YEAR 4 WORK PLAN
OCTOBER 2011 – SEPTEMBER 2012

EGYPT WATER AND WASTEWATER SECTOR SUPPORT PROGRAM

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ACRONYMS AND ABBREVIATIONS

AFD	Agence Française de Développement
AUC	American University in Cairo
CIP/PM	Capital Investment Planning and Program Management
EIB	European Investment Bank
EWRA	Egyptian Water Regulatory Authority
FaDWaSP	Fayoum Drinking Water and Sanitation Project
FARA	Fixed Asset Reimbursement Agreement
GIS	Geographic Information System
GIZ	*Gesellschaft für Internationale Zusammenarbeit*
GOE	Government of Egypt
GTZ	*Gesellschaft fur Technische Zusammenarbeit*
HCWW	Holding Company for Water and Wastewater
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	*Kreditanstaldt fur Wiederaufbau*
LWG	Local Working Group
MARS	Monitoring and Analysis Reporting System
MASTER	Maintenance through Systematic Tracking and Equipment Repair
MENA	Middle East and North Africa
MHUUD	Ministry of Housing, Utilities, and Urban Development
MWRI	Ministry of Water Resources and Irrigation
NOPWASD	National Organization for Potable Water and Sanitary Drainage
O&M	Operations and Maintenance
PMP	Performance Monitoring Plan
PRiSM	Project Management Information System
SOP	Standard Operating Procedure
TA	Technical Assistance
TOT	Training of Trainers

TSM	Technical Sustainable Management
UAS	Unified Accounting System
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

SECTION I: INTRODUCTION

Chemonics International is pleased to present this Year 4 work plan for the Egypt Water and Wastewater Sector Support (WWSS) Program, prepared in cooperation with its subcontractors, CH2M Hill and Chemonics Egypt. The plan covers the period from October 1, 2011 – September 15, 2012, which is the final year of the project's base period. In Section I, we present an overview of the recent developments in the sector and ongoing donor activities, followed by a review of our progress in Year 3 and an overview of our Year 4 approach and organization. Section II contains the detailed activities for Year 4, including timing and resource allocations. Annex A contains a summary of WWSS activities to date by governorate, and Annex B includes the Year 3 annual assessment results. Annex C provides an overview of Year 4 activities in each governorate, and Annex D provides a detailed timeline of work plan activities and tasks.

A. Program Overview

The USAID-funded Water and Wastewater Sector Support (WWSS) program (2008 – 2012), 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 subsidiaries[1] 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:

- Business planning
- Human resources management and development
- Financial administration

[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.

- Capital investment planning and program management
- Unaccounted for water
- Operations and maintenance
- Communications and public outreach

B. Sector Overview and Developments

Established pursuant to Public Law 203 of 1991 and Presidential Decree 135 of 2004, the Holding Company for Water and Wastewater (HCWW) owns 23 subsidiaries serving 23 governorates. A complementary Presidential Decree in 2004 also established the Egyptian Water Regulatory Agency (EWRA), which along with HCWW reports to the Ministry of Housing, Utilities and Urban Development (MHUUD). Through its subsidiaries, HCWW is responsible for the treatment, desalination, transportation, distribution, and selling of potable water, as well as the collection, treatment, and safe disposal of wastewater.

B.1 Recent Sector Developments

Over the years, the water and sanitation sector had made steady progress, emphasizing the expansion of sanitation coverage, particularly in rural areas, and the promotion of alternative water sources, particularly desalination. The January 25 uprising, however, dwarfed in impact everything that had come before. Despite unprecedented turbulence and the dramatic increase in strikes and demonstrations, the actual delivery of water and sanitation services was only marginally affected. However, the events of January and their aftermath have profoundly impacted the sector on a variety of levels, particularly in the areas of collection and cost recovery.

There was also considerable management turnover in the sector in the wake of the revolution. Former HCWW Chairman Dr. Abdel Kawi Khalifa was appointed as Governor of Cairo in mid-April, and was quickly replaced by General Sayed Nasr, formerly HCWW's Deputy Chairman for Technical Affairs and Capital Investments. General Nasr's extensive experience at HCWW and his positive relations within the Company and externally, made the transition seamless. No new Deputy Chairman for Technical Affairs has yet been appointed.

Work at the Holding Company was also affected. HCWW staff made demands for and received concessions related to permanent tenure, staff incentives, salaries and other benefits. The Company accommodated a number of these requests by transferring temporary contract staff to permanent status, and increasing allowances and fringe benefits.

HCWW was forced to replace many subsidiary chairmen, and most (if not all) HCWW staff seconded to subsidiaries were supposed to return to Cairo. Responding to the revolution, new chairmen were appointed in Aswan, Assiut, Daqahliya, Sohag, Damietta, Beheira, Matrouh, Fayoum, and Qena. These new appointments were in addition to an earlier management reshuffle before the revolution during which 13 new chairmen were appointed. Some of the appointees were drawn from senior leadership positions in other subsidiaries and were able to leverage their experience in handling events in their new governorates. The incoming Qena Chairman, Engineer Mohamed Ali El-Sayed, is a graduate of our utility management program. In Beni Suef, there was a major shake-up in the leadership team, though the Chairman himself retained his post.

Several governorates were impacted in particular by the revolution. In the capital, the Cairo Water Company received significant attention on account of its high profile, the number of people it serves, and its location at the epicenter of the protests. Protests targeted water and wastewater operations and the

structure of the sector, some of which occurred at the gates of HCWW. In Aswan, the army had to intervene during demonstrations by people seeking employment at the utility, forcing the Chairman to resign. Disgruntled staff in Qena organized several sit-ins over salaries and benefits. Security in Sinai was seriously affected in the days and weeks following the uprising, and some direct attacks took place on Company property and installations.

Sector-wide, considerable pressure was exerted on subsidiaries for concessions on working conditions, employment status and tenure, incentives and special allowances, and many cases HCWW and its subsidiaries had to cave in. The situation was exacerbated by the drop in bill collection due to customer reluctance to pay and the fear of collectors to carry large sums of money, leading to a reduction in revenues. These factors are likely to have long-term impacts, especially on cost recovery and service pricing at a time of political uncertainty and dwindling fiscal revenues. They further justify our emphasis on cost saving and efficiency improvement activities in the O&M areas, through improved management, energy use rationalization, chemical use optimization, water conservation, and reducing the amounts of unaccounted for water, especially through water leakage.

The January 2011 uprising also impacted ongoing negotiations with upstream neighbors within the Nile basin. In a remarkable about-face in policy, turning back decades of antagonistic rhetoric, Egyptian Prime Minister Sharaf visited Ethiopia, promising dialogue and cooperation in the long-running dispute over the allocation of Nile waters. In return, Ethiopia agreed to delay the ratification of a treaty developed by it and other upstream Nile riparian countries removing Egypt from its traditional privileged status concerning the river's flow. The recent split between North and South Sudan also carries potential impact for Egypt's water status. Sudan has traditionally sided with Egypt in its discussions with upstream neighbors related to sharing the Nile waters. South Sudan's position is less clear, and there is a risk that the new country may side with its upstream neighbors on issues of sharing Nile waters.

