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YEAR 5 WORK PLAN JULY 2012 – SEPTEMBER 2013

EGYPT WATER AND WASTEWATER SECTOR SUPPORT PROGRAM

October 4, 2012

This publication was produced for review by the United States Agency for International Development (USAID). It was prepared by Chemonics International Inc.

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ACRONYMS AND ABBREVIATIONS

AFD	Agence Française de Développement
AUC	American University in Cairo
CC	Cross-Cutting
EIB	European Investment Bank
EU	European Union
EWRA	Egyptian Water Regulatory Authority
FARA	Fixed Asset Reimbursement Agreement
GIS	Geographic Information System
GIZ	<i>Gesellschaft für Internationale Zusammenarbeit</i>
GOE	Government of Egypt
HCWW	Holding Company for Water and Wastewater
HR	Human Resources
ISSIP	Integrated Sanitation and Sewerage Infrastructure Project
IT	Information Technology
IWSP	Improved Water and Sanitation Program
JCESD	Job Creation through Essential Service Delivery
JPDP	Junior Professional Development Program
JICA	Japan International Cooperation Agency
KfW	<i>Kreditanstalt für Wiederaufbau</i>
LWG	Local Working Group
M&E	Monitoring and Evaluation
MARS	Monitoring and Analysis Reporting System
MASTER	Maintenance through Systematic Tracking and Equipment Repair
NOPWASD	National Organization for Potable Water and Sanitary Drainage
O&M	Operations and Maintenance
PDC	Program Development and Coordination
PDP	Professional Development Program
QC	Quality Circle
SS	Subsidiary-Specific
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TOT	Training of Trainers
USAID	United States Agency for International Development
WPRR	Water Policy and Regulatory Reform Project
WWC	Water and Wastewater Company
WWSS	Water and Wastewater Sector Support Project

INTRODUCTION

Chemonics International is pleased to present this Year 5 work plan for the Egypt Water and Wastewater Sector Support (WWSS) Program. The plan covers a 15-month period from July 1, 2012 – September 15, 2013, which includes the final year of the project's activities. The period will run concurrently with the preceding year's plan, overlapping with the pending tasks from Year 4 during the last quarter (July 1 – September 30).

In Section I of this document, we present an overview of the recent developments in the sector and ongoing donor activities, followed by a review of our progress in Year 4. Section II provides a description of our approach to Year 5 activities, and Section III contains the detailed activities for Year 5, including timing and resource allocations. Annex A contains a summary of WWSS activities to date by governorate, and Annex B provides a detailed timeline of work plan activities and tasks. Annex C maps all tasks from Years 1-5 against the deliverables defined in the task order contract.

Program Overview

The USAID-funded Water and Wastewater Sector Support (WWSS) program (2008 – 2013), implemented by Chemonics International, aims at strengthening the capacity of national and regional water and wastewater companies to deliver quality services in a cost-effective fashion. By providing technical support in utility management, the project team is assisting water and wastewater companies to implement recent Government of Egypt reforms aimed at improving operational efficiency and financial performance. To achieve these goals, the project has four key objectives:

- Increase financial and commercial viability of existing water and wastewater companies
- Help establish new regional water and wastewater subsidiaries
- Develop and implement a capital investment planning and program/project monitoring and management mechanism, and
- Build the capacity of staff, increase managerial, technical and operational efficiency, improve the quality of services, and expand access to water and sanitation.

The WWSS strategy to achieve these objectives is built on the following four pillars:

- Business planning as a central management and accountability tool
- Flexibility and prioritization of interventions: customer-driven, flexible, and responsive ability to address urgent priorities as the sector evolves
- Leveraging partners' expertise and the resources of other technical assistance providers, and
- Elevating human resource development and organizational change to strategic levels.

To reach the thirteen subsidiaries¹ in our scope of work, beginning in early 2010, we refined our technical assistance approach to focus on high impact/high return activities, suspending unpromising and/or unsustainable initiatives. As noted in the WWSS Board of Directors meeting held on January 11, 2010, we refocused program activities to concentrate on HCWW and subsidiary priorities in the following key areas:

¹ The original WWSS contract scope of work included 12 subsidiaries: Assiut, Aswan, Beni Suef, Cairo, Daqahliya, Giza, Luxor, Matrouh, Menufiya, Minya, Qena, and Sohag. The 13th subsidiary, the North and South Sinai Water and Wastewater Company, was added through a contract amendment in November, 2010.

- Business planning
- Human resources management and development
- Financial administration
- Capital investment planning and program management
- Unaccounted for water
- Operations and maintenance
- Communications and public outreach

SECTION I: YEAR 4 IN REVIEW

The Holding Company for Water and Wastewater, established pursuant to Public Law 203 of 1991 and Presidential Decree 135 of 2004, oversees the treatment, desalination, transportation, distribution, and selling of potable water, as well as the collection, treatment, and safe disposal of wastewater, for nearly all of Egyptian citizens. With the recent addition of the Qalubiya company and the forthcoming inclusion of the Canal Cities utility, the subsidiaries of the HCWW will soon number 25, serving all 27 of Egypt's governorates, with the single exception of the cities of Port Said, Ismailia, and Suez, where potable water will be supplied by the Suez Canal Authority.

1.1 Developments in the Water and Wastewater Sector

After the tumultuous events of the previous year following the January 25, 2011 revolution and the subsequent unrest, the water and wastewater sector recently experienced a quieter period. The operating environment remains unpredictable, however, so HCWW is necessarily focusing on the near-term and continuing to "wait and see" how the incoming government will tackle the sector. The rural sanitation strategy, for example, which highlights the magnitude of the wastewater management problems facing the sector, remains a top priority, but no progress has been made on finalizing the plans. On the water supply side, though Egyptian officials attempted discussions with the Nile Basin countries following the revolution, discussions have fizzled, no new agreement on allocating the Nile's flow has been reached, and worry is building as Ethiopia moves forward with development of the Renaissance Dam, the largest hydroelectric power facility on the continent. In another sign of the ongoing uncertainty, HCWW cancelled the international water and sanitation conference they had planned for February, 2012 in Cairo. Inside the organization, no major changes were made to the organizational structure or the leadership team, though a number of options were proposed and discussed.

A new subsidiary company, covering the governorate of Qalubiya just north of Cairo, was inaugurated, and another has been decreed but not yet launched for the Canal Cities of Suez, Ismailia, and Port Said, which will bring HCWW's portfolio to 25 companies serving 27 governorates. The subsidiaries continued to experience unrest throughout the year, most of which was labor-related though, in isolated cases, it spilled over to involve the local populations. In addition to seeking permanent contracts, employees demanded increased wages, higher allowances for meals and dangerous work, guaranteed employment for their children, removal of certain senior managers, and other concessions. Most, if not all of the disputes were resolved peacefully albeit more often than not in favor of the strikers, and at a high cost to the operating subsidiaries. These developments prompted several chairmen replacements, including those of the companies in Qena, Daqahliya, Aswan, Fayoum, Damietta, Kafr el-Sheikh, Beheira, and Sharqiya. Significant unrest also occurred among employees in Giza, Cairo, Minya, Sinai, and Assiut, and the latter company's staff prohibited their Chairman from entering the headquarters for days.

Across the board, utilities' operating costs increased as a result of the labor-related concessions. At the same time, collections dropped substantially due to slower economic activity, refusal of customers to pay their bills, and reluctance of collectors to carry large amounts of cash. At the Cairo Water Company, for example, monthly collections dropped from their pre-revolution levels of more than LE 130 million to a low of LE 30 million per month, before rebounding to nearly LE 100 million presently. Since government operating subsidies remain unchanged, the companies face a severe resource shortage, forcing them to decrease spending on maintenance of infrastructure and

equipment and postpone new initiatives and reforms contained in their business plans. HCWW is exploring ideas for income-generating activities to bridge the resource gap, including bottling natural water, and reuse of wastewater for agricultural purposes.

Infrastructure rehabilitation and renovation (R&R), expansion, and new construction projects have also been delayed as a result of a sharp drop in subsidies; the annual R&R fund dropped from LE 1 billion before the revolution to LE 300 million. Similarly, NOPWASD's annual fund for capital investments was cut from LE 14 billion to LE 2.5 billion, and is likely to remain modest in the 2012/2013 GOE budget. Despite the cuts, a select few projects are moving forward, including ongoing work on the water distribution pipeline to New Cairo. None of the proposed public private partnership investments have progressed, though the upgrade to the Abu Rawash wastewater treatment plant in Giza is still being discussed and already has seven firms shortlisted and a ready Request for Proposals. Additionally, the Prime Minister recently announced that the desalination plant intended for Matrouh will be tendered, making it the first of three such projects to be relaunched. The GOE intends to advertise similar projects in the Red Sea and South Sinai governorates to international bidders.

1.2 Donor Project Updates

The water and sanitation sector continues to receive assistance from a number of international donors, of which USAID remains a major contributor.

- Both WWSS and USAID's sister program, the *Water Policy and Regulatory Reform (WPRR)* project, received funding for a fifth and final year, which will run through September, 2013. USAID also continues to use the Fixed Asset Reimbursement Arrangement (*FARA*) mechanism to invest in new large-scale infrastructure in Assiut, Sohag, Beni Suef, Minya, Fayoum, Luxor, New Valley, and Daqahliya, and small-scale, labor-intensive infrastructure in Aswan, Luxor, Qena, Sohag, Assiut, Minya, Beni Suef, and Sinai. WWSS is supporting the latter with project management assistance and previously provided public outreach and education support. USAID's *Livelihood and Income from the Environment (LIFE)* program, which supported three groundwater desalination units in North Sinai, among other community development initiatives, has handed over the plants to the water and sanitation company and is concluding its activities. USAID also recently issued four RFPs locally for work in North Sinai, including one for wastewater reuse.
- The *European Union's Improved Water and Sanitation Program (IWSP I)*, co-funded by GOE, KfW, EIB and AFD, works with HCWW (Lot A, policy support) and four Delta governorates (Lot B, WWCs in Sharqiya, Gharbiya, Damietta and Beheira) to upgrade existing water and sanitation infrastructure, construct new sanitation infrastructure, and build management capacity. Progress to date has been slow at all levels, and no construction work has yet begun. A second phase of IWSP, targeting four upper Egypt governorates (Assiut, Minya, Qena and Sohag), is still planned but not yet contracted. The EU also provides technical assistance to the EWRA, and launched Phase II of this effort in early 2012.
- The *Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)* is active in the sector through its *Water and Wastewater Management Program*, which is now in its second phase providing technical advisory services to HCWW in business planning, HR, training, treatment plant management, and lab certification. They also provide targeted assistance to the Qena company in utility management, and to the Kafr el-Sheikh company on rural sanitation

infrastructure development. Through its InWEnt unit, GIZ is providing HCWW with capacity building and leadership training.

