&M costs include labor, electricity, chemicals (chlorine and others), maintenance, and repairs. The percentage of cost recovery is calculated by subtracting actual O&M costs in the targeted service areas from actual revenue of the same targeted areas, and dividing that number by actual O&M costs then adding 1 to the result. Maintenance fees are not included in O&M costs since it is assumed that WEs do not have actual costs for it.	By WE targeted service area	WE annual reports submitted to MoEW, KPIs	Technical staff will collect data from WE reports and calculate percentage of cost recovery annually	Annual	NLWE	88%	0	0	22%	22%	110%	Breakeven point is at 100%. Baseline data assumes only 9 hours of service delivery (not 24 hours) and lump sum-based tariff. Targets are based on at least 15 hours of service delivery, consumption-based tariff, increase in number of customers, and change in volume of water delivered. Milestone: Improved procedure manual(s) for collections and billing completed; PA brochures (to educate citizens to pay for water services) developed and distributed.	Primary: Salah Saliba Secondary: Haitham Nemer
							BWE	40%	0	0	70%	70%	110%		
							BMLWE	131%	0	0	11%	11%	142%		
W4a	Decrease in the average unit cost per volume of potable water pumped (Outcome)	We will calculate this by dividing total O&M cost per pump in targeted service areas by total system input volume by pump in the same targeted areas.	By reservoir or service area	SLWE records	Technical staff will collect data from SLWE and calculate every six months	Semi-annual	Douara P1/P2/P3	210 LBP/ m <sup>3</sup>	0	0	14 LBP/ m <sup>3</sup>	14 LBP/ m <sup>3</sup>	196 LBP/m <sup>3</sup>	Assumes that automation of some pump functions will lead to reduced overtime (which equals labor savings).	Primary: Antoine Abou Samra Secondary: Haitham Nemer
							J.Amel P7/P9	98 LBP/ m <sup>3</sup>	0	0	5 LBP/ m <sup>3</sup>	5 LBP/ m <sup>3</sup>	93 LBP/m <sup>3</sup>		
							Kafra P4/P5/P6	108 LBP/ m <sup>3</sup>	0	0	38 LBP/ m <sup>3</sup>	38 LBP/ m <sup>3</sup>	70 LBP/m <sup>3</sup>		
							Majedel P8	98 LBP/ m <sup>3</sup>	0	0	25 LBP/ m <sup>3</sup>	25 LBP/ m <sup>3</sup>	73 LBP/m <sup>3</sup>		
							Ebel Es Saki	156 LBP/ m <sup>3</sup>	0	0	15 LBP/ m <sup>3</sup>	15 LBP/ m <sup>3</sup>	141 LBP/ m <sup>3</sup>		
W4b	Decrease in energy consumption per M <sup>3</sup> of potable water pumped by service area (Outcome)	We will measure the change in energy consumption per M3 of potable water pumped for each pumping station by taking the number of kilowatt usage of each pump and multiplying that by total hours the pump was running than dividing the total by the total volume pumped. Unit of measure is kilowatt hours per cubic meter.	By service area	Electric meters, pump operators, electric bill	Technical staff will collect data from SLWE and calculate every six months	Semi-annual	Douara P1/P2/P3	1.613 kwh/ m <sup>3</sup>	0	0	0.107 kwh/ m <sup>3</sup>	0.107 kwh/ m <sup>3</sup>	1.506 kwh/ m <sup>3</sup>	Targets were determined assuming each pumping station will operate 24 hrs daily when replaced.	Primary: Antoine Abou Samra Secondary: Haitham Nemer
							J.Amel P7/P9	0.750 kwh/ m <sup>3</sup>	0	0	0.036 kwh/ m <sup>3</sup>	0.036 kwh/ m <sup>3</sup>	0.714 kwh/ m <sup>3</sup>		
							Kafra P4/P5/P6	0.833 kwh/ m <sup>3</sup>	0	0	0.291 kwh/ m <sup>3</sup>	0.291 kwh/ m <sup>3</sup>	0.542 kwh/ m <sup>3</sup>		
							Majedel P8	0.75 kwh/ m <sup>3</sup>	0	0	0.19 kwh/ m <sup>3</sup>	0.19 kwh/ m <sup>3</sup>	0.56 kwh/ m <sup>3</sup>		
							Ebel Es Saki	1 kwh/ m <sup>3</sup>	0	0	0.1 kwh/ m <sup>3</sup>	0.1 kwh/ m <sup>3</sup>	0.9 kwh/ m <sup>3</sup>		
W4c	Increase in collection ratio (Outcome)	Improved networks and services result in an increased number of customers (through legalization of illegal connections) and improved collection efficiency. We will take the total amount collected and divide it by the total amount billed (includes	By WE targeted service area	WE records	Technical staff will collect data from WE records and calculate annually	Annual	NLWE	88%	0	0	2%	2%	90%	Collection ratio as of Dec 2012 for the entire service territory of NLWE is 53%, compared to 88% in the targeted service area.	Salah Saliba
							BWE	47%	0	7%	12%	19%	66%		

		paid and non-paid) for targeted service areas.					BMLWE	62%	0	22%	11%	33%	95%		
W4d	Increase in the percentage of registered water users who pay their bills (Outcome)	Registered water users are WISE customers in targeted service areas. We will count customers who have "current status" on their accounts with water establishments at the time of data collection.	By WE targeted service area	WE reports	As part of their LOC, WEs will submit data to technical staff	Annual	NLWE	88%	0	0	2%	2%	90%	Assumes water establishment records are up-to-date. This indicator reports similar data as indicator 4c. The same baseline & targets as 4c were used.	Salah Saliba
							BWE	47%	0	7%	12%	19%	66%		
							BMLWE	90%	0	2.5%	2.5%	5%	95%		
W5	Number of participants in OJT program and workshops (Output)	We will count the number of people from WEs and from subcontractors working on construction projects associated with each respective WE that participate in our on-the-job (OJT) program and workshops/training. We will count participants only once, even though they may choose to attend more than one training session.	By WE targeted service area and by sex	Project records	Technical staff will track data using participation sheets and site visits.	Quarterly	NLWE	0	2	2	6	10	10	For female participants, we will track how many are in decision-making or management positions. We will also obtain baseline information on how many are employed to provide context for disaggregation.	Diana Shannan
							BWE	0	2	2	6	10	10		
							BMLWE	0	4	2	24	30	30		
							SLWE	0	0	2	8	10	10		
W5a	Number of participant/days for OJT program and workshops (Output)	We will count the number of people from WEs and from subcontractors working on construction projects associated with each respective WE that participate in each training day of our on-the-job (OJT) program and workshops/training. This sub-indicator is included to better monitor actual training days because the same staff may be trained on several different topics, and this is not captured by the indicator #W005.	By WE targeted service area	Project records	Technical staff will track data using participation sheets and site visits.	Quarterly	NLWE	-	2	4	8	14	14	n/a	Diana Shannan
							BWE	-	2	4	8	14	14		
							BMLWE	-	4	4	48	56	56		
							SLWE	-	0	4	12	16	16		
<i>Indicators related to Host Communities Projects</i>															
W6	Total number of residents receiving potable water from WE network in targeted service areas (number of Syrian Refugees) (Output)	We will count the total number of individuals benefitting from WE potable water network (registered household connections within the targeted service areas), in addition to the registered Syrian refugees (between parentheses) receiving potable water from WE network in targeted service areas	By WE targeted service area	WE records, UNHCR records	Technical staff will collect data from WE customer data base and from UNHCR published records of registered Syrian refugees	Annual	NLWE	30,360 (8,006)	0	0	30,907 (8,150)	547 (144)	30,907 (8,150)	In setting the targets for this indicator, we took into account the annual growth rate (1.8%) and we applied the same growth rate to the Syrian refugees assuming (according to published reports) that the numbers of	Maya Bou Nassar
							BWE	17,574 (2,920)	0	0	17,890 (2,972)	316 (52)	17,890 (2,972)		

							SLWE	3,702 (159)	0	0	3,769 (162)	67 (3)	3,769 (162)	Syrian refugees are tending to stay stable in the upcoming months.	
W7	Potable water reservoir constructed by WISE-Lebanon (capacity in m3) (Output)	Additional volume of potable water due to the construction of a new water reservoir provided by WISE-Lebanon	n/a	WISE-Lebanon records	Technical staff will provide the relevant data after the completion of the construction project	Annual	BWE	0	0	0	300 m3	300 m3	300 m3	n/a	Hussein Harb
W8	Spring catchment constructed by WISE-Lebanon (capacity in m3) (Output)	Additional volume of potable water due to the construction of spring catchment provided by WISE-Lebanon	n/a	WISE-Lebanon records	Technical staff will provide the relevant data after the completion of the construction project	Annual	NLWE	0	0	0	TBD	TBD	TBD	n/a	Hussein Harb