B.2 Institutional Developments

The events of January have also slowed progress on a range of sector initiatives. The draft water law is still pending; and the rural sanitation strategy has yet to be finalized. Operator certification initiatives are stalled within both HCWW and EWRA. Recently appointed Minister of Housing El-Baradei is focusing his attention mostly on housing issues.

Through the end of last year, the sector had invested considerable energy in expanding water supply through desalination initiatives. The GOE prepared several tenders for desalination plants in seaside governorates, and HCWW co-sponsored a major workshop on desalination technology, attended by international experts and potential international investors. It remains to be seen whether Egypt will maintain its commitment to this desalination strategy post-revolution.

Around Cairo, water and wastewater investments continue to be made. A pipeline supplying Nile water to New Cairo is currently underway, and a similar project to 6th of October has been announced. Two new BOT wastewater plants are also under development, with contracts awarded in New Cairo and currently being bid for 6th of October. Existing wastewater plants in Abu Rawash and Helwan are currently slated for upgrades, but the tendering process is moving slowly in the uncertain climate following January 25.

Following the success of HCWW's first International Conference and Exhibition on Sustainable Water Supply and Sanitation (SWSSC 2010), in July 2010, planning is underway for SWSSC 2012 in February 2012. The conference aims to foster a network of water and wastewater professionals worldwide, and provide a platform for exchange between engineers, scientists, and regulators with an interest in water pollution control, groundwater, innovative treatment technologies, water desalination, wastewater management and reuse options, and sludge application.

Donor project updates. The water and sanitation sector has a long and broad history of donor assistance, to which USAID has been a major contributor.

- The current USAID portfolio of water and sanitation sector projects includes the *WWSS* project, the *Water Policy and Regulatory Reform (WPRR)* project, and a FARA component seeking to invest in new infrastructure in Assiut, Sohag, Beni Suef, Minya, Fayoum, Luxor, New Valley, and Daqahliya. The *FARA* component has been significantly expanded post-revolution, with priority projects initiated in high-poverty governorates around the country targeting small, easy to implement, labor intensive projects expanding and fixing water networks. WWSS is supporting these initiatives through project management and providing public outreach and education in support of these initiatives. USAID's *Livelihood and Income from the Environment (LIFE)* program, which supports community development in north Sinai, includes components related to domestic water provision and use.
- The *European Union* remains engaged on a variety of levels. It continues to provide budgetary support to MWRI and MHUUD, and provides organizational and policy assistance to EWRA. Its *Improved Water and Sanitation Program (IWSP)*, 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). A second phase of IWSP, targeting four upper Egypt governorates – Assiut, Minya, Qena and Sohag, is currently being contracted.
- The newly-branded *GIZ* – a merger of the former GTZ and InWEnt – remains active in the sector through its *Water and Wastewater Management Program*, which provides technical advisory services to HCWW and its subsidiaries, in particular to Qena WWC, and recently began its second phase. The ongoing InWEnt project portfolio continues to provide HCWW with capacity building and leadership training, including through the *Promotion of Capacity Building Institutions (MENA ProCBI)* regional training vehicle. Training priorities include the development and implementation of training programs for senior managers, support for the HCWW Center for Leadership, and long-term institutional training partnerships with expert German institutions.
- *Kreditanstaldt fur Wiederaufbau (KfW)* is supporting infrastructure rehabilitation and related procurement to strengthen the performance of operating subsidiaries and improve cost recovery. KfW is the lead financer 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 provides soft loans to subsidiaries for the purchase of energy efficient technologies for water treatment.
- The *Fayoum Drinking Water and Sanitation Project (FaDWaSP)*, funded by the *Royal Netherlands Embassy*, came to a close after 20 years of assistance in the oasis governorate. The Dutch Embassy continues to support the Egypt/Dutch Water Panel, a bilateral think tank for water issues, soon to be expanded as the "Water Mondiale" program. In addition, they are currently bidding the *Netherlands Initiative for Capacity Building in Higher Education (NICHE)* program that will support HCWW technical schools and training centers in three governorates.
- The *World Bank* funded *Integrated Sanitation and Sewerage Infrastructure Project (ISSIP)*, also supported by *GIZ* and the *Swiss Embassy*, provides a concessionary loan of $120 million to MHUUD. Those funds are subsequently passed on to the HCWW and NOPWASD for investments in wastewater infrastructure in the Beheira, Kafr el-Sheikh, and Gharbiya governorates. A second phase of the ISSIP program has now been launched, providing an additional $200 million for the construction of wastewater infrastructure systems in Sohag, Assiut, Sharqiya and Menufiya.

- A Swiss-led component of ISSIP, *Egyptian-Swiss Research on Innovations in Sustainable Sanitation (ESRISS)* undertakes research and field-testing concerning small scale sanitation systems in Delta governorates.
- *UNICEF* remains involved with HCWW's Public Awareness division in building capacity within regional utilities in public outreach and communication.
- Building on their prior experience in Sharqiya, the *Japanese International Cooperation Agency (JICA)* recently launched a new round of activities in Sharqiya and Menufiya, focusing on the development of standard operating procedures for water and wastewater treatment plants, and on leak detection and reduction activities.

C. Year 3 in Review

In Year 2, our program focused on high-impact interventions through a series of pilot activities. This was followed in Year 3 by the development of tools and capacity within HCWW and its operating subsidiaries to replicate and sustain these interventions into the future. The principal vehicle for this approach were the local joint working groups (LWGs) within each subsidiary, consisting of WWSS advisors and senior utility managers, tasked with jointly planning, implementing, monitoring, and evaluating activities.

C.1 Program Implementation

Through the LWGs, we promoted and facilitated use of the company business plans as the primary tool to develop annual action plans and monitor company progress towards the objectives set forth in the two documents. We complemented this through intensive training of trainers programs, to build local cadres of practitioners capable of replicating and sustain pilot interventions, and troubleshoot problems. This approach is summarized in Exhibit I below.

To facilitate the process, the WWSS Program supplemented the technical assistance and training activities with the procurement of diagnostic equipment, to facilitate the analysis and remedy of problems encountered.

C.2 Interruption of Activities

While this approach remains to a large extent on-track, a number of events affected WWSS activities. The Sinai Water and Wastewater Company was added to our scope of work through a contract modification in mid-November, 2010, which forced us to divert resources to bring the utility up to speed and catch up with the programs in the other targeted companies. This effort was fruitful despite the deteriorating security situation since the January 25 uprising. The impact of the latter was equally disruptive in the remaining governorates. Increased violence and uncertainty forced us to close our offices starting January 30, evacuate the expatriate team members to DC, and subsequently relocate the national staff to nearby Giza. The continuing upheaval, combined with the disruption of airline and train services forced us to cancel field trips for the remainder of February, and to concentrate on report preparation and curriculum development for forthcoming tasks. While at the Chemonics headquarters, the expatriate team maintained daily communication with staff, USAID and subcontractors to ensure the safety of personnel and coordinate ongoing work based on an interim work plan. As violence subsided, we reopened our project office on February 13. The expatriate team began returning one week later and by March 1, field trips resumed in earnest, despite continuing strikes and sit-ins in a number of counterpart organizations, especially in Upper Egypt.