- *Kreditanstalt für Wiederaufbau (KfW)*, the German bank for development, is supporting infrastructure rehabilitation and related procurement to strengthen the performance of operating subsidiaries and improve cost recovery. KfW is the lead financier of the IWSP program profiled earlier, and administers the *Qena Water and Wastewater Supply Project*, which provides institutional and engineering assistance toward increasing cost recovery and rehabilitating infrastructure. KfW also considered providing soft loans to subsidiaries for the purchase of energy efficient technologies for water treatment, though this initiative has not seen any movement in the past year.
- The *Dutch Embassy* launched the *Netherlands Initiative for Capacity Building in Higher Education (NICHE)* program in October, 2011, which aims to deliver more competent technicians to the sector by strengthening technical high schools and utility training centers in four governorates (Beheira, Beni Suef, Cairo, and Menufiya). The inception phase was completed in early 2012 and implementation is underway. In addition to this program, the Dutch Embassy supports the Egyptian-Dutch Panel on Water Management, a bilateral think tank for water issues, now under the banner of their international “Water Mondiale” program.
- The *World Bank* funded *Integrated Sanitation and Sewerage Infrastructure Project (ISSIP)*, also supported by *GIZ* and the *Swiss Embassy*, is providing financing to the sector for wastewater infrastructure. The project is well underway in the Delta governorates of Gharbiya (50% completed), Beheira (20% completed), and Kafr el-Sheikh (currently being contracted). A second phase of the ISSIP program, targeting Sohag, Assiut, Sharqiya, and Menufiya, is designed and currently pending parliamentary approval. A Swiss-led component of ISSIP, *Egyptian-Swiss Research on Innovations in Sustainable Sanitation (ESRISS)* undertakes research and field-testing on small scale sanitation systems in Delta governorates.
- The *Japanese International Cooperation Agency (JICA)* continues its Improvement of Management Capacity in Operations and Maintenance program in three Delta WWCs, focusing currently on the development of standard operating procedures for water and wastewater treatment plants, and on leak detection and reduction activities.
- *UNICEF* is actively involved with HCWW’s Public Awareness division in building capacity within regional utilities in public outreach and communication. They also re-launched the revolving fund to finance house connections in cooperation with HCWW, for which our partner Chemonics Egypt is providing accompanying technical assistance.
- The *Egyptian Social Fund for Development* is active in all the governorates of Egypt, and their water and sanitation portfolio in FY 2011-2012 totaled LE 94 million. It covers the installation of water networks in eight governorates, and wastewater collection infrastructure (house connections, collection lines, and pumping stations) in Assiut, Beni Suef, and Fayoum.

1.3 Review of WWSS Year 4 Activities

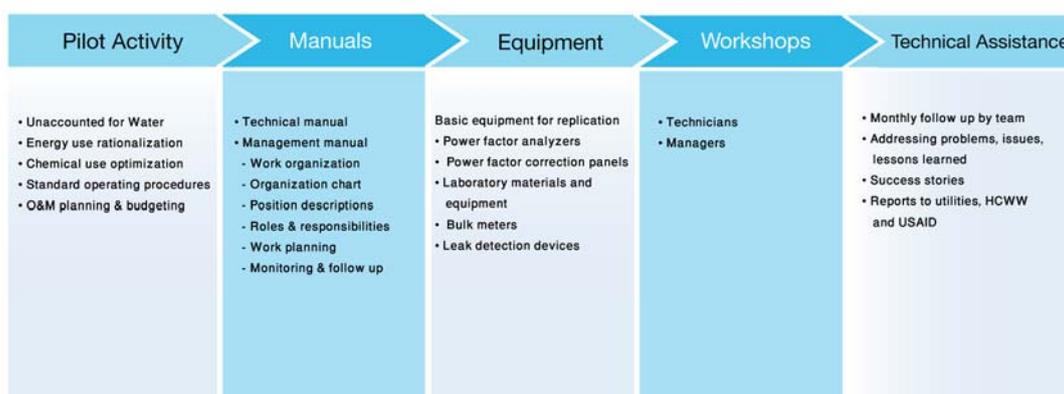
1.3.1 Program Implementation

Our primary focus in Year 4 was on facilitating utility-led replications of high-impact efficiency improvement and cost containment activities in line with their business plans, and, as in Year 3, on building capacity within the companies to sustain these and other activities beyond the WWSS

program. Building on the training of trainers program of Year 3, we worked this year on ensuring that the subsidiary company instructors trained by the Program were carrying out their own training courses, and on monitoring the trainees’ skills application and roll out of pilot interventions. In other words, we were focused on the fourth and fifth stages of the WWSS Technical Assistance Approach illustrated in Exhibit I below.

Following the intensive IT and automation activities of prior years in the areas of financial, HR, maintenance, and program management, our efforts in year 4 concentrated on monitoring system functionality and ensuring, to the maximum possible extent, that HCWW had the capacity to support the systems in the future. In the areas of capital investment planning and program management, we revamped our approach to this task in view of the increased interest of HCWW in having its subsidiaries develop a thorough understanding of the entire project life cycle. The 18-month program included theoretical and practical training on all stages of the project life cycle, from capital investment planning, hydraulic modeling, project tendering, contracting, planning, scheduling, monitoring, and supervision.

Exhibit I: WWSS Technical Assistance Approach



The unrest described in Section 1.1 above touched nearly all governorates of WWSS activity. Though we planned field trips on a monthly basis, we monitored the situation in the governorates on a daily basis and did not hesitate to change field trips as the situation required. For example, when Aswan utility employees staged a prolonged strike at the Company headquarters in January, we suspended our visits to the premises and focused instead on the branch office in Kom Ombo and on technical assistance in other governorates. February saw intense tribal clashes in the region of Qena, and we suspended our travel there until the situation stabilized. This flexibility enabled us to maximize use of project resources in a fluid and unpredictable environment. Equally or more disruptive to activity continuity was the high degree of turnover at the management level in the targeted companies. To minimize the impact of this on program activities, we worked closely with the second and third levels of management via the local working groups, and quickly re-oriented new leadership once they assumed their responsibilities.

1.3.2 Accomplishments

What follows is an overview of the activities implemented in Year 4, including preliminary results and reported impacts.

Subsidiary-driven training in efficiency improvement programs. Following Year 3's successful training of trainers program covering the programs of energy use rationalization, chemical use optimization, and leak detection and reduction, we focused this year on supporting the utilities' internal training programs, aiming to build local cadres to roll out and sustain the programs. Together with our HCWW counterparts, we held training planning workshops for the WWSS-trained instructors from all companies, bringing together WWSS trainees from various companies in the same technical discipline (e.g., chemists) to review previously covered technical training materials, discuss training delivery methods, and design and plan their own, local, training programs. To facilitate roll-out, we made sure to include relevant utility staff in the workshops – including O&M managers, training department managers, and relevant technicians, as appropriate. Following the training planning workshops, our technical and training specialists visited the training recipient companies to monitor local training roll-out, and back-up newly-trained instructors during the initial phases. To date, our team members have observed more than 40 locally-led training courses in which nearly 600 participants received instruction.

Subsidiary-led roll-out of efficiency improvement programs. As a follow on to the previous activity, we provided the seven targeted governorates with advisory assistance as they rolled out their own programs in energy use rationalization, chemical use optimization, and leak detection and reduction. The roll-outs are well underway, though they are progressing at different paces in each governorate. Availability of resources for associated equipment remains the primary hurdle, as all the companies are facing extreme financial distress. In energy use rationalization, the utilities are analyzing their power factor on a regular basis using the WWSS-provided analyzers and training, and select companies have purchased their own corrective equipment – Aswan, for example, purchased and installed four power factor correction panels with Company funds. In chemical use optimization, most of the assisted utilities have applied the approach in multiple plants and are reporting water quality improvement and, in some cases, cost reductions. The Qena Company, for example, has replicated the WWSS pilot in four plants, and is saving more than LE 30,000 monthly on alum for one plant alone. Leak detection roll-outs are also progressing. Minya trainees replicated the pilot in New Minya, reducing water losses from 69% to 32% over a three-month period. We leveraged this success by commissioning their engineers to advise the Aswan and Assiut utilities and assist in leak detection efforts there, and will continue such rotational assistance on a wider scale in Year 5.

Junior Professional Development Program. The JPDP is a selective training and counseling program for promising young professionals in the water and wastewater sector. It aims at attracting, nurturing, and retaining a new generation of personnel in an expanding sector, which is likely to experience large numbers of retirements in the coming decade, by providing them with hands-on experience and broad exposure to various aspects of utility operations. The program, designed and delivered by WWSS staff and consultants in cooperation with HCWW, includes modules on: the legal, regulatory, and institutional framework for the sector; technical and engineering aspects of water and wastewater treatment; quality control and laboratory analysis; planning, finance, IT, and HR; and communications and customer service. Two rounds of the course were delivered during the year for approximately 60 participants from six companies. Demand for the course remains very high, and we will continue it in Year 5 and expand it to include mid-level managers.

Conclusion of the capital investment planning and program management training curriculum. This activity, initiated in Year 3, aimed to equip the subsidiary companies with the knowledge, skills, and tools to plan and manage their own capital investments, which is a priority of increasing concern now that they are managing investments by the EU, World Bank, and USAID. The 18-month program included introductory workshops to present previously produced manuals and standard documents,

along with in-depth training for technical staff on the utilization and updating of master plans, hydraulic analysis, program management tools, and various software applications. Pursuant to the request of HCWW, all 13 WWSS-targeted companies received assistance in capital investment planning, project contracting, and project management using MS Project, and eight companies received training and technical assistance in hydraulic modeling. Following the conclusion of the training courses, WWSS advisors visited each company and provided hands-on assistance with application of the newly-acquired skills, using actual or planned projects to the maximum possible extent. Although the skills acquired were not applied to major infrastructure projects due to limitation of capital investment, some of the trainees had the opportunity to use the newly acquired tools in the course of planning and implementing rehabilitation and expansion projects, and JCESD-funded infrastructure in the eight beneficiary governorates.