**Annex 2B: WISE-Lebanon Performance Monitoring & Evaluation Plan Indicators - Actuals**

**WISE-Lebanon Key Performance Indicators Table**

#	Indicator	Data Source	Type	WE	Baseline	Year 1		Year 2		Year 3		Total life of program	
						Target	Actual	Target	Actual	Target	Actual	Target	Actual
<b>USAID/Lebanon Development Objective: Improved capacity of public sector in providing transparent, quality services across Lebanon</b>													
<b>USAID IR 1.2: Improved availability of water related public services to all in Lebanon</b>													
M1	Total Increase in the number of beneficiaries connected to the WE potable water network	WEs and CAS	output	NLWE	1,840	-	-	1,380	0	4,186	TBD	4,186	TBD
				BWE	13,094	-	-	5,147	0	17,155	TBD	17,155	TBD
				BMLWE	17,560	-	-	1,750	0	3,675	TBD	3,675	TBD
M2	Percentage increase in customer satisfaction with potable water services in selected service areas receiving USG assistance	Survey	outcome	NLWE	72.25%	-	-	-	-	10%	TBD	10%	TBD
				BWE	37.05%	-	-	-	-	25%	TBD	25%	TBD
				BMLWE	29.25%	-	-	-	-	20%	TBD	20%	TBD
<b>LEBANON WISE Objective: Enhance Lebanon's capacity to manage water resources through water and wastewater infrastructure upgrades and related management support</b>													
<b>IR 1: Infrastructure enhancements identified, designed, and implemented</b>													
W1	Total Increase in the number of customers served in targeted service areas	WEs	output	NLWE	400	-	-	300	0	910	TBD	910	TBD
				BWE	2,786	-	-	1,095	0	3,650	TBD	3,650	TBD
				BMLWE	5,017	-	-	500	0	1,050	TBD	1,050	TBD
W2	Increase in the hours of service delivery to customers in targeted service areas	WEs	output	NLWE	9	-	-	-	-	6	TBD	6	TBD
				BWE (HEO)	9	-	-	-	-	6	TBD	6	TBD
				BWE (Terbol)	9	-	-	-	-	9	TBD	9	TBD
W3	Decrease in the percentage of potable non-revenue water (NRW) in targeted service areas	WEs	outcome	NLWE	48%	-	-	-	-	28%	TBD	28%	TBD
				BWE	40%	-	-	-	-	20%	TBD	20%	TBD
				BMLWE	50%	-	-	22%	0	30%	TBD	30%	TBD
W3a	Decrease in the percentage of technical losses of potable water in targeted service areas	WEs	outcome	NLWE	33.60%	-	-	-	-	26.60%	TBD	26.60%	TBD
				BWE	28%	-	-	-	-	18%	TBD	18%	TBD
				BMLWE	5%	1%	0	1%	0	3%	TBD	3%	TBD
W3b	Decrease in the percentage of commercial losses of potable water in target service areas	WEs	outcome	NLWE	14.40%	-	-	-	-	1.40%	TBD	1.40%	TBD
				BWE	12%	-	-	-	-	2%	TBD	2%	TBD
				BMLWE	45%	-	-	-	-	27%	TBD	27%	TBD
<b>IR 2: Financial and managerial performance and sustainability of WE improved through capacity building</b>													
W4	Increase in the percentage of cost recovery	WEs	outcome	NLWE	88%	-	-	-	-	22%	TBD	22%	TBD
				BWE	40%	-	-	-	-	70%	TBD	70%	TBD
				BMLWE	131%	-	-	-	-	11%	TBD	11%	TBD
W4a	Decrease in the average unit cost per volume of potable water pumped (LBP/m3)	SLWE Records	outcome	Douara	210	-	-	-	-	14	17	14	17
				J.Amel	98	-	-	-	-	5	15	5	15
				Kafra	108	-	-	-	-	38	78	38	78
				Majedel	98	-	-	-	-	25	39	25	39
				Ebel Es Saki	156	-	-	-	-	15	0	15	0
W4b	Decrease in energy consumption per M3 of potable water pumped by service area (kwh/m3)	Electric meters, pump operators, electric bill	outcome	Douara	1.613	-	-	-	-	0.107	0.130	0.107	0.130
				J.Amel	0.75	-	-	-	-	0.036	0.118	0.036	0.118
				Kafra	0.833	-	-	-	-	0.291	0.600	0.291	0.600
				Majedel	0.75	-	-	-	-	0.19	0.299	0.19	0.299
				Ebel Es Saki	1	-	-	-	-	0.1	0	0.1	0
W4c	Increase in collection ratio	WEs	outcome	NLWE	88%	-	-	-	-	2%	TBD	2%	TBD
				BWE	47%	-	-	7%	0	19%	TBD	19%	TBD
				BMLWE	62%	-	-	22%	0	33%	TBD	33%	TBD
W4d	Increase in the percentage of registered water users who pay their bills	WEs	outcome	NLWE	88%	-	-	-	-	2%	TBD	2%	TBD
				BWE	47%	-	-	7%	0	19%	TBD	19%	TBD
				BMLWE	90%	-	-	2.50%	0	5%	TBD	5%	TBD
W5	Number of participants in OJT program and workshops (# of females)	Project Records	output	NLWE	-	2	2(0)	2	9(3)	6	28(7)	10	39(10)
				BWE	-	2	2(1)	2	15(5)	6	52(6)	10	62(10)
				BMLWE	-	4	0	2	2(1)	28	9(2)	30	11(3)
				SLWE	-	-	1(0)	2	16(5)	8	42(9)	10	48(11)
W5a	Number of participant/days for OJT program and workshops	Project Records	output	NLWE	-	2	2	4	14	8	63	14	79
				BWE	-	2	2	4	24	8	113	14	139
				BMLWE	-	4	0	4	2	50	9	56	11
				SLWE	-	-	1	4	17	12	138	16	156
W6	Total number of residents receiving potable water from WE network in targeted service areas (number of Syrian Refugees)	WE records, UNHCR records	output	NLWE	30,907 (8,006)	-	-	-	-	30,907 (8,150)	TBD	30,907 (8,150)	TBD
				BWE	17,574 (2,920)	-	-	-	-	17,890 (2,972)	TBD	17,890 (2,972)	TBD

				SLWE	3,702 (159)	-	-	-	-	3,769 (162)	TBD	3,769 (162)	TBD
W7	Potable water reservoir constructed by WISE-Lebanon (capacity in m3)	Project Records	output	BWE	0	-	-	-	-	300	TBD	300	TBD
W8	Spring catchment constructed by WISE-Lebanon (capacity in m3)	Project Records	output	NLWE	0	-	-	-	-	TBD	TBD	TBD	TBD

**Annex 3: Construction Status Tables**

**Table 1: Construction Status - Chehabiyeh Pump Station as of end of September, 2015**

Items	Applicable values / dates	WISE Comments / details	Conclusion/ due dates
<b>A. Duration</b>			
Project start date	27 Feb 14 (A)		30 April 2015
Project Duration	12 M + 1 M / 366 + 31 days	27 Feb 2014 to 30 April 2015	
Contractual completion date	31 March,2015	Contract modification, one month extension of time.	31 March,2015
Days and % since commencement	109%	398 out of 366	31 March, 2015
Expected delays (days)	Under evaluation	Subcontractor's request for extension of time	N/A
<b>B. Mobilization</b>			
Site possession	1 Apr 14 (A)	Issued to Sub, (site handing over)	-
Site facilities	100%	Accepted by WISE	2 Apr 2014 (A)
Insurance	100%	Insurance accepted for payment by WISE	4 Sep. 2014
QA/QC Plans	100%	Accepted by WISE	8 Apr 2014 (A)
Baseline Schedule	100%	Accepted by WISE	23 Apr 2014 (A)
Revised baseline		Submitted by Subcontractor with a request for extension of time for 2 months. Subcontractor was requested on 16 Oct. to revise and resubmit and give substantiation why an extension is requested. Schedule will be updated once the shutdown period of the pumping station is defined SLWE	3 Oct. 2014
Testing Laboratories/Agencies approved	100%	ACTS for concrete and steel	8 Apr 2014 (A)
Coordination, authorities, permits achieved	100%	Municipality confirmed no permits are needed. Permits to use waste dumping area received from municipality	14 Jun 2014 (A)
Demobilization	100%	The subcontractor completed the demobilization by 31 March 2015. (the subcontractor confirmed the demobilization by a letter and Wise accepted)	31 March, 2015
<b>C. HSE</b>			
HSE Plans	100%	Subcontractor Plans accepted by WISE	31 Mar 2014
Training	N/A	3 training sessions for operators of the station held on site and in electrical panel's factory, and a training during the (one month run test).	ongoing
Tool box safety and HSE		Meetings each Monday	ongoing
Latest monitoring meeting		Daily and weekly reporting	5 Jan. 2015
Any reportable incidents	N/A	Nothing	N/A
<b>D. Design &amp; feasibility review &amp; construction coordination issues</b>			
Survey existing conditions	100%	Field work complete, Report submitted with design review letter, (submitted at 13 May 2014 and accepted by Wise on 1 Jun 2014)	1 June 2014
Survey Report - Douara	100%	Submitted and approved	15 Jul 14 (A)
Survey Report – Jabal Amel	100%	Received from Sub, approved by WISE	14 Aug 14 (A)
Surge analysis – Douara line	100%	Surge analysis submitted, approved by WISE on 19-6-2014, VO for surge tank under review by WISE. This VO was verbally approved. Pending additional information from subcontractor.	19 June 2014
Surge analysis – Jabal Amel line	100%	Jabal Amel line: Submitted by CSC, approved by WISE. No need for surge tank on this line.	18 Aug 14 (A)
Letter as per RFP	100%	Letter received, verified by WISE	20 Jun 14 (A)

Items	Applicable values / dates	WISE Comments / details	Conclusion/ due dates
<b>Resulting revisions / issues</b>		-	
Variations / issues – VO #1	100%	Addition of Automatic Transfer Switch (ATS) - Approved	3 July 2014
Variations / issues – VO #2	10%	Addition of Electric bypasses to soft starters - Approved	3 July 2014
Variations / issues – VO #3	100%	Surge tank (2,500 liters instead of 500 liters as specified in BOQ). VO approved by WISE. Will be sent to AE for review.	TBD
Variations / issues – VO #4	100%	Installation is completed, inspected, tested and accepted. The variation was agreed by Wise and later sent to AE for review	Approval of Installation on 31 Jan 2014  Tested on 27 May 2015 and the result appeared on 13 Jun 2015 and accepted by WISE.
Pending issues	0%		TBD
Pending issues	0%	Variation 19, which represents a combination of 8 minor civil works, all, are agreed by wise during the implementation period of the project and will be sent to AE for review.	Various dates
Cracks at roof of pump room		WISE states that they have no safety concerns regarding the cracks.  WISE (KREDO's) report on roof cracks was sent to WISE AE	7 Oct 2014
Warranty of waterproofing as applied		WISE have requested this from Subcontractor. Letter as per above is under preparation by CSC.  Waterproofing Testing done and succeeded on 30 Oct. 2014.	
Revised BOQ		The revised BOQ was done with aipc9.	31 March 2015
<b>E. Submittals</b>			
Submittals Schedule	100%	Submitted and verified by WISE	7 Mar 2014
Sub-Subcontractors	100%	Design review (EM engineer) – approved by WISE  Warehouse subcontractor - approved by WISE  No other subcontractor is envisaged.	8 Apr 2014  6 Jun 2014
Shop drawings (anticipated/accepted)	100%	(11/11) Civil and Site works, in addition to all related drawings.	Various dates (23 March 14 to 29 Oct 14)
	100%	(10/10) Mechanical	Varies (23 March 14 to 29 Oct 14)
	100%	(12/12) Electrical; in addition to all related drawings.	Varies (23 March 14 to 29 Oct 14)
Method statements	100%	Internal Painting – Sub working	11 Jul 2014
	100%	External painting and elevation surface repair Sub working, Pipe welding,	14 Jul 2014
	100%	Waterproofing – and stagnant water repair - sub working	12 Aug 2014
	100%	Sequence of Pumps replacement	3 Oct. 2014
	100%	Block work erection	8 Aug 2014
Materials	100%	All Approved	ongoing