Exhibit I: WWSS Subsidiary-Specific Implementation Approach – Year 3

C.3 Accomplishments

What follows is an overview of the activities implemented in Year 3, including preliminary results and reported impacts.

Activation of local working groups (LWGs). In line with our Year 3 approach, outlined above, we kicked off Year 3 activities with the formation and launch of LWGs in 11 subsidiaries. Presided by the company chairmen, these working groups include division heads and senior staff members, and members of our team assigned to these utilities, supplemented occasionally with resident WWSS Program advisors to follow and monitor ongoing tasks. We worked closely with them throughout the first and second quarters to revisit their business plans, and prioritize the activities therein, and formulate programs to be jointly implemented by the local utility and our project. We continued to meet with the local working groups periodically throughout the year, to discuss progress and address challenges in implementation. Activation of these groups represents a significant step toward promoting intra-company horizontal cooperation, and empowering the utilities to initiate and sustain activities similar to those launched by WWSS into the future.

Business planning. Over the past 18 months, the WWSS team has circled the country promoting utility business planning as a tool for invigorating management and enhancing accountability. By mid-Year 3, all companies targeted by our program had completed their first-ever business plans. Under the WWSS approach, the process of developing the plan was as important as the plan itself. Plans were drafted by individual subsidiaries through participatory workshops, joint presentations, and discussions. The planning sessions provided a unique opportunity for various groups within the company – from

accounting to engineering – to sit together, discuss their goals and challenges, and to craft a unified vision for their company's next five-year period, along with programs to help them attain the objectives set forth in these documents. Our team supported these efforts initially and then continued to monitor the plans' use by the companies, offering them assistance in updating the plans as needed, and in implementing the programs outlined therein.

Training of trainers program. The TOT program was the hallmark of our Year 3 approach to institutionalize WWSS capacity building and technical interventions in targeted utilities. The intensive program covered three areas, deemed of potential high impact/high return – leak detection and reduction, energy use rationalization, and chemical use optimization. The two-phase TOT consisted of a technical component to refresh the subject matter knowledge of prospective trainers, followed by "soft skills" training in the design, delivery, and monitoring of training programs for trainers, selected from the pool of technical trainees. We concluded the TOT program in 11 utilities in June, providing technical training to over 600 individuals, and further equipping 179 of them as future trainers. In Year 4, we will continue to support these cadres of technical specialists in their training delivery within their respective companies, and in their roll-out of WWSS interventions within their territories.

Financial management support. Our assistance in this area in Year 3 focused on solidifying financial automation efforts initiated the prior year using the ADVAC system, and on developing tools for ensuring that the new systems are properly utilized and generating the appropriate internal management reports and external financial statements. All the installations supported by WWSS are functioning well, with daily data updates and periodic generation of financial statements. Additionally, to standardize annual budget submissions from the regional utilities, we worked closely with HCWW to develop budgeting guidelines, and to roll them out through workshops with over 100 participants from 14 subsidiaries, with the understanding that the Holding Company will handle their dissemination in the remaining subsidiaries. We also finalized and distributed a comprehensive *Manual on the Unified Accounting System*, as well as a *Guide for Reading and Interpreting Financial Statements* for use by non-finance professionals throughout the sector.

Support in human resource management and development. As noted earlier, following the January 25 uprising, HCWW and its subsidiaries had to confront a variety of employee relation problems. At the request of the Company, we reviewed its employee manual, and designed on its behest an employee performance evaluation system, which will be piloted early in Year 4. We also assisted four subsidiaries in developing their first-ever HR management and development plans, bringing the number of assisted companies on this task to nine. Concurrently, we assisted targeted companies in implementing their HR plans, supporting the development of organizational structures and staffing plans, among other things. In Aswan, at the Chairman's request, we helped the HR division develop a new organizational chart for the Company. In Sohag, we are equipping a new training facility at the Company headquarters. Finally, this past quarter saw the graduation of 27 up and coming leaders from Egypt's water and wastewater utilities from the WWSS Utility Management Certificate Course, provided under the auspices of the American University of Cairo's Management Center. The nine-module course aims to equip future leaders with the knowledge necessary to manage large-scale utility operations. It covered all areas of utility operations – from the legal framework, to human resources and financial management, to operations and maintenance, and customer service and public outreach. The series will be reoffered during this plan year, and we are working closely with AUC to accredit the certificate by the Higher Council of Universities.

Technical assistance in operations and maintenance. In the current post uprising climate, where utilities' resources are stretched ever thinner, the need for cost-saving measures and other efficiency improvements has become even more urgent. Improving the efficiency of plant and network operations remained a central activity throughout Year 3. Our leak detection pilot efforts were extended to five additional governorates, complemented by technical training and TOT for all WWSS-targeted utilities. Following

our successful Year 2 pilots in energy use rationalization, we purchased and delivered equipment to all targeted subsidiaries, and provided intensive technical training and training to potential instructors, to enable the utilities to roll out the activity in additional plants. We followed the same approach in chemical use optimization, and our recent assessments show that a number of companies are already replicating these activities on their own, and generating significant savings. However, we need to consolidate these gains, and have identified additional training and equipment needs to be addressed in the course of this year to sustain the programs initiated. Also at the plant level, we continued the installation and training on the MASTER computerized maintenance management system, which is now operational in more than 60 plants nationwide. Finally, we provided hands-on training and assistance to utility and plant staff to develop illustrated operating instructions, which are now on display and utilized in 27 plants. As in the case of other O&M interventions, we aim at consolidating the gains and advances realized in the past year by building local capability to produce such instructions and ensuring their proper utilization.

Design and launch of training program in capital investment planning and program management. Capacity building in this area resurfaced as a major priority during the second quarter, prompted by an urgent request by the former chairman of HCWW, who wanted to leverage our CIP/PM program to benefit the large infrastructure development components of the recently launched ISSIP and IWSP projects. To this end, we redesigned this component of the work plan into an 18-month program and reconfigured the team, complementing it with Chemonics Egypt resources, led by Dr. Ahmad Gaber. The program integrates training and technical assistance program and includes seminars for subsidiary leadership, along with intensive hands-on training for their planning and program management staff on the entire project life cycle. Classroom training is complemented with actual case studies extracted (when possible) from their respective master plans, followed by technical assistance through all the stages of project identification, preparation, tendering, implementation and commissioning. Following USAID and HCWW approvals, we launched the program in the third quarter, and plan on concluding by next June.

IT Master Plan completed. WWSS consultants completed the assessment and due diligence phase, which catalogued the status of information technology infrastructure, operations, and human resources at each company. The assessment was presented in detail to HCWW and subsidiary staff, who provided useful feedback. The IT Master Plan was completed in the fourth quarter, and presented to HCWW management and IT personnel, and a detailed implementation plan was developed.