Supporting USAID's Job Creation through Essential Service Delivery (JCESD) Program. Initiated in Year 3 in the immediate aftermath of the January 25 uprising, the USAID's JCESD Program uses fixed asset reimbursement agreements (FARAs) with eight regional utilities to fund labor-intensive, small-scale infrastructure projects in Upper Egyptian governorates to create short-term jobs while extending or improving water and wastewater service. WWSS engineers provide project management assistance to the targeted utilities, using the program as an opportunity for on-the-job training of utility personnel in project planning, supervision, management, and reporting. In parallel, we designed and implemented public outreach campaigns in two of the assisted governorates, focusing on themes of water conservation, health and hygiene, and the USAID-utility partnership in improving water and sanitation service in the beneficiary communities.

Training for treatment plant operators. In the second quarter of Year 4, at the request of HCWW and in agreement with USAID, we added to our work plan the development of the remaining training materials for the Operator and Lab Analyst Certification program. Building on the policy-level work completed by the EWRA with support from USAID's WPRR program, we are developing training materials for each certification level of the four curricula. Development of the training program is proceeding at a steady pace, but due to the large number of courses and the ministerial-level reviews and approvals involved, the certification program is not expected to be launched for at least six months. Until it is up and running, and at the request of a number of subsidiary company Chairmen, we designed and implemented an interim training course in the basics of water treatment, covering all technologies and processes involved in water treatment, including laboratory-based quality control processes, and integrating site visits to treatment facilities. The course targets plant managers and their assistants, plant lab supervisors, and company headquarters O&M division staff, and pays particular attention to staff from large surface water treatment facilities. The course was delivered by WWSS instructor Dr. Said el-Kholy three times for participants from ten companies. We also converted the rich training materials into a two-volume reference manual, which we have printed and distributed to all 13 WWSS participating utilities. Two similar volumes covering wastewater management were also sent to these companies ahead of the forthcoming course on the subject later in the summer.

Launch of new laboratory and training facilities. In line with our work plan, we equipped and launched four new facilities in the sector in Year 4: the laboratory at the South Sinai water treatment plant in Gharb el-Nafaq, the Sohag Company headquarters training center, the North Sinai training center in el-Arish, and the South Sinai training center in el-Tor. In the case of the South Sinai plant lab, we provided: a complete suite of laboratory equipment for its chemical, biological, and bacteriological analysis teams; comprehensive technical training covering six courses over eight months; and organizational development assistance in developing a facility organizational chart,

mandate, and individual job descriptions, which has been documented in a manual to be offered to other labs in the sector.

On-site support and backstopping of automation efforts in financial, HR, maintenance, and performance management. WWSS provided ongoing support to the ADVAC financial and/or HR systems in nine companies in Year 3, focusing on ensuring sustained system operation and on liaising between the utilities and ADVAC. To complement this work, we piloted an enhancement of the cost accounting system in one governorate (Assiut), and provided the inventory module to four companies along with a three-phased training and technical assistance program. We will continue to support all ADVAC installations in a secondary capacity, liaising with ADVAC and HCWW representatives as necessary and leaving the primary support function in the hands of the latter. We transitioned to a similar backstopping role with respect to the MASTER and the MARS systems, and worked extensively with our HCWW counterparts to hand over the system code, documentation, and support function. We remain, however, available to troubleshoot complex issues upon request. Our aim this year is to phase out our assistance, so our support moving forward will be coordinated with the HCWW backstopping team and ADVAC representatives.

SECTION II: YEAR 5 IMPLEMENTATION STRATEGY

In what follows, we present the broad outlines of our fifth year Work Plan implementation strategy. As mentioned previously, the fifth year will start on July 1, 2012 and run concurrently with the final quarter of the previous year, as all but a few of the previous year's activities have been completed. The remaining tasks consist of: (a) finalization of the O&M plans in Kom Ombo and Maragha, presently underway, which were delayed due to intermittent labor problems and difficulty in obtaining the needed data in Aswan, (b) facilitation of high-level seminars for utility leaders, which after an initial session in Ain el-Sukhna, focusing on capital investment planning and program management, were interrupted due to our inability to schedule convenient dates to gather holding company and subsidiary executives during the second and third quarters, and (c) completion of the HCWW corporate website because of delays in programming and Arabic-language content preparation.

We intend to reoffer the WWSS-AUC certificate program for utility executives, which was postponed in year four at the request of the Holding Company, with the concurrence of USAID. This was done in order to reallocate funds for development of course material and instructor manuals for levels A, B and C of water and wastewater plant operators and laboratory technicians. Our current plans call for a second iteration of the certificate program in August, following the Ramadan holidays. We also hope to be able to facilitate at least one high-level seminar for HCWW and subsidiary decision-makers before September 30, and to continue with these activities into the final year of the program. The website programming is scheduled for conclusion in late July, but we have no indication yet from HCWW about the status of the Arabic material.

2.1 Focus of Year 5

As the WWSS Program enters year five at reduced level of effort, the representatives of the program, USAID and HCWW held discussions on the directions of the program in its last phase. We decided to continue with our strategy to ensure that all areas of the scope of work and the directives of the WWSS Board of Directors during its January 11, 2010 meeting are addressed, and to maintain our support to the JCESD projects funded under USAID's FARA mechanism. The components of our strategy in year five consist of:

- Assistance to the Holding Company and cooperation with its staff in implementing capacity building and other technical assistance activities among utilities participating in the WWSS Program,
- Cross-cutting tasks for the benefit of all 13 utilities participating in the WWSS Program,
- Subsidiary-specific tasks tailored, as needed, to the unique needs of each of the four utilities targeted by our program in year five, and
- Technical assistance to seven Upper Egyptian utilities and the North and South Sinai Water & Wastewater Company in planning and implementing small scale infrastructure projects under the JCESD Program.

Cross-cutting activities will consist mostly of workshops and refresher courses for mid-level staff, as well as high-level seminars for utility chairmen, using previously developed material. The subsidiary-specific task will concentrate on four utilities not receiving technical assistance from other donor programs, and which are willing to: (a) dedicate resources to WWSS tasks, and (b) sign memoranda of understanding clearly outlining our mutual roles and responsibilities with respect to task implementation. These four subsidiaries consist of the North and South Sinai Water and

Wastewater Company, along with those of Sohag, Assiut-New Valley, and Minya. Minya is more advanced than other WWSS-participating utilities, having benefited from technical assistance under the auspices of USAID's Middle Egypt Utilities Project. With the agreement of its chairman, the Minya subsidiary will serve as hub for a small team of program advisors, and will supplement our resources in carrying out tasks across the district branches. Occasionally, as we did in year 4, we will leverage that subsidiary's resources to implement technical work in other regional companies, and use the utility itself as live laboratory to train Sohag, Assiut and Sinai staff.

With the completion of the pilot projects and our various training programs, our emphasis, over the next twelve months, will be on ensuring that the skills acquired are adequately internalized and applied, and leading to the outcomes sought. In other words, we will be furthering the processes and tools introduced by the WWSS Program into the daily practices of the utilities through previously established Local Joint Working Groups (LWGs). These groups bring together WWSS Program and multidisciplinary local staff to implement and monitor programs derived from the utilities' business plans. Although the effectiveness of the LWGs, as we reported in our quarterly assessments, has been uneven, they played nonetheless important (proactive) roles in initiating cost saving measures and service improvements, and in spreading the practices and tools we introduced utility-wide. The remaining (and most important) challenge, highlighted both in our quarterly assessments and in USAID's independent WWSS Program Evaluation, is to consolidate and institutionalize these practices and tools, and sustain them beyond the completion of our engagement in September 2013. To these ends, we will maintain our original course focusing on:

- Replicating successful interventions in the areas of efficiency improvement and cost containment,
- Building a local cadre capable of providing training and guidance to fellow staff members, occasionally also serving as a technical assistance and training resource to sister organizations,
- Offering the Professional Development Program (PDP), an advanced, multidisciplinary course series modeled after the AUC course, to junior and mid-level staff, aimed at familiarizing them with various aspects of utility operation to facilitate coordination and cooperation, so that everyone reads from the same page, so to speak,
- System automation and integration, including the ADVAC inventory and cost accounting modules introduced last year in four utilities, and second-level support for those systems already handed over to HCWW (MARS and MASTER),
- Procuring and installing select equipment to enable further application of WWSS programs; including laboratory equipment as well as tools for energy use rationalization and leak detection and reduction,
- Documentation of operating procedures, and assistance in developing and implementing performance improvement plans for high-volume plants, and
- Quarterly assessments of the impact of our work, and progress of the four utilities in relation to agreed upon performance targets.

Our 2012-2013 Work Plan calls also for tackling the issue of revenue enhancement, specifically improving the billing systems in the four targeted utilities, and examining ways to increase collection through better routing, scheduling, payment points, and staff incentives.

As in prior years, business planning, organizational restructuring and governance will remain at the core of our technical assistance work. The difference this year is the emphasis being placed on simplifying the business plan document, converting it more to a transitional plan aimed at addressing burning institutional issues and urgent infrastructure maintenance, repairs and rehabilitation, taking into account the current environment and the severe financial constraints facing the water and sanitation companies. To partially alleviate these constraints, we will seek the approval of USAID and the concurrence of HCWW and its subsidiaries, to earmark upward to \$500 thousand from existing contract funds for basic equipment and essential materials required to continue the rollout and continuity of pilot programs initiated in the past years, and implement Work Plan activities.

2.2 Business Planning, Quality Circles, and Performance Management

2.2.1 Joint Planning and Implementation

Midway through Year 5, and in conjunction with training activities, we will facilitate a new business planning exercise to update existing plans in the four targeted utilities, streamlining the documents, focusing them on core business functions, and company priorities in the areas of cost containment and efficiency improvement in the operation and maintenance areas, customer service and revenue enhancement (see 2.2.3 below). In the interim, we will work closely with the LWGs to extract programs from the existing business plans, and jointly rank-order them in terms of their priority and their realism, taking into account available expertise and financial resources. Once ground-truthed and approved by management, they will serve as the basis for joint activity implementation and monitoring.

2.2.2 Quality Circles

As we phase out our activities and progressively downsize our team, more programmatic responsibilities will be shouldered by HCWW and the operating subsidiaries. In the past years, we attempted through the WWSS-AUC advanced seminar series (AUC Program), the Junior Professionals' Development Program (JPDP), and the Training of Trainers workshops (TOTs) to create local cadres, well versed in the various aspects of utility management, including the legal and regulatory environment in which they operate, the departmental mandates, and the roles and responsibilities of fellow staff members. We complemented these with demonstration projects and technical training in a wide array disciplines, and assisted utilities in rolling out programs adapted from our pilots. We also advised senior management on ways to organize work to deliver quality service in a cost effective fashion.