Items	Applicable values / dates	WISE Comments / details	Conclusion/ due dates
Schedule Latest update	N/A	Latest update on 21 Feb. 2015.	TBD
Submittals of daily reports	N/A	On daily basis, verified by supervisor	Daily
Submittals on monthly reports	N/A	11 reports received till end of Feb. 2015	Monthly update
Submittals of test results	N/A	Received on time, no resulting consequences	N/A
Others	N/A	No	N/A
<b>F. Procurement</b>			
Pumps	100%	Material approved  All pumps were delivered to site; All Inspected by WISE, test certificates from manufacturer of pumps received and accepted by WISE.	28 Apr 2014  22 Oct. 2014 (A) 10 Nov. 2014
MCCs	100%	Material approved by WISE. Variation approved by Mission.  Material in factory ready for delivery to site. Testing of MCCs done factory scheduled on 2 Dec. 2014  Delivered to site: 5 Jan. 2015	27 Jun 2014 (A) 30 Jun 2014 (A) 6 Dec 2014 E
ATS	100%	Material approved by WISE. Variation approved by mission  Ordered: 30 June 2014  Delivered to site: 5 Jan. 2015 as above ( with MCCs)	27 Jun 2014 30 Jun 2014 Dec 2014
Surge tank	100%	Material ordered  Expected delivery  Delivered to site : 1 <sup>st</sup> week of Jan. 2015	17/9/2014 20/1/2015
Valves and Mechanical accessories	100%	Material approved by WISE and delivered to site ( all piping, valves, pumps pads, flexible joints, gaskets ...)	10 Sep 2014
Miscellaneous Electrical Items	100%	Delivered: EMT conduits, lighting outdoor lighting, cable trays, electromagnetic flow meters, electrical flow and temperature switches, pressure switches, electrical sensors,	Dec. 2015
Remaining materials	100%	All delivered including firefighting system and tools kit, including the last variation vo13 (new ACB for the transformer) it is completed on 3 August 2015	3 August 2015
<b>G. Progress of works</b>	<b>99%</b>	<b>Minor works remaining as listed in the snag list (installation of an ACB at transformer outlet and rerouting of main cables in transformer and generator rooms)</b>	<b>Started on July 29, 2015</b>
Structural Works for warehouse	100%	100% completed, final inspection completed.	Nov. 2015
Mechanical works	100%	All submittals completed.  All Flow meters, control Valves piping and accessories were installed., Surge tank for Douara installed  Pump Room Ventilation fans installed on 17 March 2015	24 March 2015

Items	Applicable values / dates	WISE Comments / details	Conclusion/ due dates
Electrical installation	100%	100% installation of lighting fixtures and EMT and rigid conduits, cable trays in pump room, 100% install outdoor lighting fixtures, EMT conduits. 100% earthing/grounding. 100% of cable trays installation. 100% of lightning system.  Old electrical panels (ATS, MCCs, MDBs, DP AUX) were dismantled. All new panels were installed	TBD  Starting from 24 Nov 2014 end at 31 March 2015
Pumps installation	100%	All pumps for 4 lines were installed tested and commissioned. Daily log sheet were filled by the subcontractor during the first month of operation to monitor pumps operation. Daily logs are filled now by SLWE operators.	7 pumps on 15 Jan 2015 and 3 pumps on 6 Feb 2015
Site civil works	100%	100% painting coat for internal walls of pump room on 23 March 2015  Applying new plaster to the previously chipped plaster on elevation and external columns of the pump room (100%), external painting of pump building is done. (15 Dec 2014)  Epoxy paint for floor of pumping room completed. Tiling of floor of control room completed on 13 March 2015.  Current: Painting of doors, air louvers, Finishing touchup of paint of walls inside the PS on 23 March 2015.  Tagging of equipment in preparation.	TBD
	100%	Aluminum windows/doors repair, double glazing windows completed in control room, all aluminum windows repair is completed, top roof windows repair 100%	28 Feb 2015
	100%	Screed for water tank roof, waterproofing membrane installed on water tank roof, surface leveled on pump building roof, 100% installation of waterproofing membrane on the Pump Room Roof flashing need some repair, need flooding test, and installation of the roof drains. Demolition of 3cm from the slab on grade inside the pump room 100%),	30 August 2014
	100%	Guard house rehabilitated	20 May 2014
Testing & commissioning	100%	Tested and commissioned: All electrical and control panels, all sensors , all electrical switches, flowmeters, and all pumps of Douara, Kafra, Jabal Amel and Majadel lines and control valves.  Electrical Generator was brought to site for testing of electrical current.	January 2015
O&M manual		O&M manual rev 2 is being finalized by CSC. Revised and approved by WISE, accepted by KREDO and handed over to the operators, Tyre office and to SLWE.	
Training Sessions for SLWE operators		Completed. Factory training on electrical panels operations was done at panels' factory in January 2015. 2 <sup>nd</sup> training session on all electromechanical equipment of the pumps station was done on site on 19 Feb. 2015. 3 <sup>rd</sup> training sessions on O&M manuals and their usage was done on 19 March 2015.	
<b>H. Cost</b>			
Original Contract Amount (without VAT)	LBP		
VAT 10% on Original Contract Amount	LBP		

Items	Applicable values / dates	WISE Comments / details	Conclusion/ due dates
Original Contract Amount including VAT	2,351,771,730 LBP		
Revised Contract Amount including VAT	2,351,771,730 LBP		
<b>Variations (Including VAT)</b>			
<u>Approved VOs</u>			
VO #1 - ATS	30,665,943 LBP		27 Jun 14 (A)
VO #2 – Electrical Bypasses	18,034,781 LBP		27 Jun 14 (A)
VO #3 – Douara Surge tank	26,768,571 LBP		executed
VO # 4 – Sewage treatment plant	16,326,687 LBP		executed
VO # 5 – Chipping Openings in pump room roof slab to explore steel reinforcement	745,965 LBP		executed
VO # 6 - Additional dismantling joint	33,507,302 LBP		executed
VO # 7 – Additional quantity of concrete pad for pump bases	8,546,868 LBP		executed
VO # 8 – Jabal Amel dismantle existing pumps and Re-Install	5,072,562 LBP		executed
VO # 9 – Cleaning and Flushing Water Reservoir	1,989,240 LBP		executed
VO # 10 – One additional New Butterfly Valve on reservoir outlet	3,874,045 LBP		executed
VO # 11 – addition of DP-AUX- TV outlet including EMT pipes, RG6, TV outlet	6,025,408 LBP		executed
VO # 12 – UPS New and increase FM@ to 3 KVA and modification to control Panel	6,799,222 LBP		executed
VO # 13 – New MCCB for transformer and incoming cable	48,942,694 LBP		executed
VO # 14 – LED fault on capacitor banks	2,338,145 LBP		executed
VO # 15 – Electrical Spare parts	43,879,891 LBP		Cancelled due to time constraints
VO # 16 – Exchanging on large strainer by 2 strainers	436,201 LBP		executed
VO # 17 – Generator Rental	2,404,463 LBP		executed
VO #18 – Extension to incoming cable from transformer to MCCB	13,175,663 LBP		executed
VO # 19 – Minor Urgent Civil Works	34,165,411 LBP		executed
VO # 20 – Installation of an Inverted Syphon on Jouaya Line	1,542,529 LBP		executed
VO # 21 – Costed time delay	51,359,715 LBP		In process
VO # 22 – Pump operation sequencing	3,302,138 LBP	Request by SLWE management	In process

Items	Applicable values / dates	WISE Comments / details	Conclusion/ due dates
Invoices Certified (to Date) and (Last)		Initial Payment; IPC 1 till IPC 11 (Jan. and March. 2015).	N/A
% from approved Contract Amount	100 %		N/A
Requested amounts not yet certified awaiting			N/A
Unpaid Amounts (pending payment)	5% retainage + VO #21	114,569,135.64 LBP + 51,359,715 LBP Respectively	N/A
Cumulative amount (net amount of work paid to date)	N.A.	2,678,454,751.68 LBP (including. 10% VAT)	