Upgrade and roll-out of the Monitoring, Analysis, and Reporting System (MARS). A joint WWSS-HCWW team cooperated on upgrading and launching a completely revamped version of MARS, a USAID-supported application for monitoring of water and wastewater utilities using key performance indicators. The overhauled program, which was converted into a web-based application, benefited from extensive input of HCWW's Economic Analysis Unit, the Central Laboratory Directorate, and Information Technology Department. The new version incorporates more data elements and indicators relating to commercial, public feedback, laboratory, human resources, and plant-level operations. It includes more robust controls for data accuracy, improved data entry and reporting, along with more effective data sharing tools. Feedback received from utilities indicates broad uptake of the new MARS version, general contentment with its new features, and few obstacles related to system migration. We completed technical documentation for the system at the end of Year 3, and will use this in the ongoing handover of the system to HCWW, which will continue into Year 4.

Support for USAID's Job Creation through Essential Service Delivery (JCESD) program. In response to worsening unemployment conditions following the January 25 uprising, USAID moved forward with funding labor-intensive, small-scale infrastructure projects in selected governorates. Using the FARA mechanism, the planned projects will create much-needed employment opportunities, extend or improve water service, and provide household connections to previously underserved communities. At the request of USAID, we are providing project management oversight in WWSS-targeted governorates throughout

implementation, using this as a training ground for subsidiary program/project management personnel. Further, we are designing and implementing an outreach campaign in conjunction with the infrastructure works, to publicize themes associated with improved service – such as conservation and public health/hygiene – and to highlight USAID's and GOE's contribution to service expansion and job creation. We began work on the program management and public outreach tasks in the third quarter in Beni Suef and Sohag, and additional governorates are expected to move forward this year.

WWSS program monitoring and evaluation. In the first quarter we revised the WWSS performance monitoring plan by streamlining the indicator data collection requirements, developing a plan for qualitative assessment of program impact, and including baselines, actual figures, and targets for all program indicators. Utilizing the updated plan, our regional M&E coordinators surveyed targeted utilities on a quarterly basis, focusing on the extent of application of project-provided tools and training, and their impact on the way they carry out their work and on service quality. The surveys generated actionable feedback in a number of cases, and identified themes that helped us in ongoing activity and resource planning. For example, the MASTER CMMS is functional in a number of plants, and the demand for the system remains strong. To support existing installations and accommodate demand, it is of the utmost importance to leverage HCWW resources sooner than planned. These and other observations and recommendations are summarized in Annex B.

D. Year 4 Implementation Strategy

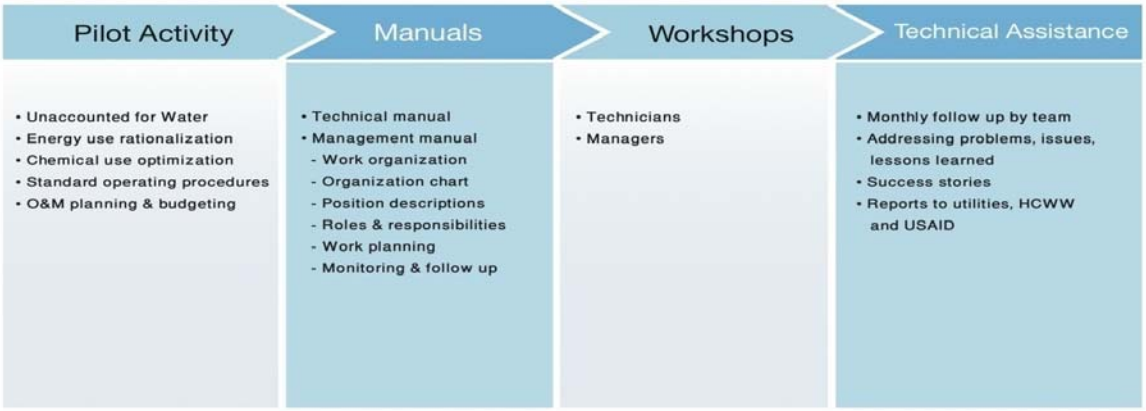
Our fourth year technical assistance strategy is a somewhat modified extension of that initiated in the second year of the WWSS Program. It is organized around a three-prong strategy to ensure that all areas of the scope of work and the directives of the WWSS Board of Directors during its January 11, 2010 meeting are addressed. The three components of our strategy consist of:

- Assistance to the Holding Company, or more accurately cooperation in the capacity building and institutional development activities at the subnational levels,
- Cross-cutting tasks targeting two or more operating subsidiary with a common approach, and
- Subsidiary-specific tasks tailored, as needed, to the unique needs of each of the thirteen utilities covered under our contract.

D.1 Technical Assistance Approach

During the past year, the main emphasis of our activities was on business plan updating, rolling-out and replicating a package of critical, high-impact interventions launched in Year 2, and developing mechanisms to sustain such interventions into the future. Our approach to implementing technical tasks, e.g., O&M, water leak detection and repair, chemical and energy use, began with pilot activities, during which problems were diagnosed, followed by the tailoring of solutions to address them. Drawing upon the lessons learned from these pilots, we documented the interventions in technical reports, how-to manuals, poster-size plant operating instructions, and other materials to facilitate training and future reference. We complemented this with workshops and/or on-the-job training, and a series of training of trainers' sessions to create local capability to deliver similar instructions and ensure that the know-how is transferred and applied in a consistent fashion. This approach is illustrated below in Exhibit II.

Exhibit II: WWSS Technical Assistance Approach



Consistent with this approach, we will organize a TOT wrap up workshop early in Year 4 for the graduating utility instructors, during which they will be tasked to draft their own, company-specific training plans and schedules. We will then provide them with the materials required and give them the go-ahead to proceed with local training with the expectation of completing the delivery by March 31, 2012. Concurrently, with follow-on training, we will assist subsidiary representatives in updating their annual action plans and selecting replication projects to be implemented using the knowledge acquired through prior pilots and the training, and utilizing the equipment procured for these purposes under the auspices of the WWSS Program.

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 begins with an integrated training curriculum, to be completed in December, after which participants will be asked to select projects derived from the regional master plans and the utilities' priorities, to serve as live demonstration projects during which they will apply the skills acquired. Follow up visits to assist and monitor work progress on these demonstration projects will be provided through the end of the plan year.

In the case of planning, finance, and human resource administration activities, the emphasis is on assisting the utilities in developing their own staffing plans and organizational structures, and ensuring that previously introduced management concepts, tools and instruments are applied in a consistent fashion. Except for selectively introducing the inventory and cost accounting modules of ADVAC on a pilot basis, we are launching no new initiatives in financial management. Rather, our finance and IT advisors, working closely with the ADVAC software developer, will conduct periodic visits to the operating companies to ensure that the modules of the system are operating properly, and provide ad hoc advice. The primary responsibility for backstopping ADVAC, along with the MARS, PRiSM and MASTER software programs are being transferred to the Holding Company during the first quarter of Year 4, and WWSS will remain engaged and available to provide second-level support.