This year, we introduce a simplified version of the concept of Quality Circles (QC), as a means to promote cooperative and creative problem solving, as well inter-departmental collaboration in implementing priority programs. The QCs will go hand-in-hand with our training activities in accordance with the following steps:

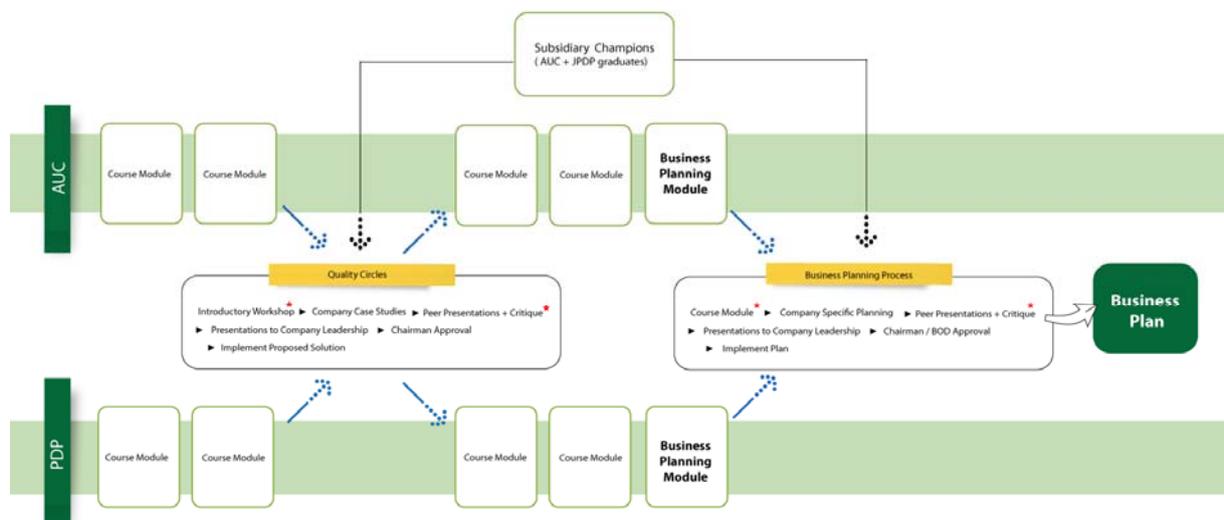
- We will start by competitively selecting utility staff members to participate in our AUC Certificate Program and the PDP on the basis of candidates' CVs, applications, and oral interviews.
- Following the completion of three course modules, we will help the subsidiaries establish their own QCs. The quality circles will consist of utility staff, including all who have undergone training through the PDP, JPDP and the AUC Programs, led by a supervisor (or an

alternate) trained to identify, analyze and solve work-related problems.

- The QC members will work together on devising solutions to problems (or approaches to solve problems), to improve aspects of utility performance, and motivate and guide the work of other colleagues. Using existing business plan priorities as guides, the quality circles may be tasked with looking at ways to improve billing and collection, reduce energy consumption, address occupational health, safety and environmental issues, improve water quality, and organize work and production processes.
- Prior to submitting their solutions to senior management, the QC members will present their proposed approaches/solutions in the workshops to solicit the feedback of colleagues from other utilities and the instructors.
- After obtaining the green light from management to implement their proposed solutions, the members of the quality circles will start implementing their proposed course of action. This will include preparing workflows and written guidelines and/or training manuals as the process advocated may necessitate, reporting forms and progress reports.
- The quality circles will be formalized and meet regularly (at least once a week initially) in the presence of WWSS consultants serving as facilitators.

Once the task completed, the QC members will resume their training, this time focusing, among other subjects, on strategic issues and long-term developmental goals with a view of preparing, in cooperation with non-participating colleagues, *a second, updated edition* of the business plan, along with benchmarks and target indicators. This approach is summarized in Exhibit II below.

Exhibit II: Integration of HR, Quality Circles, and Business Planning



2.2.3 Business Planning

2.2.3.1 Business Planning Exercise

By all accounts, our first business planning exercise was a success, not because of the quality of the final product, but rather for the rigorous efforts of the utility staff behind it. For the first time ever, multiple departments got together to define the long-term strategic goals and shorter-term objectives, taking into account demographic and economic trends, and other considerations. However, the initial plans suffered oftentimes from undue optimism with respect to resources at the disposal of their utilities, and were quite ambitious in setting up their medium-term targets and the programs to achieve them. There were also few examples of cut-and-paste from other completed business plans, based on the naïve belief that the product is in and by itself the ultimate objective. That's why in our fifth year plan, we are stressing simplicity and realism. The document should be short and to the point, clearly acknowledging (without embarrassment) the strengths and shortcomings of the institution authoring it, and given the severe shortage of resources, very succinct in the number of priority programs. Better a modest, feasible, candid and realistic plan than otherwise.

The *second business plan* edition will be discussed in the WWSS-sponsored PDP workshops and AUC seminars and then presented to senior utility management, where it will be vetted before its submission to subsidiary boards, and HCWW. This document is intended to serve, once more, not only as a roadmap to guide the work of the utility over a three- to five-year period, but as a tool for senior management, local boards and HCWW to monitor and assess progress in relation to agreed upon objectives.

2.2.3.2 Performance Indicators

The new updated business plan version will incorporate quantitative performance indicators, with the associated baseline data and annual performance targets. We are presently working with HCWW to select a short list of approximately 10 indicators (see Exhibit III below) to include in the subsidiaries' monitoring program. Beyond this, individual utilities may select and monitor additional indicators, specific to the activities outlined in their plans. The target setting *will be linked to the second business planning exercise*, during which the four targeted utilities will be tasked with collecting historical data on the proposed indicators prior the document drafting. After outlining their programs, the utilities will analyze historical data, establish baselines, consider their planned activities, and set quantitative targets for the common and company-specific indicators for each plan year, beginning with FY 2013-2014 fiscal year. Indicators will measure performance in relation to existing conditions and other historical data and progress towards performance targets over a three-year horizon, using FY 2012–2013 as a baseline year.

Exhibit III: Proposed Common Indicators (tentative)

No.	Indicator	Definition
Financial		
1	Cost recovery (%)	(total revenues) / (total costs, including depreciation)
2	O&M cost recovery (%)	(activity revenues) / (O&M costs (labor, energy, chemicals, and other O&M costs))
3	Percentage of water losses (%)	(volume of water produced – volume of water sold) / (volume of water produced)
4	Collection percentage (%)	(total value collected from current period's bills) / (total billed for the current period)
5	Total cost per m ³	(total costs, including depreciation) / (total production in m ³)
Service		
6	% increase in number of connections	(# of connections in current period – # of connections in previous period) / (# of connections in previous period)
7	% of service coverage - wastewater	(served population with sanitation) / (total population)
8	% of interruptions longer than 12 hours	(number of planned and unplanned interruptions longer than 12 hours) / (total number of interruptions, planned and unplanned)
9	% of water samples complying with standards	(number of chemical, physical, and microbiological samples complying with standards) / (total number of samples analyzed)
10	Number of complaints per 1000 connections	(total number of complaints, water and wastewater) x 1000 / (total number of water and wastewater connections)
11	Average time to resolve complaints	(total number of minutes to resolve complaints) / (number of complaints)

2.2.4 Governance

2.2.4.1 Organizational Development and Governance

In parallel with the business plan updating exercise, we are placing particular emphasis on structural, organizational development issues and corporate governance, starting with multi-level organograms of the companies and their regional subdivisions, description of departmental mandates (including their vertical and horizontal inter-relationships), and position descriptions outlining the roles and responsibilities of staff members and managers.

Corporate governance, i.e., the system by which companies are directed and controlled, and accountability mechanisms will be emphasized. Specifically, we will look at, and try to clarify the roles and relationships between the utilities' management and the goals they pursue, their board of directors, and the Holding Company, as well as their main stakeholders, which include its customers, as well as EWRA and other government entities at the central and sub-national levels.

2.2.4.2 Business Planning and Governance

The completion of the training, organizational restructuring and the redrafting of the business plan (including progress indicators) are essential steps in reengineering the operating utilities. Though immensely beneficial, quality circles represent more of a cultural reorientation rather than a radical reorganization. All the same, they should be institutionalized and continue working beyond the conclusion of our project with a view of streamlining operations and constantly improving systems and processes. Business planning, on the other hand, provides a roadmap and a powerful accountability tool, which brings stability within a company regardless of management changes. They are and should remain (contrary to widespread beliefs) live documents that are periodically updated depending on changing circumstances and shifting priorities. They are now widely accepted as accountability tools for management to assess staff performance, and for the board to track the performance of its chairman. The Holding Company is very keen on formalizing these documents in order to better judge whether a given subsidiary is being responsive to local needs and addressing them.

2.3 Measuring Success

As in past years, we will measure the success of our interventions in the course of field visits, relying on both face-to-face discussions with utility executives to ascertain their satisfaction with the assistance provided, and observations of our team members of the extent of the application of our tools and methods, the quality of technical work undertaken by the utilities, and the benefits they derive. We complement these with quarterly assessments, based on data collected by our staff and indicators extracted from MARS. The aim of all these information gathering efforts is to assess:

- Extent to which WWSS-introduced interventions are being adopted and successfully replicated,
- Implementation and regular updates of business plan programs,
- Institution of human resource development programs,
- Trainees' evaluation of workshops and courses delivered,
- Impacts and cost reductions achieved by them in the areas of energy consumption, chemical use, network system losses, etc.,
- Adoption of financial management and administrative systems, including organization structures, position description, unit level action plans, and
- Timely production of management and financial reports.

Our quarterly progress reports will highlight progress against such measures, along with the impact of activities on service delivery.