Table 2: Construction Status – Haouch Water Network as of end of September 2015

Items	Applicable Values	WISE Comments / Details	Applicable dates
<b>A. Duration</b>			
Project Duration / completion date	N/A	15 months, 21 March 2014 to 30 June 2015 – extended till 15 August 2015	N/A
Days and % since commencement	94%	480 days of 512 days	N/A
Expected delays (days)	N/A	None to date	N/A
<b>B. Mobilization</b>			
Site possession	100%	Issued to Subcontractor	15 Apr 2014(A)
Site facilities	100%	Accepted by WISE	10 May 2014 (A)
Insurance	100%	Insurance accepted by WISE. Related BOQ item paid totally.	26 Sep 14
QA/QC Plans	100%	Approved by WISE	14 July 2014 (A)
Baseline Schedule	100%	Accepted by WISE	14 Mar 2014 (A)
Testing Laboratories / Agencies	100%	Approved independent laboratories AUB and ACTS labs	May 2014 (A)
On site laboratory	100%	<ul style="list-style-type: none"> <li>Equipment delivered &amp; approved</li> <li>Maintenance &amp; calibration latest done</li> <li>Tests not possible at site lab are done at approved third party labs (ACTS or AUB).</li> <li>Tests carried out outside approved independent laboratories are always witnessed by WISE team, and recorded.</li> </ul>	9 Jul 2014 (A) 10 Sep 2014 (A)
Authorities Permits	100%	Zahleh Municipality BWE Ministry of Public Works Telephone company Electricite De Zahle	24 Apr 2014 (A) 15 Apr 2014 (A) 24 Apr 2014 (A) 20 Mar 2014 (A) 28 Feb 2014 (A)
Coordination	N/A	Continuous with BWE, Municipality and Citizens	N/A
<b>C. HSE</b>			
HSE Plans	100%	Approved by WISE	7 Jul 2014 (A)
Latest monitoring meeting	N/A	On weekly basis, each Monday morning	ongoing
Any reportable	N/A	Vandalism to night safety equipment.  No further incidents recorded.	18 June 2014 (A) 15 Jul 2014 24 Jul 2014 11 Aug 2014
<b>D. Design / feasibility review &amp; construction coordination issues</b>			
Survey existing conditions	100%	Field Work completed, Survey report accepted by WISE	30 Jun 2014 (A)
Letter as per RFP	100%	Received, verified by WISE	8 May 2014 (A)
Resulting revisions / issues			

Items	Applicable Values	WISE Comments / Details	Applicable dates
Required expropriations	100%	Expropriation for the DN 450mm pipe near reservoir: <ul style="list-style-type: none"> <li>- Event first arisen</li> <li>- Item discussed with BWE, BWE proposed modifications to adopt previously lines, this was approved by KREDO &amp; concluded by BWE. BWE sent a letter to WISE with the complete copy of the expropriation file and requesting WISE to use the path that is mentioned in the expropriation. No additional expropriation is required</li> <li>- WISE forwarded the letter to Parallel.</li> <li>- Parallel surveyed the area and identified the path.</li> <li>- WISE approved the new path and related shop drawing</li> <li>- Parallel ordered the required qty of pipes and will start work once pipes are received from factory in Dubai</li> </ul>	2 May 2014  20/09/2014 3 Oct 14 ongoing 10 Dec. 2014 11 Dec. 2014
Water meters selection	100%	<ul style="list-style-type: none"> <li>- Water meters submitted by subcontractor on</li> <li>- BWE requested alternative material / manufacturer, this was evaluated discussed and approved by BWE on</li> <li>- USAID unofficially informed about BWE approval</li> <li>- Approval forwarded to subcontractor ( on 24 Oct. 2014) and material ordered – Expected delivery on mid February 2015</li> <li>- VO will be submitted to AE early next week.</li> </ul>	2 Apr 2014 (A) 14 Apr. 2014  24 Oct. 2014 19 Jan 2015 (A)
Valve chambers	100%	100% of valve chambers shop drawings are submitted and approved by WISE.  Smaller sizes and neck deletion suggested in some instances to suit site conditions, and are treated case by case to date Assessment of the resulting revised quantities are requested from Parallel to be included in the final revised BOQ.	17 July 2014 (A)  Ongoing
Existing pipe between stakes HCXA5 and STB26-N	100%	<ul style="list-style-type: none"> <li>- Existing Pipe to connect to: around 212 m (to which was found to be joined by lead filler and of smaller diameter than supposed (150 mm instead of 200mm). Additional cost of 36 million LBP.</li> <li>- Item concluded. WISE instructed Parallel to proceed with the replacement of this pipe. Additional cost will be paid as re-measurable quantities with unit rates paid as per applicable BOQ rates</li> <li>- Assessment of results in order to include in the re-measured final revised BOQ</li> </ul>	18 Aug. 2014 (A)  1 Sep. 2014 (A)  ongoing
Vandalism of HSE equipment		No claims submitted by the subcontractor so far.	
Excavation & profiles in staircases areas	- -	<ul style="list-style-type: none"> <li>- Staircases areas were crowded with utilities. Notified by subcontractor in design review and constructability report</li> <li>- Proposal for raising profile in staircases to be submitted by Parallel</li> <li>- Kredo reply</li> <li>- Assessment of results in order to include in the re-measured final revised BOQ</li> </ul>	9 May 2014 (A)  16 Oct. 2014  10 Nov. 2014
Existing HDPE loop	- -	<ul style="list-style-type: none"> <li>- Existing HDPE loop detected for possible usage (479 m of DN110 HDPE and 795m of DN 160mm pipe located in Zone 2 to 4) on 26 May 2014.</li> <li>- Item checked technically, and discussed in a technical meeting with Kredo, Parallel and WISE on 6 June 2014. Above Pipes were found acceptable for usage by WISE.</li> <li>- Contractor was informed to use/connect to these pipes</li> <li>- Assessment of results in order to delete these quantities from the re-measured final revised BOQ</li> </ul>	26 May 2014  6 June 2014  ongoing
Additional tertiary distribution lines HDPE, beside ductile iron pipes		Proposed by Parallel during meeting  Shop drawings, BOQ and quantities take off (with resulting prices addition) were submitted by Parallel on 16 Oct. 2014.  Reviewed and approved by WISE and Instruction to Subcontractor to proceed in construction works accordingly	16 Oct 14  10 Nov. 2014
Works executed in private lands		Subcontractor was instructed to investigate	Closed

Items	Applicable Values	WISE Comments / Details	Applicable dates
Revised BOQ		updated and reviewed	To be delivered to BWE along with as built files.
<b>E. Submittals</b>			
Submittal schedule	100%	Submitted on 8 august 2014, verified and approved by WISE.	13 Aug 2014 (A)
Subcontractors	N/A	No subcontractors	N/A
Shop drawings	100%	Total approved 290 DWGs out of required 300 DWGs (, plumbing inside water meters protection boxes ,)	
	100%	Zone 1.	
	100%	Zone 2,	
	100%	Zone 3	
	100%	Zone 4	
	100%	Zone 5	
	100%	Zone 6	
	100%	Connections in valve room to existing reservoir Submitted by Sub , approved by Kredo	14 Nov 14
	0%	Miscellaneous details drawings Expected completion date	NA
Method statements	100%	9 approved from total 9 required method statements.	Jan 2015
Materials	100%	27 approved from total 27 required materials submittals.	N/A
Schedule latest update	N/A	Last update was on 25 June 2015, and approved by WISE. Expected project completion on 15 August 2015	25 June 2015
Submittals of daily reports	N/A	On daily basis, verified by supervisor	
Submittals on monthly reports	N/A	Submitted each Month till end of June 2015, all approved by WISE. No mention of delays in the submitted reports.	Ongoing
Submittals of test results	N/A	Received on time, no resulting consequences	N/A
Others			
<b>F. Procurement</b>	<b>100%</b>		
HDPE pipes	100%	Material approved on 6 May 2014. Required qty 52.5 Km.(Main lines and House connections)  51.2 km delivered / checked by supervisor, all HDPE pipes for main lines has been delivered and installed.  Remaining quantity 1.3 Km for House Connections Locally made and delivered in deferment	03/June/2015

Items	Applicable Values	WISE Comments / Details	Applicable dates
Ductile iron pipes	100%	Material approved on 11 Apr. 2014. Required qty 8778 m revised to 8644 as per updated BoQ. 1 <sup>st</sup> delivery Qty 2227 m 2 <sup>nd</sup> delivery Qty 1188 m 3 <sup>rd</sup> delivery Qty 2079 4 <sup>th</sup> delivery Qty 165 5 <sup>th</sup> delivery Qty 2222 6 <sup>th</sup> delivery Qty 220 7 <sup>th</sup> delivery Qty 544 Total delivered 8644	18-Jul-2014 24-Jul-2014 01-Aug-2014 17-Sep-2014 27-Nov-2014 20- Apr- 2015 9-Jun-2015
Water meters	100%	Material approved. VO submitted and under review by WISE Qty: 4859 Material ordered Delivered on site: 4859 Water Meters	29 Sep 14 (A) 27 Oct 14 (A) 07 Apr 15 E
Earthworks & asphalt materials	100%	Aggregate base course Sand bedding	NA
Manhole covers	100%	Material Approved. Qty:374 Delivered: Qty 374.	31-Jul-2014 16-Oct-2014
Valves	100%	(procured 746 /756 gate valves) Expected delivery for remaining valves: mid Oct2014 Gate Valves is expected to be shipped 17-Oct-2014 PRV delivered Qty 1/1	17-Oct-2014  1-Oct-2014
Water meter boxes	100%	1 <sup>st</sup> delivery of Water Meter Box Qty: 630/1318 - Remaining 688 2 <sup>nd</sup> delivery of Water Meter Box Qty 584/688 - Remaining 104 3 <sup>rd</sup> delivery of Water Meter Box Qty 104/104	23-Sept-2014  25-Nov-2014  24-Jan-2015
<b>G. Progress of works (Overall percentage taking into consideration all trades)</b>	<b>100%</b>	Total pipes lengths executed 44.49 km of 44.49	--
General Items	40%		
Zone 1 (5471 meters)	100%	5471 m (excavated, pipe laying, backfilled, tested & paved)	na
Zone 2 (4774 meters)	100%	4774 m (excavated, pipe laying, backfilled, tested & paved) Pending until the arrangement of the pipe path	na
Zone 3 (3965 meters)	100%	3965 m (excavated, pipe laying, backfilled, tested & paved)	na
Zone 4 (12858 meters)	100%	12858 m (excavated, pipe laying, backfilled, tested & paved)	na
Zone 5 (14126 meters)	100%	14126 m (excavated, pipe laying, backfilled, tested & paved)	na
Zone 6 (4296 meters)	100%	4296 m (excavated, pipe laying, backfilled, tested & paved) This area is finalized	na
Construction of Valves Chambers (control valves, flow meters, air valves...) in all zones (355 valve chambers)	100%	~ 355 out of 355 valve chambers	na