D.2 Planned Activities

As we enter the final phases of program, our assistance to HCWW is confined to facilitating the transfer of tools and instruments from the WWSS Program to the Company, and from the latter to its regional subsidiaries, and the conclusion of three carry-over activities from Year 3. The latter consist of rolling out the employee performance evaluation system, and concluding the design and launching the new corporate website.

Our cross-cutting capacity building activities will cover all WWSS participating utilities, including the Holding Company. They consist of:

- Delivering additional AUC advanced seminar series for utility executives,
- Implementing the Junior Professional Development Program, which is to be launched in the second half of the plan year,
- Continuing our ongoing 18-month training and TA program in capital investment planning and program management (CIP/PM), and
- Delivering, in cooperation with the WPRR Program and HCWW, a series of seminars to utility chairmen on a variety of financial and program management topics.

Subsidiary-specific technical assistance focuses on seven of the least advanced operating HCWW subsidiaries included in the WWSS Program. In consultation with USAID and the Holding Company, we excluded subsidiaries that are either well ahead of sister companies, or receiving assistance from other donors to avoid duplication of efforts. The targeted water and sanitation companies are located in Sinai, Matrouh, Beni Suef, Minya, Assiut, Sohag, and Aswan. Our tasks in these utilities will be based on the action plans, which are derived from their respective five-year business plans previously prepared by the local joint working groups (LWGs). Technical assistance will concentrate to varying degrees on:

- Participating in LWG activities, with the principal aim of (1) updating utility business plans, and (2) jointly planning and monitoring the implementation of priority interventions derived from these plans,[2]
- Facilitating and evaluating the delivery (by local staff) of the O&M cost savings and efficiency improvement courses based on the Year 3 TOT programs, as well as roll-out of the pilot programs,
- Assisting select utilities in the preparation of their staffing plans and organizational charts, and helping them in operationalizing the new structures,
- Selectively introducing the ADVAC inventory management module and testing it in four operating subsidiaries, and trouble shooting of the human resources and accounting modules after its handing over to the Holding Company,
- Assisting in the planning and supervising the implementation of projects initiated under USAID's grants for Job Creation through Essential Service Delivery (JCESD),
- Organizing and implementing public outreach and education campaign in connection with the JCESD initiative along the themes of public health and hygiene, water conservation and job creation, and highlighting the tri-partite partnership among USAID, the local utility and the community in that initiative, and
- Procuring and installing select equipment to enable further application of WWSS programs; including laboratory equipment, training center materials, and, subject to availability of funds, tools for energy use rationalization and leak detection and reduction.

[2] In accordance with the priority sites and the timeline established by the LWG, the interventions will consist, for the most part, of energy use rationalization, chemical use optimization and water leak detection and repair projects. These and other O&M and rehabilitation tasks aim at improving the practices and management in these areas, and are based on the skills and tools acquired during our pilot activities, the ongoing CIP/PM program, and the training-of-trainers programs.

D.3 Measuring Success

As in the past year, 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 gatherings efforts is to assess:

- Extent to which WWSS-introduced interventions are being adopted and successfully replicated,
- Adoption, and regular updates of business plans,
- Institution of human resource development programs,
- Trainees' evaluation of workshops and courses delivered,
- Impacts and cost reductions achieved be they 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.

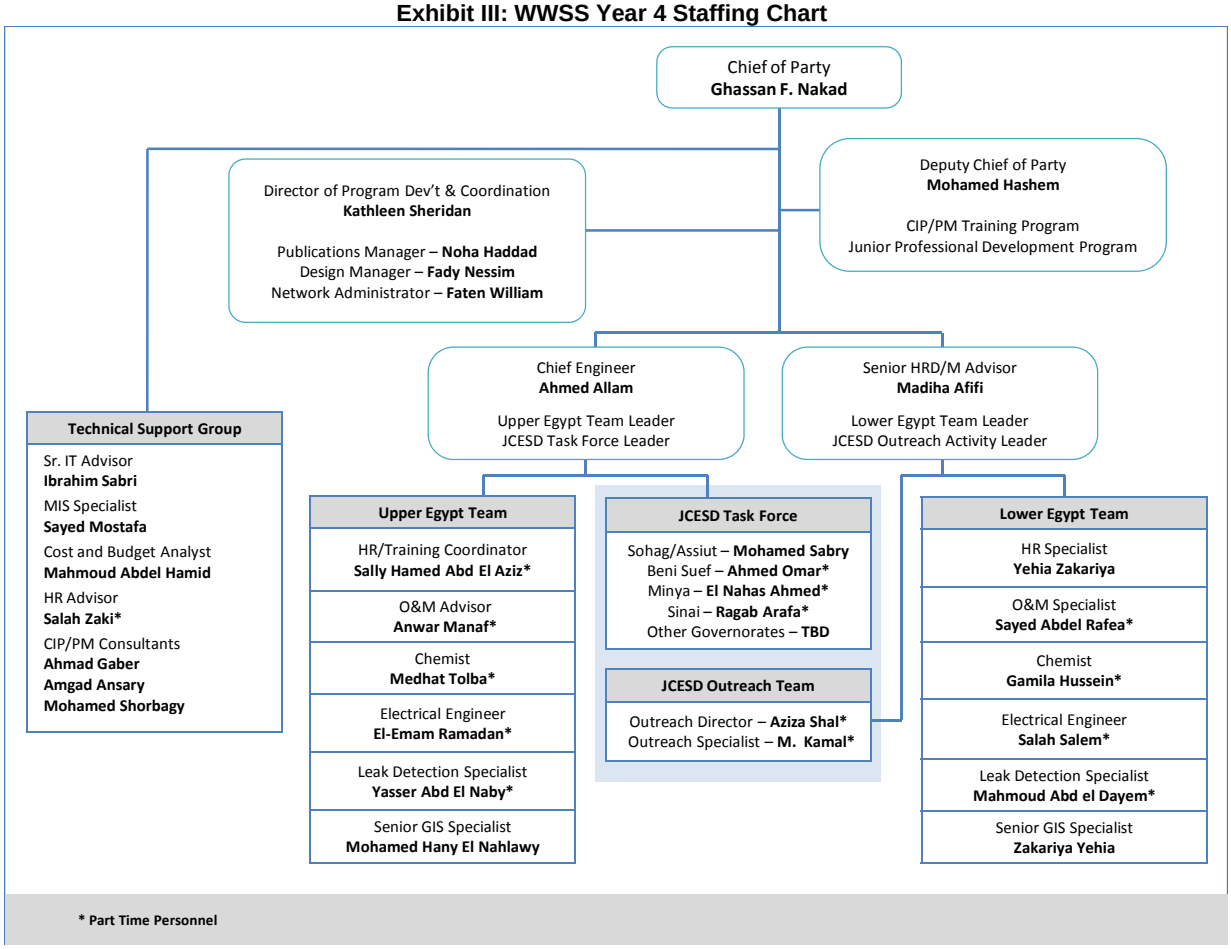
E. Team Organization

The Chief of Party, Ghassan Nakad, will oversee utility-specific work plans. Two team leaders will manage the activities at the regional levels: Chief Engineer Ahmed Allam will lead all activities in Upper Egypt, and supervise JCESD efforts. Mrs. Madiha Afifi, Senior Human Resources Development Advisor, will responsible for Lower Egypt activities (including our Sinai work). She will also supervise the ongoing WWSS utility executive development program developed in cooperation with AUC and the JCESD-related public outreach and education activities. Deputy Chief of Party, Engineer Mohamed Hashem, will be in charge of CIP/PM training and technical assistance activities and Junior Professional Development Program. M&E activities, along with report production and communication work will remain the responsibility of Kathleen Sheridan, Director of Program Development and Coordination.