2.4 Team Organization

The Chief of Party, Ghassan Nakad, will oversee utility-specific work plans. Deputy Chief of Party and Chief Engineer Ahmed Allam will lead all activities in Upper Egypt, manage the hub in Minya and supervise JCESD efforts. Mrs. Madiha Afifi, Senior Human Resources Development Advisor, will be responsible for our work in North and South Sinai, and oversee the AUC and the PDP programs. She will also facilitate the development of quality circles and the preparation of the second edition of the business plans in the four targeted utilities, and oversee the public outreach and education tasks. Ms. Kathleen Sheridan, Director of Program Development and Coordination, will be responsible for

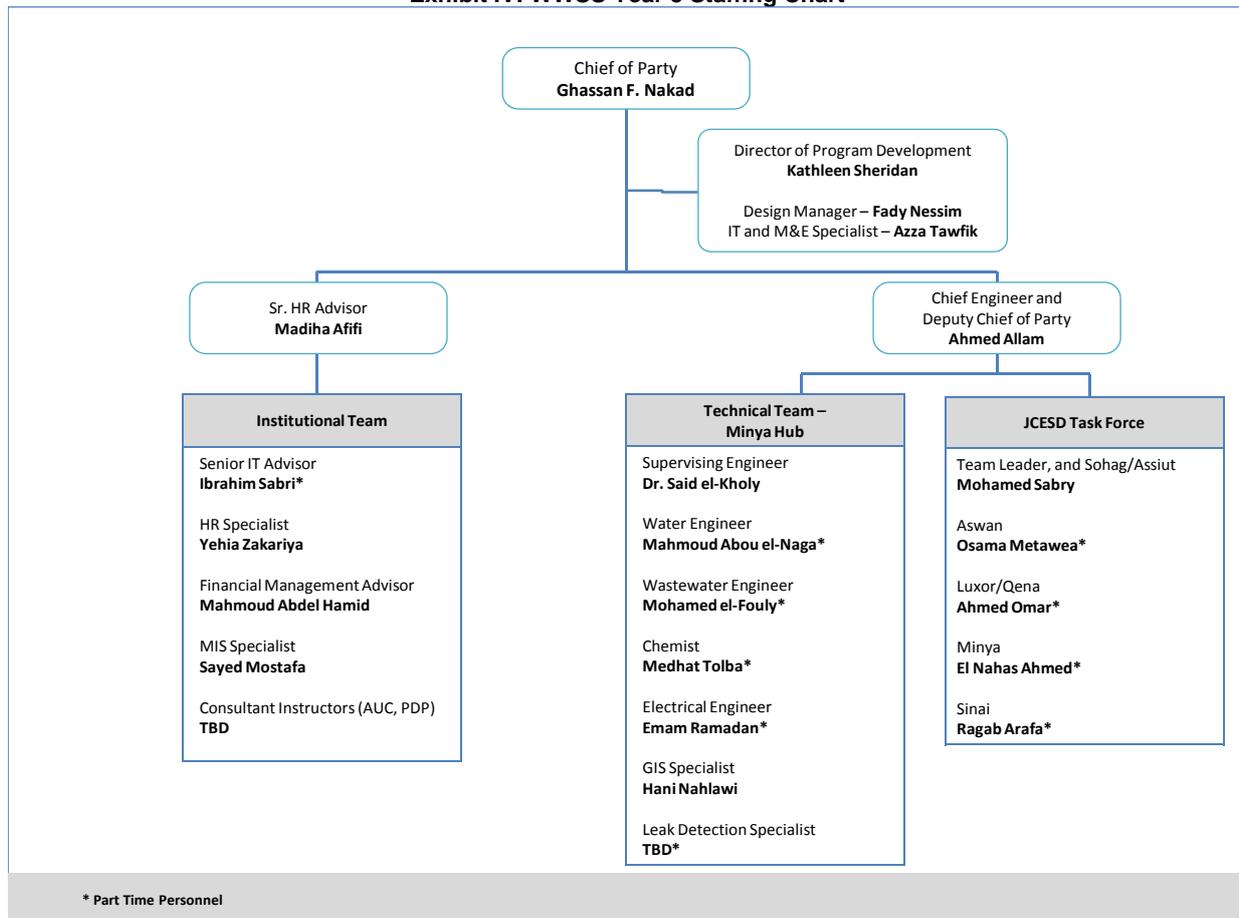
M&E activities, along with report production and communication. Ms. Sheridan will be delegated authority for financial and administrative matters when Mr. Nakad reduces his level of effort to eight days per month (in-country) during the last six months of the WWSS Program.

As Upper Egypt will host most of our work in year five, we will be establishing a hub in Minya, on the premises of the utility’s headquarters. This hub, which will serve that utility in addition to Sohag and Assiut-New Valley, will be staffed by water and wastewater engineers, a laboratory technician, a GIS specialist and water leak detection and repair specialist. The rest of the team, consisting of a construction management, information technology, finance and human resources development specialists will be based in Cairo. Together with the Upper Egypt team, they will assist in implementing the business plan programs proposed in the subsidiaries’ action plans, including the ongoing replication of cost savings measures and efficiency improvement activities launched in Years 2 and 3. Regional teams will share resources for discrete activities, and individual team members may move across regions, as the need arise.

The JCESD Task Force, composed mostly of short-term construction management engineers, will spend the bulk of their time in the participating governorates, which include the four targeted utilities as well as those of Aswan, Qena, Luxor, and Beni Suef, where they will assist local utilities with the small-scale FARA projects.

The WWSS management structure for Year 5 is reflected in Exhibit IV below.

Exhibit IV: WWSS Year 5 Staffing Chart



SECTION III: DETAILED YEAR 5 WORK PLAN

Our activities for the coming year are organized around four components:

1. *Central activities*, targeting the Holding Company and focusing mainly on: (1) assist the Holding Company in its capacity as the main support provider for management information systems supplied by the WWSS Program (MARS, MASTER and ADVAC); (2) installing the new Company website, developed during the past year; and (3), jointly examining options to enhance the revenues of operating subsidiaries, by improving billing and collections.

2. *Cross-cutting activities*, confined mainly to seminars and workshops for utility chairmen and senior staff, along with the drafting of a Chairman's Handbook, consisting of a series of short manuals on various aspects of utility operations and management.

3. *Subsidiary-specific activities*, consisting of: (1) efforts targeting the water and sanitation companies in Sohag, Assiut/New Valley, Minya, and North and South Sinai, driven largely by the programs outlined in their respective business plans, and other priorities identified in the course of our quarterly assessments and regular field visits; and, (2) support to recipient companies under USAID's Job Creation through Essential Service Delivery program. As in past years, the emphasis is on high impact/high return activities, adapted to the needs and situation of each subsidiary. Although LWGs will remain central to our work at the local levels, the quality circles, which we will help establish and mentor, as noted in the previous section, will be tasked with studying problems facing their companies and devising suitable solutions, with a view of implementing the required steps, and monitoring their effectiveness.

4. *Project development and coordination activities*, helping to effectively coordinate, monitor, and communicate progress of WWSS technical assistance.

In what follows, we present our proposed activities. Detailed timelines of the latter can be found in Annex D at the end of this document.

3.1 Central Activities: Assistance to the Holding Company for Water and Wastewater

Activity HC 1 – Provide technical support to USAID-financed management information systems (July 1 – December 31, 2012). In Year 3, we shifted our attention to ensuring sustainability of the MARS, MASTER and ADVAC programs, through system upgrades and training for HCWW and its subsidiaries. In Year 4, we completed the handover of these systems and documentation. Over the remaining life of the WWSS Program, our IT, finance and M&E staff will continue assisting HCWW in troubleshooting the installed systems and their efforts in support of WWSS-installed software in subsidiary companies.

Leads: Engs. Ibrahim Sabry and Sayed Mostafa.

Activity HC 2 – Install the newly upgraded HCWW website (July 1 – December 31, 2012). After experiencing numerous delays, we expect to complete the English-language content and launch a prototype of the site by no later than September 30, when uploading Arabic-language material by HCWW is tentatively scheduled to take place. Over the remaining three months of calendar year 2012, we will train and assist the webmaster(s) on maintaining the site and periodically updating its content.

Lead: Ms. Kathleen Sheridan.

Activity HC 3 – Evaluate options for revenue enhancement (November 2012 – February 2013).

Over the past three years, our cost recovery activities concentrated on the expense-side of the equation, focusing on *low-hanging fruits* in an attempt to lower expenditures through efficiency improvements and O&M savings. We did not, intentionally, spend much effort on billing and collection owing to the lack of indication that the GOE is willing to implement tariff reforms in the short- to intermediate-runs, and a mutual decision to concentrate our limited resources on cost reduction activities that are likely to achieve higher returns within a two- to three-year time horizon. This approach proved to be successful, despite the slow rollout of the programs initiated by WWSS, due to the political turmoil and the redirection of dwindling subsidies to payroll and staff allowances, as explained in the introduction of this document.

As the dust is beginning to settle, we propose to begin exploring options to raise utility revenues, under the existing service pricing constraints, keeping in mind that full recovery of O&M costs is not likely to be achieved without a major overhaul of tariffs. To that end, we propose to conduct a study to examine the whole process of billing and collection, including but not limited to:

1. Service interconnection fees along with meter pricing and terms
2. Meter reading: routing, frequency, and data preparation
3. Data entry and quality control
4. Bill collection: routing, frequency, money handling, and alternative collection points
5. Staff incentives
6. Arrears and penalties for non-payment
7. Meter inspection and repair

Once the study is completed, we will present the results to senior HCWW management along with recommendations for improvement and a timetable for their implementation in the four utilities targeted by the program in year five.

Lead: Eng. Ibrahim Sabri.

3.2 Cross-Cutting Activities

Activity CC 1 – Replicate the WWSS-AUC Utility Management Certificate training program (September 2012 – June 2013). This advanced seminar series for water and sanitation utility executives, designed by the WWSS Program, was successfully implemented in year three in cooperation with the faculty of AUC's Management Center. The nine-module program targets the second layer of leadership and promising managers recommended by their respective institutions and endorsed by HCWW. It aims at deepening the understanding of participants in various aspects of utility management and introducing new concepts and practices to improve day-to-day operations and forward planning. It builds on the experiences and skills already introduced through prior USAID and other donors' capacity building activities, including their curricula, tools, and other resources, combining lectures and exercises with case studies and discussions on issues facing the water and sanitation sector.

The seminar series, currently undergoing final review for formal accreditation as a post-graduate academic diploma program by Egypt's Higher Council for Universities, consists of six or seven modules, offered over a nine-month period and covering the following topics:

- Legal and regulatory framework of the water and sanitation sector
- Organizational development and human resources management
- Strategy development and corporate planning
- Financial management and business analysis
- Customer service and public outreach
- Capital investment, contracting, and outsourcing
- Project and construction management
- Operation and maintenance
- Management information systems and technologies

We will start actively reviewing applications, and interviewing and selecting candidates in early September, and launch this second round of seminars in early October.

Lead: Ms. Madiha Afifi.

Activity CC 2 –Implement Professional Development Program (PDP) (September 2012 – March 2013). This task is a modified version of the Junior PDP, which we offered in FY 2011-2012. It consists of five workshops and lectures over a six-month period, along with site visits led by experienced subject-matter experts from the WWSS Program. It aims at training promising young professionals and mid-level managers, and exposing them to various technical and non-technical aspects of utility management, and PDP seeks also to prepare the participants to assume higher responsibilities in view of the expected large number of expected retirements in the coming decade. The series, which will be offered intermittently over a six-month period, consists of the following modules:

1. Legal and regulatory framework of the water and sanitation sector
2. Engineering aspects of water and wastewater treatment
3. Quality control systems of water and wastewater treatment
4. Corporate planning, financial management and human resources development
5. Communication and customer service

A WWSS panel will competitively select 40 candidates for this program from a variety of academic disciplines ranging from engineering, the social and applied sciences, accounting and finance. Generalists will be recruited as well, especially from human resources and administrative functions. Over the duration of the program, the trainees will work together with our team members on a multitude of case studies, and participate in quality circles aimed at devising solutions to problems facing their utilities, and most importantly, help in preparing the second edition of their companies' business plans, as discussed in Section II, above).