Items	Applicable Values	WISE Comments / Details	Applicable dates
Installation of Customer Water Meters and protection boxes in all zones (4859 water meters)	423%	Installations of Protection Boxes and water meters started in April 2015 1054 Water meter boxes installed to date.	na
Zone 1 (water meters)	NA* : initial data irrelevant	177 Assembly of Water meters boxes started on 23 March 2015. All Meter boxes were fabricated.	
Zone 2 (water meters)	NA	116	
Zone 3 (water meters)	NA	62	
Zone 4 (water meters)	NA	44	
Zone 5 (water meters)	NA	57	
Zone 6 (water meters)	NA	57	
Miscellaneous other items, connections etc....	NA	NA	NA
<b>H. Cost</b>			
Original Contract Amount (without VAT)		As per signed agreement	21 Mar 2014
VAT 10% on Original Contract Amount		As per signed agreement	
Original Contract Amount Including VAT	7,760,794,651 LBP	As per signed agreement	
Revised Contract amount	7,760,794,651 LBP	No modifications to Contract Amount so far	
<b>Variations (Incl VAT)</b>			
<u>Approved VOs</u>	3,300,000 LBP		
VO #1 – Project Sign Board (Incl VAT)	3,300,000 LBP	Approved by Mission	27 Jun 2014
VO #2 – Water meters upgrading	283,379,987 LBP		Executed
VO #3 – Bridge crossing	4,987,581.98 LBP		Executed
VO #4- HDPE pipes combined with ductile iron pipes	38,211,217 LBP		Executed
VO #5 – New Water meter Box size for large diameter meters	NA		Cancelled
VO #7 – New alignment for the 450 mm ductile iron pipe (Saving)	-84,343,752.94		Executed
VO #8 –PVC Pipe sleeve for insulation / protection	6,946,500 LBP		Executed
VO #6 Electromagnetic flow meter rated IP 68 instead of IP67	25,023,690 LBP		Executed
			N/A
% from approved Contract Amount (works completed to date/original contract amount)		84%	N/A

Items	Applicable Values	WISE Comments / Details	Applicable dates
Works completed to date (inc. VAT)		6,523,677,632 LBP (up to IPC# 16 – 29 September 2015)	N/A
Unpaid Amounts (pending payment)	N/A		N/A

**Table 3: Construction Status – Deddeh Water Network as of end of September, 2015**

Items	%	Comments / Details	Date
<b>A. Duration</b>	--	--	--
Project start date	--	--	22 Apr 14
Project Duration/ completion date	na	15 months; 22 April 2014 till 15 July 2015	na
Days and % since commencement	94%	464 days of 495 days	na
Expected delays (days)	na	None to date: no cost extension executed till end of October 2015	na
<b>B. Mobilization</b>	--	--	--
Site possession	100%	Issued by WISE and Accepted by Sub	22 Apr 2014
Site facilities	100%	Accepted by WISE	1 May 2014
Insurance	100%	Insurance accepted for payment by WISE	5 Sep 2014
QA/QC Plans	100%	Revision 1 approved by WISE	26 Aug 2014
Baseline Schedule	100%	Approved by WISE, new revision on 8 Dec. 2014	29 Jul 2014
Testing Laboratories / Agencies	100%	ACTS approved as independent laboratory.	11 Jun 2014
		Ballamand University lab submittal approved by WISE, on condition of WISE witnessing the tests	30 Jun 2014
Authorities Permits – Deddeh Municipality	100%	received	3 Jun 2014
Authorities Permits – WISE Site Use	100 %	received	11 Jun 2014
Coordination		Continuous with NLWE, municipality and citizens, no impacts on progress to date.	On going
<b>C. HSE</b>	--	--	--
HSE Plans	100%	Approved by WISE	15 Jul 2014
Latest HSE monitoring meeting	na	Weekly meetings, each Monday	Ongoing
Any reportable		No reportable during last weeks.	n.a.
Remedial measures for safety violations		Implementing all safety signs, tapes, cones, and nets, new jersey barriers...  Replacing stolen and documenting any stolen items	na
<b>D. Design &amp; feasibility review &amp; construction coordination issues</b>	--	--	--
Survey existing conditions	100%	100% Survey Completed in Zone A, B, C and D.  Zakhem confirmed no encroachment of proposed networks in private land.	30 Jun 2014

Items	%	Comments / Details	Date
Survey Report	100%	Rev 1 submitted by Zakhem on 15 Oct. 2014, Approved by WISE on 22 Oct. 2014	22 Oct. 2014
Letter as per RFP	100%	Design review Letter received from Zakhem highlighting findings and project is constructible.	15 May 2014  TBD
Expropriations clearance	na	Not Applicable	na
Resulting revisions/variatio	na	None to date	na
Existing GRP connection to Fiaa reservoir	100%	The existing pipe was investigated, it cannot be used as is the Subcontractor was requested to remove the GRP pipe and install DI pipe instead. Letter from NLWE received allowing the removal (destruction) of the existing GRP pipe.	30-June-2014
<b>E. Submittals</b>	--	--	--
Submittals schedule	100%	Accepted by WISE	30 Jul 2014
Revised baseline schedule		Submitted by Subcontractor	monthly update
Subcontractors	na	None	na
Shop drawings – Zone A	100%	(24/24) drawings approved	na
Shop drawings – Zone B	100%	(28/28) drawings approved	na
Shop drawings – Zone C	100%	(32/32) drawings approved	na
Shop drawings – Zone D	100%	(26/26) drawings approved	na
Shop drawings for elevated water reservoir	100%	Rev. 1 approved as noted by WISE	11 Sep 2014
Method statements	100%	30/30 method statements submitted and approved  <u>Approved:</u> Tank demolition, field density measurement  structure works(excavation, steel reinforcement concrete casting, backfilling, pipe laying, manholes, Method statements of Field density, dumping, Asphalt road paving, meter installation	On going
Materials	100%	21/21 Approved from total required material submittals	On going
Schedule Latest update	na	updated on the 21 <sup>st</sup> of each month	na
Submittals of daily reports	na	On daily basis, and verified by supervisor	na
Submittals on monthly reports	na	13 reports until end of April 2015, reports verified and accepted by WISE.	na
Submittals of test results	na	Received on time, no resulting consequences.	na
<b>F. Procurement</b>	<b>100%</b>	--	--
HDPE pipes	100%	Material approved. Qty 59.45 km.  59.45 km delivered / checked by supervisor	-- 10 Dec 2014 TBD
DI pipes	100%	Material approved. Qty 7.8 km  delivered to site 7.8 Km	-- 13 Aug 2014
Water meters	100%	approved	TBD
Earthwork materials	100%	Aggregate base course, source approved on 8 July 2014	ongoing
	100%	Sand bedding	ongoing

Items	%	Comments / Details	Date
Manhole covers	100%	Approved (alternate submittal approved on 25 Sep. 2014)	TBD
Miscellaneous mech. items (valves)	100%	Male Adaptor, Stop Valves, Surface Boxes, surface boxes	ongoing
Miscellaneous remaining items	0%		TBD
<b>G. Progress of works (percentage takes into account pipes works, valves chambers construction and water meters installation, water reservoir construction)</b>	<b>100%</b>	<b>In total: 44.9 km out of 44.9 km installed</b>	<b>-</b>
<b>Zone A</b> (7,161 meters of pipe)	100%	Executed 7,161 meters of 7,161 meters	na
<b>Zone B</b> (16,604 meters of pipe)	100%	Executed 16,604 meters of 16,604 meters	na
<b>Zone C</b> (9,750 meters of pipe)	100%	Executed 9,750 meters of 9,750 meters	na
<b>Zone D</b> (11,385 meters of pipe)	100%	Executed 11,385 meters of 11,385 meters	na
<b>Zone A</b> (customer water meters installed)	100%	118	
<b>Zone B</b> (customer water meters installed)	100%	223	
<b>Zone C</b> (customer water meters installed)	100%	55	
<b>Zone D</b> (customer water meters installed)	100%	58	
Number of valves chambers constructed in all zones ( 320 valves chambers to be constructed) 16 cancelled and technically approved	100%	320 control valves chambers installed	
Construction of 200m <sup>3</sup> water reservoir	99%	Fencing and access road	
Settlement of completed lines	Na	Proposal for remedial measures for observed settlement	na
Areas of concern		Verification pits completed in all zones of concerns	
<b>H. Cost</b>	--	--	--
Contract Amount	na	7,036,752,932 LBP (including 10% VAT)	na
Approved VOs	na		TBD
VO# 1: Additional project sign		8,100,000 LBP, Additional Project Signs	Executed
VO # 2: Upgrading of district water meters		33,068,607 LBP	Executed
VO # 3: Saving rerouting		-37,060,135.2 LBP	Executed
VO # 4: upgrading of Customer meters		56,753,736 LBP	Executed
Revised Contract amount	100%	86,880,204.35 LBP	na
Invoices Certified (to Date) and (Last)	na	The initial payment and IPC#01 till IPC# 16 ( September 2015)	na
% from approved Contract Amount (cumulative paid/contract amount)	na	(6,442,716,227/7,036,752,932) 92%	na

Items	%	Comments / Details	Date
Requested Amounts by Subcontractor but not certified due to safety or quality concerns.		Suspensions awaiting improved safety and quality were performed on different IPCs - deducted	
Remaining Amounts (pending payment)	na	594,036,705 LBP	na
Cumulative Amount (net to date)	na	6,442,716,227LBP (inc.10%VAT)	na

Table 4: Construction Status – Kesserouan Villages Meters as of end of September, 2015