Interdisciplinary teams, consisting of information technology, finance and human resources development specialists and engineers will assist the team leaders in implementing the business plan programs proposed by in the subsidiaries' action plans and 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 of construction management engineers hired for the purpose will be temporarily relocated to the targeted governorates. They are tasked to assist utilities in planning and implementing the small-scale FARA projects funded under that USAID initiative. The JCESD Outreach Team, currently sourced through a local subcontract with Development Business Associates, will work under Ms. Madiha Afifi's leadership to implement a public outreach campaign in parallel with the infrastructure works.

Exhibit III: WWSS Year 4 Staffing Chart



*** Part Time Personnel**

SECTION II: DETAILED YEAR 4 WORK PLAN

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

A. Central activities, targeting the HCWW and emphasizing mainly technical support to enable HCWW to backstop field-based activities.

B. Cross-cutting activities, targeting multiple subsidiaries at the same time. These will involve all 13 participating subsidiaries, and include mainly workshops and training activities not specifically tailored to any particular operating subsidiary.

C. Subsidiary-specific activities, consisting of efforts targeting each subsidiary individually, driven largely by their business plans. While we will limit these activities to those with a high potential for impact, we will adapt the interventions to the needs and situation of each subsidiary, and work with LWGs to plan, implement, and monitor their progress. Given the resources involved, we will confine these activities in most cases to those companies that have proven most in need of and receptive to WWSS assistance, and those not receiving assistance from other donor programs: Sinai, Matrouh, Beni Suef, Minya, Assiut, Sohag, and Aswan. This component also includes WWSS support to recipient companies under USAID's Job Creation through Essential Service Delivery program.

D. 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.

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

Activity HC 1 – Provide technical support to USAID-financed management information systems (Oct 2011 – Sept 2012). USAID, through the WWSS and WPRR programs, and their predecessor WWSPR, has supported the development and/or installation of numerous automated systems aimed at improving management in the sector. As outlined in our scope of work, WWSS' role is to continue to support existing systems, such as MARS and PRiSM, which was our primary focus in Years 1 and 2. In Year 3, we shifted our attention to ensuring sustainability of these programs, through system upgrades and additional training for HCWW and its subsidiaries. Most importantly, we worked closely with designated HCWW teams on the latest system upgrades and training, to initiate the handover and build their capacity to sustain the systems in the future. In Year 4, we will complete the handover of the systems, and assist the HCWW in supporting field applications at its subsidiary companies. As agreed with WPRR and USAID representatives, ongoing support of the PRiSM program will be managed by WPRR, as assistance is needed in all 23 subsidiaries. Our technical support activities in Year 4 are described below:

- **HC 1.1 - Monitoring, Analysis, and Reporting System (MARS).** In Year 3, we upgraded the MARS system, trained laboratory and economic analysis staff responsible for system maintenance in all subsidiaries, and engaged HCWW staff thoroughly in the development of Version 2 of the software program. By the end of the year, technical documentation and backstopping responsibility was transferred from WWSS to HCWW. In Year 4, WWSS will assume a secondary role in MARS support, focusing on finalizing and handing over the technical system documentation, developing a mechanism for escalating technical problems, fixing bugs,

integrating MARS with ADVAC financial system, and periodically consulting with the HCWW MARS support team.

- **HC 1.2 - Maintenance through Systematic Tracking and Equipment Repair (MASTER).** This computerized maintenance management system was developed by the WWSS team in Year 2 to improve plant-level preventive and corrective maintenance practices. Our focus in Year 3 was on refining and rolling out the system, and by the end of the year it was installed in more than 60 treatment plants nationwide and technical documentation (source code, user manual, administrator manual) was completed. In Year 4, we will update the technical documentation as needed, and support HCWW's backstopping of the system through bug fixes, development of a mechanism for escalating technical issues, and other consultations as needed.

Leads: Engs. Ibrahim Sabry and Sayed Mostafa (WWSS).

Activity HC 2 – Finalize and support roll-out of employee performance evaluation system in HCWW and its subsidiaries (Oct 2011 – Sept 2012). The January 25 uprising and subsequent labor-related unrest at HCWW and its subsidiaries underscored the pressing need for improved HR management in the sector. With increased numbers of tenured employees, the HCWW and a number of its subsidiaries requested assistance from WWSS in developing tools to monitor and manage employee performance. In response, WWSS developed a performance management system for HCWW, which can be adapted for subsidiary use, linking performance with established competencies, monthly incentives, annual bonuses, and unit and company plans and strategies. The system consists of a performance agreement between the employee and his/her supervisor, an internal evaluation form to be completed by both the employee and the supervisor, and a performance development plan. Working closely with our HCWW counterpart, we subsequently developed a manual and a plan for implementation of the system.

In the first quarter of Year 4, we will jointly present the system to Company leadership, and, after receiving their feedback and approval, facilitate a workshop in Quarter 2 for division and department managers. Subsequently, we will support testing of the system with select HCWW departments, and rolling it out company-wide. Should HCWW want to develop a similar system for subsidiary use, we will provide assistance as needed.

Lead: Ms. Madiha Afifi.

Activity HC 3 – Complete upgrade of HCWW website (Oct 2011 – May 2012). HCWW has identified its public website as a primary tool for external communications. The current website was developed on an ad hoc basis, and after years of additions, is currently too complex to maintain. As a result, the content is out of date and the navigation convoluted. After a series of discussions with HCWW in the past year, WWSS agreed to: 1) streamline and update the existing HCWW website, and 2) supplement it with a link to a password-protected area that concerns only Company staff and other authorized users. We have already completed the scope of work for an external consultant to develop the site, along with a sitemap, new site design, and much of the content. We will complete the content development and launch a prototype of the site by the end of the first quarter. Following HCWW approval of the prototype, we will then proceed with development of the password-protected intranet portal for HCWW staff. The content development and site programming will take approximately two months, and will be completed in the third quarter.

Lead: Ms. Kathleen Sheridan.