Lead: Ms. Madiha Afifi.

Activity CC 3 – Hold high-level seminars for utility chairmen (Once per quarter). Over the past four years, the WWSS Program has prepared reports, manuals, and guidelines for the benefit of their counterparts at HCWW and its operating subsidiaries. These documents were presented and discussed in different forums and widely disseminated among these institutions. In view of management changes and the feedback received to date, it would be beneficial to reintroduce these materials and give the participants the opportunity to share their views and learn about the experiences and concerns of their colleagues.

The seminars will gather quarterly over a two-day period, and will target the four WWSS utilities of Sohag, Assiut, Minya, and Sinai. The topics presented will range from business planning, financial management and human resources development, to contracting for capital investment projects, rehabilitation and O&M activities, project management, information systems and technology applications, and other subjects of mutual concern.

Seminar leader. Dr. Ahmad Gaber.

Activity CC 4 – Develop a handbook for utility chairmen, board members and senior executives (January – June 2013). One of the most important challenges facing utility officials following the conversion of water and wastewater management services into commercial enterprises is the lack of succinct reference material to guide their day-to-day activities and their forward planning. The proposed handbook, consisting of a compendium of short manuals, aims to fill this gap by clearly outlining the role and responsibility of the chairman of a HCWW subsidiary, and defining his/her role vis-à-vis the board of directors, the general assembly, the Holding Company and other GOE entities involved in the sector, e.g., the ministries of housing, water resources, and public health. It describes also the duties of his/her direct reports, their departmental mandates and position descriptions. Other topics to be covered may include:

1. The legal and regulatory framework governing the water and sanitation sector
2. Budgeting and financial management
3. Human resources management and development
4. Strategy development and business planning
5. Monitoring, evaluation and performance management
6. Management of operation, maintenance and rehabilitation tasks
7. Master Planning
8. Capital investment planning
9. Approach to rural sanitation program development and implementation
10. Program and project management
11. Facility handing over and commissioning
12. Billing and collection
13. Occupational health and safety
14. Emergency management
15. Service delivery alternatives, contracting and outsourcing

The booklets described above will be released in batches, each preceded by presentations to both WWSS Program participating and non-participating utility chairmen, possibly as part of Activity CC 3, above.

Lead: Dr. Ahmad Gaber.

Activity CC 5 – Facilitate workshops on small-scale infrastructure project planning and implementation (July 2012 – December 2013). These bi-annual workshops bring together utility staff members and resident WWSS Program engineers from JCESD-participating governorates (*see also Activity SS 12, further below*). They provide an opportunity to exchange experiences, discuss the tools applied, methods for outsourcing works and monitoring contractor performance. The intent is: (1) to ascertain that the FARA-funded infrastructures are being implemented effectively; and (2) help the utilities adopt proven, sound approaches in project management for GOE-funded infrastructure, particularly rehabilitation and expansion works, as well as capital investments funded by other donors (most government-funded capital investment projects being implemented by NOPWASD).

Co-leads: Engs. Ahmed Allam and Mohamed Sabri.

3.3. Subsidiary-Specific Activities

Activity SS 1 – Support local working groups (LWGs) (ongoing). Our success in institutionalizing these monthly gatherings of departmental utility managers has been uneven in view of the post-uprising working conditions in the subsidiaries. Our quarterly assessments show that inter-departmental coordination among utility managers is weak, and decision-making within the operating subsidiaries tends to take place in a vertical, hierarchical fashion, with most decisions (and problem resolutions) requiring senior management approval, often from the chairman himself. Our aim is to formalize LWGs to promote cross-departmental cooperation be it in planning, implementing and monitoring the priority interventions outlined in their respective business plans. Accordingly, we will attend and assist with facilitation at the initial meetings, and monitor their occurrence thereafter.

Co-leads: Ms. Madiha Afifi (Sinai) and Eng. Ahmed Allam (Upper Egypt).

Activity SS 2 – Establish quality circles (ongoing). While the main purpose of LWGs is to facilitate inter-departmental cooperation among utility managers in planning and implementing needed interventions, quality circles consist of technical staff led by a supervisor trained to identify, analyze and solve work-related problems, and to present their solutions to management in order to improve the performance of the organization and guide the work of their colleagues. Using programs outlined in their business plans, the quality circles will be tasked with looking at ways to streamline procedures and processes as part of an ongoing process of continuous improvement. The subjects to tackle may include billing and collection, energy conservation, occupational health and safety, water quality, wastewater disposal and related environmental issues, and other topics. The solution devised may be of a technical nature and/or organizational focusing on work processes, operating or maintenance procedures and other matters. The concept of quality circles is linked to that of continuous improvement. In other words, solutions devised are not meant to be one-time fixes, but rather appropriate adjustments to current circumstances that will be re-examined and adjusted as necessary in the future.

The PDP and the WWSS-AUC certificate program will introduce the concept of quality circles to participating trainees, and we will orient executives in the four targeted utilities on this approach for problem solving. Ideally, these quality circles should be formalized and continue beyond the end of the project, meeting frequently initially, in the presence of WWSS consultants serving as facilitators.

Co-leads: Ms. Madiha Afifi (Sinai) and Eng. Ahmed Allam (Upper Egypt).

Activity SS 3 – Initiate second business planning exercise (March – June 2013). A great deal of effort will be dedicated during the last quarter of the plan year to the drafting of a new edition of the business plans in the four targeted utilities. As noted in the work plan implementation approach, the emphasis here is on realism and simplicity, prioritizing programs in terms of their urgency *and* the likelihood of achieving high impact in short periods of time, within the limited means of the utilities (once again, the *low-hanging fruits*).

For the purpose of this task, we will assemble participants of both the PDP and the AUC Certificate program for a joint workshop covering the subject of business planning, including the definition of objectives, developing the mission statement, the vision and the mission, conducting rapid SWOT analyses, establishing priorities, and fleshing out programs to be implemented over a three- to five-year horizon. Following the workshop, the participants will return to their respective utilities, where they will cooperate with their colleagues to prepare a draft document to present it and discuss it a few weeks later during a joint PDP-AUC workshop. With the input received from fellow trainees and workshop facilitators, the writers of the individual plans will return to their utilities where they will make one or more presentations, before submission to upper management and their respective boards.

Co-leads: Ms. Madiha Afifi, Eng. Yehia Zakariya.

Activity SS 4 – Oversee and support the rollout of energy use rationalization activities (July 2012 – June 2013). In past years, we facilitated the rollout of these activities through extensive training, complemented with equipment procurement for problem diagnosis and resolution. Subject to availability of funds to purchase needed equipment (see SS 7), we will concentrate, over the remainder of the life of the WWSS Program, on helping utilities roll out successful basic energy efficiency improvement programs piloted in year two and replicated selectively in year three and four. To this end, we will help utilities prepare comprehensive assessments of energy utilization conditions at their treatment plants, prescribe solutions and prepare plans to procure and install new capacitor panels, and (to the maximum extent possible) maintain and fix defective ones. The Holding Company is expecting a soft loan from KfW in 2012 to finance the purchase of energy rationalization equipment, and we will coordinate our activities with these procurements if and when they occur.

Lead: Eng. Imam Ramadan

Activity SS 5 – Oversee and support the rollout of chemical use optimization activities (July 2012 – June 2013). The intent of these activities is not to reduce the cost of chemicals used *per se*, but to optimize their use in water treatment plants in order to improve water quality, increase the efficiency of the treatment process, reduce pressure on equipment, and control costs (when feasible). In year two, the WWSS Program carried out several pilots on chemical use optimization activities, which included studies, dosage adjustments, and equipment calibrations in a number of plants. We followed this in years three and four with a variety of training courses (including material on jar tests, break point tests, adjusting alum pumps and chlorinators, and calibration of water meters), and trained local instructors to create local capability for rolling out the program on a wider basis. We complemented these with purchases of basic equipment and small quantities of chemicals for normal laboratory operations to avoid delays in implementing our tasks. Using instructors trained through our TOTs, we implemented extensive training programs among branch managers and laboratory technicians to provide them with the skills and tools necessary to replicate previously implemented

pilot projects. In this fifth year, we will continue our support to laboratory and plant managers trained by the WWSS Program, and oversee their implementation of facility-specific plans to bring the laboratories to the desired levels from the point of view of equipment, supplies and staffing. Additionally, we will put in place systems for periodic reporting to help the utility monitor water quality and procedures to ensure that these laboratories are adequately provided with chemicals and other needed supplies.

Lead: Chemist Medhat Tolba.

Activity SS 6 – Oversee and support the rollout of water leak detection and network repair activities (November 2012 – August 2013). The replication of leak detection activities in year four was, once again, slower than expected due to lack of counterpart staff and frequent work interruptions. Mid-way through the year, we accelerated the pace of the rollouts by using recently trained utility employees and leveraging of the resources of the Minya subsidiary. We also initiated an inter-company staff rotation program, which allowed less experienced utility staff to work on actual leak detection and network repair projects in sister companies, thus gaining practical skills while helping the host subsidiary. A great deal remains to be done in year five, and we are adding additional in-house technical expertise to speed-up the implementation of local rollouts into additional areas, mainly outside the governorate capitals.

Lead: Eng. Ahmed Allam.

Activity SS 7 – Support subsidiaries in planning and managing O&M Activities (July 2012-June 2013). This task builds on the pilots we conducted in Maragha (Sohag) and Kom Ombo (Aswan), the training programs offered over the past three years, and the other tools developed since the launch of the WWSS Program to improve operation and maintenance of water and wastewater management plants. These tools include:

1. Guidelines on O&M planning and budgeting,
2. Standard operating procedures and illustrated operating instructions for water and wastewater treatment plants,
3. Arabic-language computerized maintenance management system,
4. Training and technical assistance focusing on efficiency improvement and cost containment,
5. Model contracts and instructions for outsourcing O&M work, and procuring services through an indefinite quantity contracting mechanism.