Items	Applicable values /dates	WISE Comments / Details	Conclusion / due dates
<b>A. Duration</b>			
Project start date	23 Sep 14 (A)		-
Project Duration	13 M. / 402 days	Starting 23 Sep 2014 till 31 October 2015	
Contractual completion date	22 Sep 15 E	No foreseen delays so far. Extended till 31 October 2015	
Forecast modified completion date	22 Sep 15 E	As per RFP, one completion date is set for the whole project.  BMLWE DG requested to make partial handing over for completed areas, this is under review by WISE for feasibility and impact on project.  This is pending the approval of baseline schedule and the feasibility review and survey.  WISE decision regarding adopting partial taking over.  MOU conclusion with the subcontractor. Due to delays caused by others, Partial taking over is not feasible anymore.	-  2 Oct 14    After 12 Nov
Days and % since commencement	93%	372 days of 402 days	na
Expected delays (days)	na	None to date	na
<b>B. Mobilization</b>			
Site possession	3 Oct. 2014	Letter for site possession was signed by representatives of WISE, Estephan Co. and BMLWE. This letter is dated 3 Oct. 2014 (date of Kick off meeting done at BMLWE)  and a Letter was received from BMLWE allowing works to proceed on site	2 Dec. 2014  5 Nov 14 (A)
Kick off meeting	20 Oct 14 (A)		
Protocol for site delivery	listing steps	WISE & subcontractor to establish protocol for delivery of available materials for installation.  Letter explaining steps to follow for water meters delivery from BMLWE stores, was received from BMLWE on 11/12/2014.  First batch of water meters (Qty. = 660) were received from BMLWE by Estephan on January 2015.  Second batch of water meters (Qty. =400) were received on 24 March 2015.  Third batch (Qty. =1300) was partially received from BMLWE stores (700 pieces) on 11 May 2015, the remaining 600 pieces were received on 28 May 2015.  Fourth batch (Qty. =1300 pieces) were received on 29 June 2015.	15 Nov 14 E
Site facilities		Field offices were rented and were totally furnished. WISE's Site supervisor moved to his office on December 1, 2014.	1 Dec. 2014
Performance Bond	Approved	Submitted to WISE on 10 Oct 14  Accepted by WISE on 20 Oct. 2014	20 Oct. 2014

Items	Applicable values /dates	WISE Comments / Details	Conclusion / due dates
Insurance		Received from Sub, with payment slips evidencing effect of insurance.  Comment to Revise and resubmit by WISE.  Rev1 Approved by WISE	29 Oct 14 (A)  13 Nov. 2014  16 June 2015
QA/QC Plans		Received by Sub on 4 Nov 14  Rev. 2 Approved on 2 Jan 2015	4 Nov. 2014  2 Jan 2015
Baseline Schedule		Baseline Submitted and approved on 30 Dec. 2014.  Last update on 8 June 2015.  New update expected soon.	30 Dec. 2014
Testing Laboratories / Agencies		TBD	
Authorities Permits		The Construction Permit was obtained on 29 Nov. 2014 and submitted to WISE for the Rayfoun Area from the Municipality Head, which is the First Village in which Water Meters Implementation will be undertaken. Meetings with other municipalities in process. Permit from Municipality of Public Works obtained on Dec. 2014. Qleiat and Ajaltoun allowed the construction work verbally.	29 Nov. 2014
Authorities Permits – WISE Site Use		Subject closed after permission of work in the three Municipalities.	
Coordination		Continuous with BMLWE (Mrs. Ghada Rida and Mr. Raymond Zgheib)	
<b>C. HSE</b>			
HSE Plans		Revision 2 approved	17 Dec. 2014
Latest HSE monitoring meeting		Ongoing each week	Ongoing
Any reportable		N.A.	
Remedial measures for safety violations		No violations occurred.	
<b>D. Design &amp; feasibility review &amp; construction coordination issues</b>			
Survey existing conditions		Extended period for submittal accepted permissively by WISE  Design review letter received on 13 Nov. 2014  Replied by WISE to revise & resubmit on 14 Nov. 2014  Rev1. Received on 30 Dec. 2014. To Revise and resubmit. New revision under preparation	

Items	Applicable values /dates	WISE Comments / Details	Conclusion / due dates
Survey Report		Extended period for submittal accepted permissively by WISE. Design review report received on 25 Jan. 2015.	12 Nov 14 E
Letter as per RFP		Extended period for submittal accepted permissively by WISE. Expected on 16 Jan 2015. Constructability report received on 25 Jan. 2015.	12 Nov 14 E
Any required Expropriations / clearance		Approval from Ministry of public works obtained for all villages. Approval of Raifoun and Qleiat municipalities obtained. In process approvals from municipalities of Ajaltoun.	
Resulting revisions/variatio		Addition of Strainers before each water meter based on the request of the BMLWE. VO under preparation.  VO file submitted by the Subcontractor on June 25, 2015. Comments submitted by WISE.  Awaiting Subcontractor's revision	25 June 2015
<b>E. Submittals</b>			
Submittals schedule		Revision 1 accepted on 12 Dec. 2014. Last update on 30 Dec, 2014.	
Baseline schedule		Revision 1 Accepted on 17 Dec. 2014. Last update on 27 April.	
Subcontractors		Not available.	
Shop drawings		In progress. Shop drawings for All water meter boxes sizes reviewed and accepted by WISE.	
Shop drawings – Rayfoun	100%	Shop drawings for water meter boxes and for house connections, drawings submitted on 22 December 2014 and were approved.	
Shop drawings –Qleiat	100%	Shop drawings for water meter boxes and for house connections, drawings submitted on 22 December 2014 and were approved.	
Shop drawings – Ajaltoun	100%	Shop drawings for water meter boxes and for house connections, drawings submitted on 22 December 2014 and were approved.	
Method statements	100%	Submitted and approved on 6 Nov.2014 method statements: (Excavation Related to Pipe Laying )  (Backfilling )  (Cast in-Place Manholes)  (Asphalt Road Paving), steel fabrication, Steel reinforcement. Method Statement- Concrete pavement  Method Statement- steel fabrication  Method Statement- service connection. Standard Proctor	6 Nov. 2014
Materials	100%	Submitted and approved water meter box, ball valves, stop valves, air release valves, HDPE piping, Galvanized pipes and fittings, Project Sign Board, electromagnetic flow meter , reinforcement steel re-bars, manholes covers, surface boxes	On going
Schedule Latest update		Updated Each month, last on 27 April. 2015	

Items	Applicable values /dates	WISE Comments / Details	Conclusion / due dates
Submittals of daily reports		Updated and submitted each working day. The new one expected soon.	On going
Submittals on monthly reports		MR1 received and approved for the period from Sept.2014 to end Feb. 2015. MR2 received and approved for the period to end of March 2015. MR3 received and approved for the period to end of April 2015. MR4 received for the period to end of May. MR5 received Pending final reports	
Submittals of test results		HDPE pipes were tested in factory and witnessed by WISE during 2 <sup>nd</sup> week of Dec. 2014.	
Others			
<b>F. Procurement</b>			
		4800 water meters from BMLWE. Batch 6 (1000 pieces) requested on September, 2015.	
		Galvanized pipes and fittings	
		Ball Valves	
		Water Strainers	
		1324 water meter boxes manufactured and assembled 1324.	
		All needed accessories (pipe adapters, roll bolts, fixing clamps, bolts, ...)	
<b>G. Progress of works</b>	<i>To be installed: 1691 protection boxes, 4691 water meters</i>	<b>87%</b>	
Rayfoun area	To be installed: Total of 333 protection boxes and 678 meters	Installation of water meter boxes has started on Monday 19 January 2015. Totally <b>installed</b> are 327 boxes containing 672 meters. 98% of boxes installed and 99% of water meters installed	
Ajaltoun area	To be installed: Total of 765 protection boxes and 2380 meters	Installation of water meter boxes has started on Thursday June 11, 2015. Totally <b>installed</b> are 568 boxes containing 1845 meters. 74% of boxes installed and 78% of water meters installed	
Qleiat area	To be installed: Total of 593 protection boxes and 1633 meters	Work started in this village on 30 March 2015. Totally installed are 572 boxes containing 1573 meters. 96% of boxes installed and 96% of water meters installed	
<b>H. Cost</b>			
Contract Amount		1,940,802,908 LBP (Inc. VAT)	
Approved VOs			

Items	Applicable values /dates	WISE Comments / Details	Conclusion / due dates
VO #1: Y-Strainer addition	79,510,200 LBP		executed
VO #2: Pipe Thermal insulation	TBC		Under perp.
Revised Contract amount			
Expected additional variations		NA	
Invoices Certified (to Date) and (Last)		Initial payment (10%): 194,080,290 LBP Interim Payment 3: 158,729,565.87 LBP IPC #4: 135,679,194.93 LBP	July 2015 September 2015
Revised Contract Amount including VOs	1,146,572,828	47% paid of total revised	
	Value of De-scoped items: 794,230,080 LBP		
Cumulative Amount paid (net Inc. 10% VAT and Initial payment)		540,243,497 LBP paid to date	

**Annex 4: Sustainability Benchmark Schedule**

**Sustainability Benchmark Schedule – Beirut and Mount Lebanon Water Establishment**

<b>Program Phase</b>	<b>Milestones and indicators to be achieved by BMLWE to ensure project sustainability</b>	<b>Status</b>	<b>Comments</b>
Project identification and design	Identify capital investment priorities and share its updated 5 year business plan, including its strategic objectives and related Performance Improvement Action Plans with their capital investment needs.	Achieved	This exercise was completed during the development of the WISE project selection matrix tool.
	Provide available and related documentation and data in support of the project design such as As-Built drawings and water demands data.	Achieved	
	Commit human resources during consultations, reviews leading to project identification & design.	Achieved	
	Commit to O&M funding requirements in the annual budget planning.	Partially achieved; Ongoing	
	Facilitate and support the development of documentation when required such updated data for quarterly reports and M&E reports.	Partially achieved; Ongoing	
	Confirm engineering soundness of available design.	Achieved	
Project Implementation	Facilitate construction permits in collaboration with the awarded contractor and concerned public entities such as Ministry of Public Works and Transportation (MoPWT) and the local Municipalities.	Ongoing	
	Provide required cooperation and support during data collection for M&E report updates as specified on the WISE-Lebanon Program’s “Performance Indicator Reference Sheets”.	Partially achieved; Ongoing	
	Provide updated customer data to assist household connection process.	Achieved	
	Appoint BMLWE permanent staff for O&M of customer water meters and meter protection boxes to undergo O&M trainings.	On -going	OJT and customer meter reading trainings
	Appoint staff on part-time basis to work hand-in-hand with the WISE-Lebanon supervisor and receive on-the-job training for construction management supervision.	Achieved	
	Provide support and appoint administrative staff to perform customer registration campaigns.	On-going	
	Provide customer oriented incentives for improvement of customer registration rates, service coverage, and disconnection of illegal consumers.	On-going	
Adoption of a two-tiered consumption based tariff with both a fixed charge and a variable charge.	Achieved	Consumption based tariffs adopted and bills issued in similar service areas in Kesserouan.	
Capacity building on implemented capital investment	Commitment by BMLWE to provide related human resources to undergo trainings (on-the-job, courses and Training of Trainers).	Ongoing	
	Appoint BMLWE permanent staff for O&M and to undergo O&M trainings.	Ongoing	
Operation, Maintenance and Post Construction Activities	Commitment by BMLWE in providing/recruiting skilled technicians to properly calibrate, test and maintain the Water Customer Meters, as described in the O&M manual to be developed by the WISE-Lebanon Program for BMLWE.	On-going	