B. Cross-Cutting Activities

Activity CC 1 – Continue implementation of training and technical assistance program in capital investment planning and program management (CIP/PM) (Oct 2011 – Sept 2012). Over the past three years, we completed important deliverables in this component of the WWSS Program scope of work. This included: a capital investment planning manual, a three-volume set of standard contracting documents related to tendering, construction management and related topics, and a series of introductory courses in hydraulic modeling, and on the use of WaterCAD, SewerCAD, GIS and project scheduling applications. With the completion of these milestones, we moved to a more hand-on training and field technical approach aiming at building local project planning and management capability to enable the operating subsidiaries of HCWW to assume greater, if not full, responsibility in identifying, screening, selecting and subsequently implementing capital investment projects, and rehabilitating existing infrastructure.

This second phase of the activity is part of an 18-month plan, which we started in the third quarter of last year and expect to complete towards the end of Year 4. It consists of high-level orientation to senior utility managers and decision makers, to present previously produced manuals and standard documents, along with workshops to technical staff featuring the above documents as well as in-depth training on the utilization and updating of master plans, hydraulic analysis, and various software applications. Pursuant to the request of HCWW, eight water and wastewater companies, namely those of Daqahliya, Minya, Assiut, Qena, Sinai, Beni Suef, Matrouh, and Luxor, were slated to receive classroom training in hydraulic modeling. The Holding Company asked that once training on hydraulic modeling using computer-assisted design software is completed, the last four companies will be subject on-site technical assistance working on locally selected projects extracted from their respective master plans. A detailed training plan for this activity can be found in Exhibit IV on the following page.

As described in our original plan, on-the-job training and field based follow up will continue through June 2012 to ensure that the skills acquired are being applied and provide help as needed.

Leads: Dr. Ahmad Gaber (task manager), Dr. Amgad el-Ansary (CIP) and Engineer Mohamed el-Shorbagy (PM).

Exhibit IV: WWSS CIP/PM Training Plan

Activities	June		Jul-11				Aug-11	Sep-11				Oct-11				Nov-11					Dec-11			
	3	4	1	2	3	4		1	2	3	4	1	2	3	4	1	2	3	4	5	1	2	3	4
	19 - 20	26 - 30	3 - 7	10 - 14	17 - 21	24 - 28		4 - 8	11 - 15	18 - 22	25 - 29	2 - 5	9 - 13	16 - 20	23 - 27	30 - 3	6 - 10	13 - 17	20 - 24	27 - 1/12	4 - 8	11 - 15	18 - 22	25 - 29
2 - day CIP Workshop	Giza Menufiya Matrouh Sinai Daqahliya Beni Suef **(Cairo)**				Aswan Qena Sohag Assiut Minya **Luxor**		Ramadan										Eid Al-Adha							
5 - day Basic Hydraulics Workshop		Qena Luxor Minya **Assiut**		Matrouh Sinai Daqahliya Beni Suef **(Cairo)**																				
5 - day Hydraulic Modeling Workshop																			Matrouh Sinai Beni Suef Daqahliya **(Cairo)**			Qena Assiut Minya **Luxor**		
2 - day Hydraulic Modeling Practical Training																					Matrouh	Sinai	Beni Suef	Luxor
3 - day Standard Contracts Workshop										Matrouh Menufiya Daqahliya Sinai **(Ismailia)**					Giza Beni Suef Minya Assiut **(Cairo)**							Luxor Qena Sohag **Aswan**		
5 - day MS Project Workshop																			Matrouh Menufiya **Daqahliya** Sinai		Beni Suef Minya Assiut **Giza**			Luxor Qena Sohag **Aswan**
2 - day Project Management Technical Assistance																								

*** OJT and field-based follow up to continue through September 2012**

Activity CC2 – Replicate AUC Utility Management Certificate training program (Oct 2011 – Sept 2012). This advanced seminar series for water and sanitation utility executives, designed by the WWSS Program, was successfully implemented last year 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. 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 review for formal accreditation as a certificate program by Egypt's Higher Council for Universities, is composed of nine modules, offered intermittently over a 12-month period:

1. Legal and regulatory framework of the water and sanitation sector
2. Organizational development and human resources management
3. Strategy development and corporate planning
4. Financial management and business analysis
5. Customer service and public outreach
6. Capital investment, contracting, and outsourcing
7. Project and construction management
8. Operation and maintenance
9. Management information systems and technologies

Following the graduation ceremony of the first class of 27 participants, we will launch the second round of seminars in early October, and, subject to availability of time and resources, may offer a third round by the end of the first quarter to run concurrently with the second series. HCWW will lead the recruitment and selection process. The two seminar series should conclude by the end of third and fourth quarters of the plan year, respectively. WWSS will also facilitate discussions between AUC and HCWW on the sustainability of the course after this year.

Lead: Ms. Madiha Afifi.

Activity CC 3 – Pilot Junior Professional Development Program (JPDP) (Oct 2011 – Aug 2012). This tentative task is also subject to availability of resources. It is scheduled to be launched in the first quarter of FY 2011-2012. The JPDP is an on-the-job and mentoring program consisting of individualized counseling, monthly workshops and lectures, and site visits led by experienced subject-matter experts from the WWSS Program, the Holding Company, and its subsidiaries. It aims at attracting, nurturing, and retaining promising young professionals to 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 in the water and sanitation sector.

A joint HCWW-WWSS panel will competitively select candidates for this six-month program from a variety of academic disciplines ranging from different engineering specialties, the social and applied sciences, accounting and finance. Generalists will be recruited as well, especially for human resources and administrative functions. Over the six-month period, the participants in the program will work together with our team members on a multitude of tasks, and with the permission of the local subsidiary, be assigned to carry out mutually agreed upon activities extracted from the business plan of the company. Working closely with the immediate supervisor of the JPDP participants, the WWSS-assigned mentor will assess the progress of the participants in relation to the goals of the program and will cooperate with

the supervisor of the participant and the participant in drafting a performance development plan to guide the career path of the participant, and serve as a basis for future performance evaluation.

Lead: Eng. Mohamed Hashem.

Activity CC 4 – Facilitate high-level seminars and presentations for government, regulatory, and utility leaders (Quarterly, one per quarter). Over the course of the past three years, the WPRR and WWSS Programs have jointly and separately prepared reports, manuals, and guides for the benefit of their counterparts at the Ministry of Housing and Urban Development, the Water Regulatory Agency, Holding Company for Water and Wastewater and its operating subsidiaries. These documents were presented and discussed in different forums and widely disseminated among these institutions. In view of management changes, the occasional modifications to the documents, the feedback received to date, and the potential benefit from exchanges among various sector leaders, we felt that it is necessary to re-introduce the subjects presented in these documents in inter-institutional settings, where people of different experiences can share their views and learn about the positions and concerns of their opposite numbers in the policy, regulatory, or operational arenas.

These gatherings will take place quarterly, and the topics to be shared range from 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 corporate planning. As in the past, the presentations and seminars can take place either within the context of monthly policy meetings of HCWW, to which the senior leadership of the Company and its subsidiaries are invited, or during dedicated gatherings in which one or more topics can be presented.