This activity seeks to put in the place the building blocks of a sustainable O&M and facility rehabilitation and management system, along with appropriate operational structures to implement the prescribed systems and procedures among the various water and wastewater treatment plants in the four targeted utilities. Our resident staff will carry out the technical assistance work, complemented by local engineers and technicians dedicated to assist them on a full-time basis, pursuant to the memoranda of understanding, over the duration of the project. The task will be implemented in three phases:

Phase I – Training: Workshops for water and wastewater plant engineers, technicians and laboratory supervisors. This is similar to the three workshops delivered to water plant operators during year four, which consisted of technical lectures and field visits to facilities, covering major O&M aspects of plant operations. In view of the potential number of participants, we will offer in all likelihood one more workshop for water plant operators and two for wastewater operators between now and the end of September.

Phase II – Facility assessments: We will establish two assessment teams in each of the four targeted utilities. Engineers A. Allam and M. Abou el-Naga will lead the water teams, and Dr. S. el-Kholi and Eng. A. Manaf the wastewater teams. Over a period of three months they will survey the largest five water treatment plants and five of the largest wastewater management facilities run by the utility with a view of establishing their general state, and prepare succinct reports on their maintenance and rehabilitation needs, along with low-cost priority interventions that could be implemented within six- to nine-months utilizing the financial resources put at their disposal by HCWW for O&M, rehabilitation and renovation (i.e., not requiring extraordinary funding). This phase should conclude by the end of December.

Phase III – Facility maintenance and repairs: During this last phase, which will extend through the end of the WWSS Program, WWSS-trained utility teams will put in place a performance improvement plans and initiate work on addressing the urgently needed maintenance and repair work, outsourcing to the extent feasible, the rehabilitation works required.

Co-leads: Eng. Ahmed Allam and Dr. Said el-Kholi.

Activity SS 8 – Support automation of select management functions (July 2012 – June 2013). As we phase out our efforts in these areas in year 5, we will confine our role to periodic field visits to inspect installed the various software programs installed and ensure that they are utilized as intended, and support users on an *ad hoc* basis. The programs installed include:

1. The ADVAC financial management and HR systems, including the cost accounting module, which aims to improve the allocation of shared costs, and the inventory control module, installed last year in Sinai, Sohag, Assiut and Matrouh.
2. The MARS monitoring system, and
3. The MASTER computerized maintenance management system.

Though primary responsibility for backstopping these systems on a day-to-day basis will rest with HCWW (see task HC 1), our advisors will coordinate closely with them and be available for assistance when needed.

Co-leads: Mr. Mahmoud Abdel-Hamid and Eng. Ibrahim Sabri.

Activity SS 9 – Assist in the implementation of small-scale infrastructure projects (July 2012 – May 2013). This activity is a continuation of technical assistance and training in support of the continuation of USAID’s Job Creation through Essential Service Delivery (JCESD) Program. This initiative was launched in the spring of 2011 in an effort to minimize the impact of the uprising and the return of workers from Libya earlier that year. It aims to generate immediate employment opportunities, particularly in the affected poor regions, which often happen to be underserved by water and sanitation infrastructure. In consultation with HCWW, the mission approved an initial list of priority, labor intensive projects, with a labor component of 20% to 30%, ranging in value between LE 60 thousand and LE 1.0 million. After targeting initially the governorates of Beni Suef and Sohag, USAID increased the funding to upwards of LE 72 million and added five other Upper Egyptian governorates as well as Sinai. The projects are, for the most part, technically straightforward to implement, requiring short and swift tendering and contracting processes. The works were financed under Fixed Asset Reimbursement Agreements (FARAs), and the WWSS Program provided project management oversight throughout implementation, using this initiative as

a training ground for subsidiary planners and project managers in the water and sanitation utilities of the beneficiary governorates. To this end, we have dedicated a team of construction management engineers to assist the local companies every step of the way. Specifically, our team members provided hands-on technical assistance during the initial stages of project identification, screening, selection and planning of the FARA-funded projects, and subsequent implementation oversight. The team will review and comment on the reports submitted by the utilities to USAID, and report on the quality and timeliness of the projects executed, and their eligibility for funding.

Co-leads: Engs. Ahmed Allam and Mohamed Sabry.

Activity SS 10 – Promote approaches for revenue enhancement (September 2012 – June 2013).

Pursuant to our recommendation to HCWW, and the concurrence of the latter with our assessment of the state and efficacy of billing systems installed at the Sohag and Assiut companies, we will replace the current unreliable software with a basic, yet more robust system, capable of satisfying the needs of the two utilities over the next five to ten years². The billing system has a proven track record, as it is an upgraded version of the one developed by ArabSoft, which has been running in Alexandria for nearly 20 years. The same system has operated also for more than a decade in Sinai, Daqahliya and Luxor, where it was installed under the auspices of USAID’s Secondary Cities Project. Half-way through this activity, we will present our findings of the revenue enhancement study (see task HC 3), discuss with the chairmen of the four targeted utilities the means of implementing its recommendations, and consider implementing select recommendations with one utility.

Lead: Eng. Ibrahim Sabri.

Activity SS 11 – Complete study of North Sinai water infrastructure development plans (October 2012 – December 2012).

At the request of USAID, we will work closely with the Sinai Water and Wastewater Company to conduct an assessment of the existing water supply infrastructure in the governorate of North Sinai. We will examine their current water supply infrastructure, current and anticipated demand, and conduct a comprehensive review of their existing rehabilitation plans and priorities, including related studies and assessments. We will take into account the physical state of all existing facilities (plants and wells), water quality, capacity, storage, transmission and distribution (both via network, by trucks or other means), and document:

- To what extent the facilities are operating as intended and in sufficient quantities to serve the targeted population, and
- What could be done in the short- and intermediate-runs to improve extraction, treatment, storage, and delivery of water to the targeted communities.

The study will describe the needed repairs and rehabilitations, and, in consultation with the local utility, will propose options for system expansion within the resources at the disposal of the North and South Sinai Water and Wastewater Company. USAID intends to use the study to understand the state of the system before considering financing select rehabilitation and/or expansion works.

² The installed billing software in the Sinai and Minya water and wastewater companies are reliable and do not need upgrade.

Lead: Eng. Amgad Ansari.

3.4. Project Development and Coordination Activities

Activity PDC 1 – Monitor, evaluate, and report project progress (Ongoing). Monitoring and evaluation efforts will continue in accordance with the program performance monitoring plan, revolving around 1) the quarterly assessment of participating subsidiaries, and 2) the program performance indicators. Quarterly assessments, focusing on the four targeted subsidiaries, will be summarized in quarterly reports, and will proceed through the fourth quarter (April – June, 2013). The last quarter’s assessment will focus on the collective impact of five years of WWSS assistance, and will serve as an input to the program completion report, to be finalized during the final quarter of the project. The second quarterly report (Oct – Dec, 2012) will also include presentation and analysis of the annual indicator values, drawn from subsidiaries’ audited financials for fiscal year 2011-12 period. We will continue to monitor training events using standardized forms for course attendance and evaluation, report training figures in quarterly reports and in the USAID Train-Net system. We will continue to publish all reports, deliverables, and technical training materials to our in-country counterparts and via our website, and we will circulate our periodic newsletters, success stories, and publication abstracts to stakeholders in Cairo and the participating governorates.

Lead: Ms. Kathleen Sheridan.

Activity PDC 2 – Plan, manage, and report on field trips and training events (Ongoing). We will plan field trips on a monthly basis, and circulate a field trip schedule to USAID, HCWW, and the participating companies. Travel in Upper Egypt will be based out of Minya, and travel to Sinai will be from Cairo. We will encourage partner participation in field work to the maximum extent possible.

Lead: Ms. Kathleen Sheridan

ANNEX A: WWSS ACTIVITIES TO DATE BY GOVERNORATE

WWSS Activities	HCWW Regional Subsidiaries												
	Assiut	Aswan	Beni Suef	Cairo	Daqahliya	Giza	Luxor	Matrouh	Menufiya	Minya	Qena	Sohag	Sinai
Local Working Group	x	x	x			x	x	x	x	x	x	x	x
Training of Trainers (TOT)	x	x	x			x	x	x	x	x	x	x	x
Development and Use of Business Plans	x	x	x			x	x	x	x	x	x	x	x
MARS	x	x	x	x		x	x	x	x	x	x	x	x
Human Resources Management/ Development													
HR Plan Development and Implementation	x	x	x	x		x	x	x	x	x	x	x	x
Staffing and Organizational Development	x	x				x			x			x	x
ADVAC HR	x	x		x		x	x	x			x	x	x
Establish Training Facility												x	x
AUC Seminar Series	x		x	x		x	x	x	x	x	x	x	
Junior Professional Development Program	x		x					x		x		x	x
Capital Investment Planning and Program Management													
PMU Assistance	x					x	x	x	x			x	
PRISM OJT and Training	x	x	x	x	x	x	x	x	x	x	x	x	x
Introduction to ArcGIS	x					x	x		x			x	
Hydraulics Training (Overview and Water CAD)	x		x		x	x	x	x	x	x	x	x	x
Standard Contracting Documents and Related TA	x	x	x	x	x	x	x	x	x	x	x	x	x
Capital Investment Planning Manual and Related TA	x	x	x	x	x	x	x	x	x	x	x	x	x
Planning, Scheduling, and MS Project	x	x	x	x	x	x	x	x	x	x	x	x	x
Project Management of FARA Projects	x	x	x				x			x	x	x	x
Public Awareness and Communications													
Subsidiary Communications Guidelines	x	x	x	x		x	x	x	x	x	x	x	x
Public Outreach Campaign for FARA Projects			x									x	
Financial Management													
Unified Accounting System Training	x					x	x	x	x	x		x	
ADVAC Finance	x					x	x	x				x	x
ADVAC Inventory	x							x				x	x
ADVAC Cost Accounting	x												
Standardized Budget Submission Tools	x	x	x	x		x	x	x	x	x	x	x	x
Operations and Maintenance													
O&M Planning and Budgeting	x	x				x	x		x			x	
Energy Use Rationalization (incl. Technical Training)	x	x	x			x	x	x	x	x	x	x	x
Chemical Use Rationalization (incl. Technical Training)	x	x	x			x	x	x	x	x	x	x	x
SOPs and Operating Instructions	x	x	x			x	x	x	x	x	x	x	x
Leak Detection and Reduction (incl. Technical Training)	x	x	x			x	x	x	x	x	x	x	x
MASTER Computerized Maintenance Management System	x	x	x	x		x	x	x	x	x	x	x	x
Laboratory Training and TA			x			x				x		x	x