### Sustainability Benchmark Schedule – Bekaa Water Establishment

Program Phase	Milestones and indicators to be achieved by BWE to ensure project sustainability	Status	Comments
Project identification and design	Identify capital investment priorities and share its updated 5 year business plan, including its strategic objectives and related Performance Improvement Action Plans with their capital investment needs.	Achieved	This exercise was completed during the development of the WISE project selection matrix tool.
	Provide available and related documentation and data in support of the project design such as As-Built drawings and water demands data.	Achieved	
	Commit human resources during consultations, reviews leading to project identification & design.	Achieved	
	Commit to O&M funding requirements in the annual budget planning.	Partially achieved; On-going	
	Facilitate and support the development of documentation when required such updated data for quarterly reports and M&E reports.	Partially achieved; On-going	
	Confirm engineering soundness of available design.	Achieved	
Project Implementation	Facilitate construction permits in collaboration with the awarded contractor and concerned public entities such as Ministry of Public Works and Transportation (MoPWT) and Municipalities.	Achieved	All of the construction permits for the Haouch El Oumara project have been obtained by the subcontractor.
	Provide required cooperation and support during data collection for M&E report updates as specified on the WISE-Lebanon Program’s “Performance Indicator Reference Sheets”.	Partially achieved; On-going	
	Provide updated customer data to assist household connection process.	Achieved	
	Appoint BWE permanent staff for O&M of Haouch El Oumara water supply network to undergo O&M trainings.	On-going	
	Appoint staff on part-time basis to work hand-in-hand with the WISE-Lebanon supervisor and receive on-the-job training for construction management supervision.	Achieved	
	Provide support and appoint administrative staff to perform customer registration campaigns.	On-going	
	Provide customer oriented incentives for improvement of customer registration rates, service coverage, and disconnection of illegal consumers.	On-going	
	Adoption of a two-tiered consumption based tariff with both a fixed charge and a variable charge.	Achieved	
Capacity building on implemented capital investment	Commitment by BWE to provide related human resources to undergo trainings (on-the-job, courses and Training of Trainers).	On-going	
	Appoint BWE permanent staff for O&M and to undergo O&M trainings.	On-going	
Operation, Maintenance and Post Construction Activities	Appoint BWE permanent staff for O&M and to undergo O&M trainings.	On-going	Due upon the completion of Haouch El Oumara Water Supply Network Replacement Project

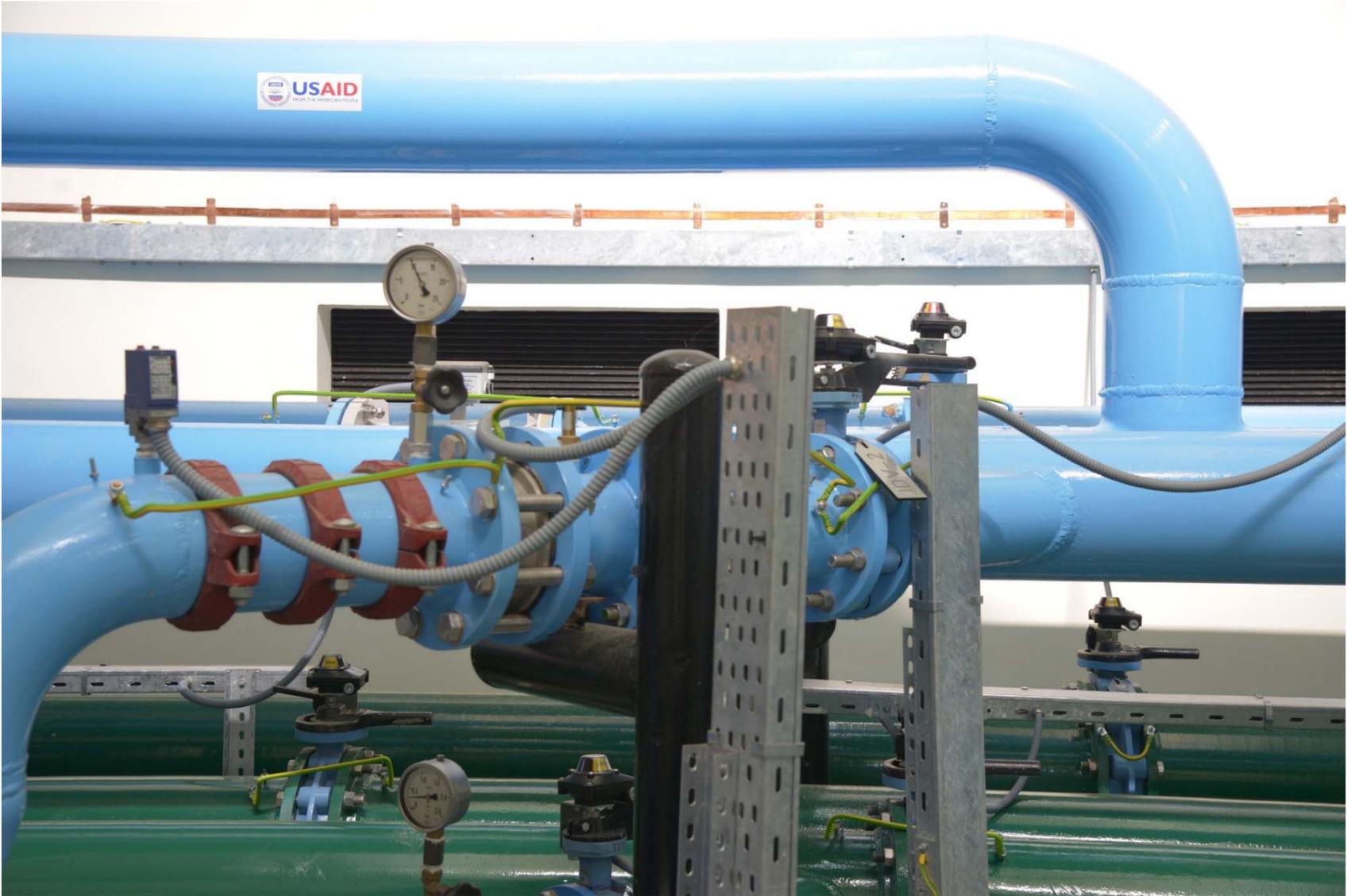
### Sustainability Benchmark Schedule – North Lebanon Water Establishment

Program Phase	Milestones and indicators to be achieved by NLWE to ensure project sustainability	Status	Comments
Project identification and design	Identify capital investment priorities and related Performance Improvement Action Plans with their capital investment needs.	Achieved	This exercise was completed during the development of the WISE project selection matrix tool.
	Provide available and related documentation and data in support of the project design such as As-Built drawings and water demands data.	Achieved	
	Commit human resources during consultations, reviews leading to project identification & design.	Achieved	
	Commit to O&M funding requirements in the annual budget planning.	Partially achieved; On-going	
	Facilitate and support the development of documentation when required such as updated data for quarterly reports and M&E reports.	Partially achieved; On-going	
	Comment on engineering soundness of available design.	Achieved	
Project Implementation	Facilitate construction permits in collaboration with the awarded contractor and concerned public entities such as Ministry of Public Works and Transportation (MoPWT) and Municipalities.	Achieved	
	Provide required cooperation and support during data collection for M&E report updates as specified on the WISE-Lebanon Program's "Performance Indicator Reference Sheets".	Partially achieved; On-going	
	Provide updated customer data to assist household connection process.	Achieved	
	Appoint NLWE permanent staff for O&M of Deddeh water supply network to undergo O&M trainings.	On-going	
	Appoint staff on part-time basis to work hand-in-hand with the WISE-Lebanon supervisor and receive on-the-job training for construction management supervision.	Achieved	
	Provide support and appoint administrative staff to perform customer registration campaigns.	On-going	
	Provide oriented incentives for improvement of service coverage rates, through new customer registration and disconnection of illegal consumers.	On-going	
	Adoption of a consumption based tariff in the Deddeh service area.	Achieved	
Capacity building on implemented capital investment	Commitment by NLWE to provide related human resources to undergo trainings (on-the-job, courses and Training of Trainers).	On-going	
	Appoint NLWE permanent staff for O&M and to undergo O&M trainings.	On-going	
Operation, Maintenance and Post Construction Activities	Commitment by NLWE in providing/recruiting skilled network operators to properly operate and maintain the Deddeh water supply network, as described in the O&M manual to be developed by the WISE-Lebanon Program for NLWE.	On-going	