ANNEX B: WORK PLAN TIMELINE

Tasks and Sub-tasks	WWSS Responsibilities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Central Activities: Assistance to the Holding Company for Water and Wastewater																
Activity HC 1 – Provide technical support to USAID-financed management information systems	Eng. Ibrahim Sabri															
Activity HC 2 – Install the newly upgraded HCWW website	Ms. Kathleen Sheridan															
Task HC 2.1 – Test English/Arabic sites																
Task HC 2.2 – Incorporate changes from testing and train HCWW users																
Task HC 2.3 – Hand over site to HCWW																
Activity HC 3 – Evaluate options for revenue enhancement	Eng. Ibrahim Sabri															
Task HC 3.1 - Conduct study of billing and collection process in select governorates																
Task HC 3.2 - Present recommendations to HCWW																
Cross-Cutting Activities																
Activity CC 1 – Replicate AUC Utility Management Certificate training program	Ms. Madiha Afifi															
Task CC 1.1 - Recruit and select candidates																
Task CC 1.2 - Implement course for second group of candidates																
Activity CC 2 – Implement Professional Development Program	Ms. Madiha Afifi															
Task CC 2.1 - Recruit and select candidates																
Task CC 2.2 - Implement program																
Activity CC 3 – Facilitate high-level seminars for utility chairmen	Dr. Ahmed Gaber															
Activity CC 4 - Develop a handbook for utility chairmen, board members, and senior executives	Dr. Ahmed Gaber															
Activity CC 5 - Facilitate workshops on small-scale infrastructure project planning and implementation	Eng. Ahmed Allam															
Subsidiary Specific Activities																
Activity SS 1 – Support local working groups	Eng. A. Allam, Ms. M. Afifi															
Activity SS 2 - Establish quality circles	Ms. M. Afifi, Eng. A. Allam															
Task SS 2.1 - Introduce concept and form quality circles																
Task SS 2.2 - Facilitate and monitor quality circles' activity																
Activity SS 3 - Initiate second business planning exercise	Ms. Madiha Afifi															

Tasks and Sub-tasks	WWSS Responsibilities	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Activity SS 4 - Oversee and support rollout of energy use rationalization activities	Eng. Imam Ramadan															
Activity SS 5 - Oversee and support rollout of chemical use optimization activities	Eng. Medhat Tolba															
Activity SS 6 - Oversee and support rollout of water leak detection and network repair activities	Eng. Ahmed Abel Hamid															
Activity SS 7 - Support subsidiaries in planning and managing O&M activities	Eng. Ahmed Allam															
Task SS 8.1 - Conduct training for water and wastewater operators																
Task SS 8.2 - Complete facility assessments																
Task SS 8.3 - Conduct facility maintenance and repairs																
Activity SS 8 - Support automation of select management functions	Mr. M. Abdel Hamid, Eng. I. Sabri															
Activity SS 9 - Assist in the implementation of small-scale infrastructure projects	Engs. A Allam, M. Sabri															
Activity SS 10 - Promote approaches for revenue enhancement	Eng. Ibrahim Sabri															
Install billing system in Sohag and Assiut companies																
Conduct phased training, data entry, and bill processing on new system																
Implement additional revenue enhancement activities, pending approval of recommendations from Activity HC 3 (above).																
Activity SS 11 - Complete study of North Sinai water infrastructure development plans	Eng. Amgad Ansari															
Component D: Program Development and Coordination																
Activity PDC 1 - Monitor, evaluate, and report project progress	Ms. Kathleen Sheridan															
Task PDC 1.1 - Conduct quarterly assessment																
Task PDC 1.2 - Analyze and report annual indicator values																
Task PDC 1.3 - Publish quarterly reports																
Task PDC 1.4 - Prepare completion report																
Activity PDC 2 - Plan, manage, and report on field trips and training events	Ms. Kathleen Sheridan															
Task PDC 2.1 - Prepare and circulate monthly travel schedule																
Task PDC 2.2 - Prepare and submit field trip reports																

ANNEX C: CONTRACT DELIVERABLES MONITORING MATRIX

	Year 1	Year 2	Year 3	Year 4	Year 5 (Planned)
	Nov 08 - Oct 09	Nov 09 - Oct 10	Oct 10 - Sept 11	Oct 11 - Sept12	Jul 12 - Sept12
Component 1: Institutional Support to the Holding Company and Selected Subsidiaries					
9 Subsidiaries: Cairo Water, Beni Suef, Minya, Aswan, Qena, Menufiya, Giza, Matrouh, Luxor, Sinai					
Long-term training plans and training of HCWW and subsidiaries senior and middle managers		HC 12, CC 2, CC 3, CC 5, Beyond 3	CC 1, CC 8	CC 2, CC 4, SS 6	CC 1, CC 2, CC 3, CC 4
A performance based incentive system based on the individual's performance and continuous education efforts			HC 9	HC 2	
Draft business plans for subsidiaries		CC 1, Beyond 1	SS 1		SS 3
Public awareness plans for subsidiaries	√	HC 3, HC 4, CC 6	CC 4, Beyond 2	SS 10	
Service disconnection policy developed and approved	√				
Human resource development plans		HC 6, CC 5, AST 3, GIZ 2, MEN 3, Beyond 3	SS 10, SS 11	SS 4	
A study of outsourcing options and recommendations		Beyond Y2WP 10			
Introduce improved systems including: financial management; budgeting and planning; accounting; metering, billing, and collections; assets valuation and management; staffing; and MIS		HC 5, CC 7, CC 8, CC 11, CC 12, CC 13	HC 6, HC 7, HC 8, CC 2, CC 3, SS 6, SS 8, SS 12	HC 1, SS 5	HC 1, SS 8, SS 10
Develop measures for cost reduction such as chemical and electricity rationalization and identify redundant administrative costs		GIZ 5, MEN 8, MIN 3, Beyond 7, Beyond 8	SS 2, SS 3, SS 4	SS 2, SS 3	SS 4, SS 5, SS 6
Provide training in technical and financial management for the HCWW and subsidiary company staff, including GIS, MIS, SCADA, leak detection, mapping, and asset management.		CC 2, CC 11, CC 12, LUX 1, SOH 9, AST 9, LUX 6, GIZ 8, MEN 7, SOH 10, AST 13, LUX 8, GIZ 10, MAT 3, Beyond 4	HC 6, CC 1, CC 3, CC 8, SS 4, SS 6	HC 1, CC 1, CC 2, CC 3, SS 2, SS 5	HC 1, CC 1, CC 2, SS 6, SS 8
Component 2: Establishment of New Subsidiaries in Selected Governorates					
3 Subsidiaries: Sohag, Assiut, Luxor					
Assessment of existing conditions report covering all institutional areas of w/w systems	√				
Human resource development plan and training plan tied to actual needs		CC 5, AST 3, Beyond 3	SS 10, SS 11	SS 4, SS 6	
Performance-based incentive systems			HC 9	HC 2	
O&M procedures and long term preventative maintenance procedures		AST 11, MIN 4, Beyond 5	SS 5, SS 8	HC 1, SS 11	HC 1, SS 7
Assist HCWW to negotiate with governorate officials to enable HCWW to rationalize staff of the new subsidiaries based on actual requirements					
Develop modern systems and procedures for the operation of the new companies including: planning; financial; organizational and management; MIS; GIS; SCADA; leak detection; asset valuation and management; storage and inventory control; procurement; CIP; program/project management; technical; performance monitoring and evaluation. Build on existing systems, including those funded by USAID		HC 5, CC 7, CC 11, CC 13, CC 14, LUX 1, SOH 9, AST 9, LUX 6, SOH 10, AST 13, LUX 8, GIZ 10, MAT 3	HC 6, HC 7, HC 8, HC 9, CC 2, CC 3, CC 6, SS 6, SS 8, SS 12	HC 1, CC 1, SS 2, SS 3, SS 5	HC 1, SS 6, SS 9, SS 10

	Year 1	Year 2	Year 3	Year 4	Year 5 (Planned)
	Nov 08 - Oct 09	Nov 09 - Oct 10	Oct 10 - Sept 11	Oct 11 - Sept12	Jul 12 - Sept12
Component 3: Capital Investment Planning and Program/Project Management					
12 Subsidiaries: Cairo Water, Daqahliya, Beni Suef, Minya, Aswan, Qena, Menufiya, Giza, Matrouh, Sohag, Assiut, Luxor					
Task 1: Capital investment planning					
Recommendations for finalizing the master planning process and ensuring regular updates	√				
Training of HCWW and subsidiaries staff on master planning and capital investment planning and budgeting		CC 2, CC 18, SOH 10, AST 13, LUX 8, GIZ 10, MAT 3	CC 7, CC 8	CC 1	
Capital investment planning and budgeting manuals		CC 15	CC 7	CC 1	
Task 2: Program and project management					
Resource plans identifying potential suppliers of equipment and services; medium and long-term equipment and service needs; and contractors, consultants, and suppliers database					
Hands-on technical assistance in the preparation of the plans and the execution of the FARA-funded projects (added per Mod 5; Sept, 2011)			SS 9	SS 9	SS 9
Training in project preparation and supervision			SS 9	SS 9	CC 5, SS 9
Reports on the quality and timeliness of the projects executed			CC 6, SS 9	SS 9	SS 9
Operations and maintenance planning methodology		CC 8	CC 3		SS 7
Contractors prequalification and selection guidelines and procedures		CC 16	CC 5	CC 1	
Procedures for establishing dispute resolution boards and operation guidelines		CC 16	CC 5	CC 1	
Site identification and acquisition planning procedures					
Standardized key documents for all steps of procurement, implementation, and evaluation developed and adopted by HCWW and subsidiaries		CC 16	CC 5	CC 1	
Training of HCWW and subsidiaries staff on all aspects of planning and program, project, and construction management		HC 10, CC 2, CC 14, CC 16, CC 18	CC 5, CC 6, CC 8	CC 1, CC 2, CC 3	CC 1, CC 2, CC 5
Component 4: Staff Development / Professionalization					
11 Subsidiaries: Cairo Water, Beni Suef, Minya, Aswan, Qena, Menufiya, Giza, Matrouh, Sohag, Assiut, Luxor					
Human resources development plan for HCWW and select subsidiaries		HC 6, CC 5, AST 3, GIZ 2, MEN 3, Beyond 3	SS 10, SS 11	SS 4	
One HCWW training facility upgraded; equipped; and properly managed to meet world class standards			SS 13	SS 6	
Three study tours to world class water and wastewater facilities in the US conducted over the duration of the project (one per year for 6 persons)		CC 4			
Participation in two international conferences, workshops, or exhibitions in the US (one event per year for 4 persons)		CC 4			
Plans for continuing participation in study tours and international events developed; required funding identified; and plan adopted					