### Sustainability Benchmark Schedule – South Lebanon Water Establishment

Program Phase	Milestones and indicators to be achieved by SLWE to ensure project sustainability	Status	Comments
Project identification and design	Identify capital investment priorities and share its updated 5 year business plan, including its strategic objectives and related Performance Improvement Action Plans with their capital investment needs.	Achieved	This exercise was completed during the development of the WISE project selection matrix tool.
	Provide available and related documentation and data in support of the project design such as As-Built drawings and water demands data.	Achieved	
	Commit human resources during consultations, reviews leading to project identification & design.	Achieved	
	Commit to O&M funding requirements in the annual budget planning.	Achieved	
	Facilitate and support the development of documentation when required such as updated data for quarterly reports and M&E reports.	Achieved	
	Confirm engineering soundness of available design.	Achieved	
Project Implementation	Facilitate construction permits in collaboration with the awarded contractor and concerned public entities such as the local Municipalities.	Achieved	
	Provide required cooperation and support during data collection for M&E report updates as specified on the WISE-Lebanon Program's "Performance Indicator Reference Sheets".	Achieved	
	Appoint SLWE permanent staff for O&M of Chehabiyeh Pump Station to undergo O&M trainings.	Achieved	
	Appoint staff on part-time basis to work hand-in-hand with the WISE-Lebanon supervisor and receive on-the-job training for construction management supervision.	Achieved	
Capacity building on implemented capital investment	Commitment by SLWE to provide related human resources to undergo trainings (on-the-job, courses and Training of Trainers).	Achieved	
	Appoint SLWE permanent staff for O&M and to undergo O&M trainings.	Achieved	
Operation, Maintenance and Post Construction Activities	Commitment by SLWE in providing/recruiting skilled pump station operators to properly operate and maintain the rehabilitated Chehabiyeh facilities and systems as defined in the O&M manuals to be developed by the WISE-Lebanon Program for SLWE.	Achieved	
	Commitment to perform routine maintenance on the Chehabiyeh pump station systems as described and scheduled in the related O&M manual to be developed by the WISE-Lebanon Program for SLWE.	Achieved	
	Commitment to provide continuous power supply to the newly constructed/rehabilitated facilities through dedicated line connected to EDL.	Achieved	

Chehabiyeh Pump Station Rehabilitation Project



*CPS fully operational- pumps duty and standby*



CPS fully operational - MCC

Haouch El Oumara Water Supply Network Project



*Backfilling of excavated trenches*



*Pipe laying*



*Customer meter installation*



*Asphalt reinstatement works - DWS*

Deddeh Water Supply Network Project



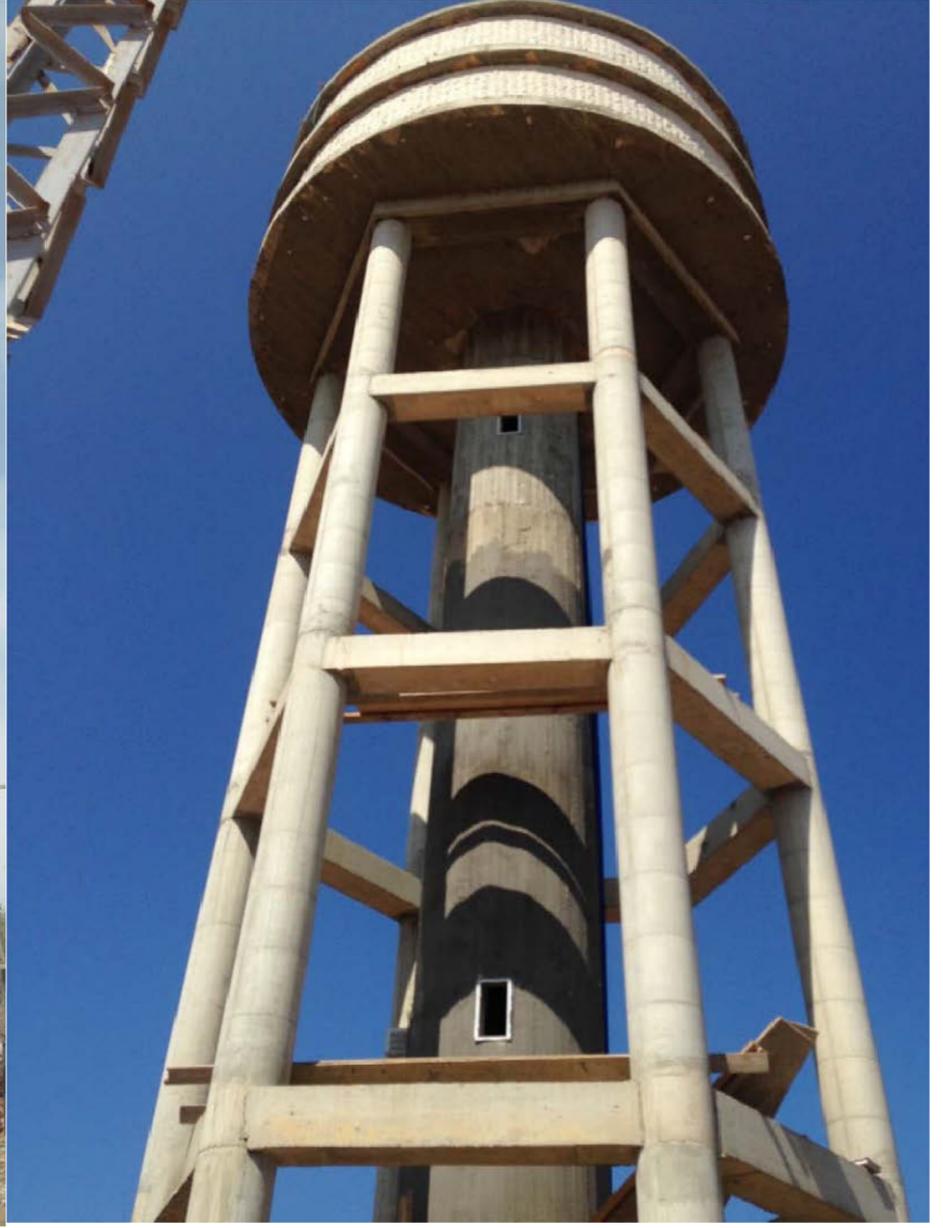
Asphalt pavement reinstatement works - DWS



Asphalt pavement reinstatement works -DWS



*DWS elevated local reservoir – under construction*



*Final stages of construction*



*Access road base coarse reinstatement*



*Reservoir core plastering works*



*NLWE's DG's Visit during construction stage*

**Kesserouan Customer Water Metering Project**



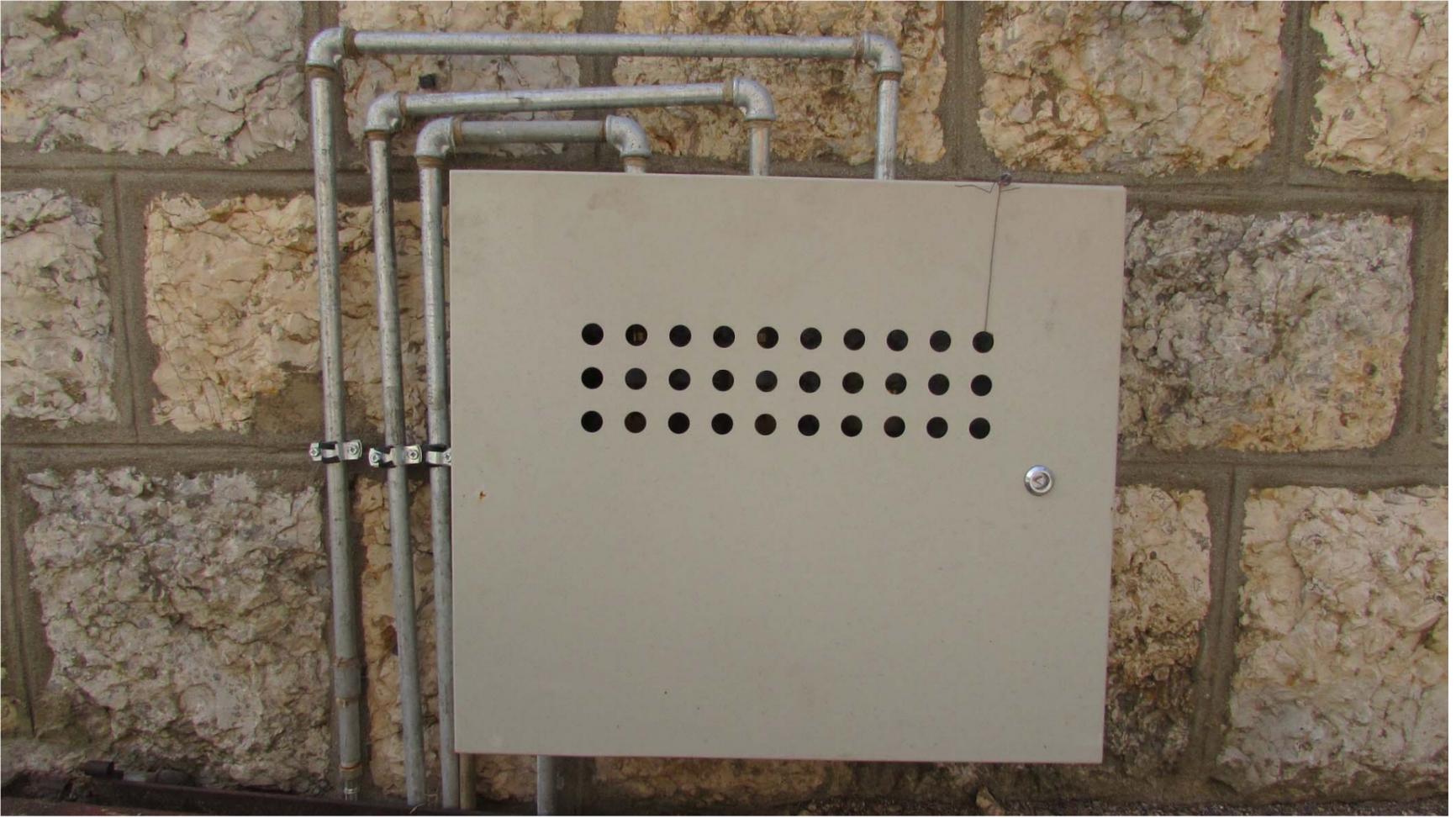
*Installing customer meters and house connections assisted by customers*



*Pre-assembly of standardized 2 customer meters protection boxes*



*Service connection works preparation*



*Installed customer meter boxes with BMLWE seal*