Lead. Eng. Mohamed Hashem.

C. Subsidiary-Specific Activities

Activity SS 1 – Support joint local working groups (LWGs) (Oct 2011 – Sept 2012). Our success in making these monthly gatherings of WWSS Program advisors and local utility managers and decision makers has been uneven and it is likely to continue as such. Staff meetings and inter-departmental coordination among utility staff members are the exception rather than the rule. Problem solving within the operating subsidiaries tends to take place in a vertical, hierarchical fashion, with most decisions (even minor ones) requiring senior management approval, with little horizontal or lateral coordination. Our aim by pushing the LWGs is to promote cross-departmental cooperation, with our team members facilitating the updating of utility business plans, and implementing and monitoring the priority interventions derived from these plans. We have found, through our assessments and otherwise, that the most successful activities take place at the subsidiaries where there is significant buy-in from the management team; that is, where the LWGs are active. We will continue to hold the meetings on a monthly or bi-monthly basis in each of the seven targeted companies.

Co-leads: Ms. Madiha Afifi and Eng. Ahmed Allam

Activity SS 2 – Facilitate subsidiary-led training on WWSS efficiency improvement interventions (Nov 2011 – June 2012). During the past year, we completed a series of training-of-trainers activities in the areas of water network loss reduction, chemical use optimization in water treatment plants, and energy use rationalization in both water and wastewater treatment facilities. The TOTs consisted of technical courses along with workshops on training delivery by these trainees. The purpose of these TOTs, as stated previously, is to create a local cadre of specialists capable of leading technical activities, or serving as a resource to work in these domains and to deliver, on the behalf of the WWSS Program or otherwise, courses on these topics to fellow colleagues both within and outside their respective subsidiaries.

Early in year 4, we will be rolling-out the training starting with a series of recapitulatory workshops for all designated trainers from the participating subsidiaries. The one to two day workshops will serve to answer any inquiries that these trainers may have, discuss the logistics, venues, timelines and related financial and administrative matters, and most importantly help the trainers develop their own, subsidiary-specific training plan. This will be followed over the course of the plan year with supervisory visits by subject matter experts and training specialists from our staff to ensure that the courses are delivered effectively and in a timely fashion, and provided any needed assistance.

Leads: Ms. Madiha Afifi, Eng. Ahmed Allam, and Ms. Sally Hamed.

Activity SS 3 – Support local roll-out of efficiency improvement programs (Oct 2011 – Sept 2012). Over the remainder of the life of the WWSS Program we will concentrate on helping utilities roll out successful cost saving and efficiency improvement programs piloted in Year 2 and replicated selectively in Year 3. As previously noted, we have successfully completed demonstration projects in 11 subsidiaries, and complemented these efforts with assessments and documentation, along with training and procurement of basic equipment to facilitate the replication of such interventions by these utilities. The roll-outs consist of three activities aimed at improving water quality and maximizing savings in water and wastewater treatment and conveyance operations.

- **SS 3.1 – Energy use rationalization.** Energy consumption constitutes upward to 40% of the cost of water and wastewater treatment, which companies can reduce and control through periodic monitoring and adjustment of their plants' power factor. To help them tackle this issue, we carried out a series of pilot projects in Year 2 during which we assessed energy use patterns in cooperation with utility staff and installed capacitor banks to improve efficiency. In Year 3, we equipped most WWSS Program subsidiaries with power factor analyzers, and provided them with on-the-job training and TA to enable their staff to analyze and properly control power factors in their remaining plants. We also provided utilities with reference manuals and training of trainers to create a local cadre capable of developing utility-wide programs, leading such activities, and providing instructions to fellow staff members in order to sustain the initiatives. We complemented this with periodic visits to monitor their activities and provide them with on-site assistance.

  In year 4, our emphasis is on helping the utilities prepare comprehensive plans to inventory and assess conditions in all their treatment plants, prescribe solutions and prepare action plans to procure and install new capacitor panels, and periodically maintain and fix defective ones. In addition to providing a timeline, the plan will also include a budget and an organization chart, along with position descriptions.

- **SS 3.2 – Chemical use optimization.** The objective and intent of this activity is not to reduce the cost of chemicals used per se, but to optimize their use in water treatment plants to improve water quality, increase the efficiency of the treatment process, reduce pressure on equipment, and controls costs without affecting water quality and service delivery. After a series of pilot chemical use optimization activities in Year 2, which included studies, dosage adjustments, and equipment calibrations in a number of plants, we spent a great deal of time in year 3 on training (including material on jar tests, break point tests, adjusting alum pumps and chlorinators, and calibration of water meters), and trained local trainers to create local capability for rolling out the program on a wider basis. When noticing shortages of basic equipment and chemicals for normal day operations, we went ahead and purchased the necessary tools and materials to facilitate work and avoid delays in implementing our tasks.

Our work in year 4 revolves around implementing the training program with the help of the instructors trained through our TOT. We will work with each company's laboratory technicians and plant managers to develop an action plan for regular tests and analyses, and we will monitor implementation of the action plan, providing technical assistance as needed. Additionally, as described below in SS 8, we will survey seven out of the thirteen WWSS utilities on which we are concentrating to ascertain the state of the laboratories at their water treatment plants. The assessment will cover personnel capabilities and basic equipment needs. Working closely with the laboratory and plant managers, we will then prepare facility-specific plans to bring the laboratories to the desired levels from the point of view of equipment, supplies and staffing, and help put in place systems and procedures for periodic reporting.

- **SS 3.3 – Leak detection and reduction.** The WWSS Year 2 pilot activities in Luxor resulted in recovery of more than 30% of water losses. Since most of this recovery came from reducing physical losses (leaks), our focus in Year 3 was mostly on building capacity in the sector to monitor and address leakage on an ongoing basis. To these ends we provided local staff with technical training in leak detection and repair, valve repair and maintenance, measuring flow and pressure, and GIS, and worked with them to develop action plans for replicating previously piloted activities in other areas in their governorates. We also complemented this work with a series of TOT workshops to build local capability to sustain such activities.

  Unfortunately, the replication of the leak detection activities in Year 3 was slower than expected, due to the post January turmoil and preoccupation of utility management and staff with other problems. In view of the importance of this task, we intend to bring ongoing activities to conclusion and, in conjunction with local training by TOT instructors, roll out leak detection and repair projects in other regions in the utility territories. The steps involved in the process include:

  - In cooperation with the LWG, selecting new target areas, preferably outside the governorate capitals, using the water balance technique and GIS mapping technology
  - On-the-job training for the GIS staff
  - Technical assistance in database and map development, including location of targeted area, pipes, and valves
  - Measuring flow and pressure in the targeted area
  - Leak detection surveying and mapping
  - Leak repair
  - Repeating flow and pressure measurements in the targeted area
  - Analysis of the physical data
  - Reporting and recommendations

In summary, our teams will work closely with the LWGs to ensure that the three efficiency improvement initiatives are prominently highlighted in their respective annual action plans, and help them in prioritizing and selecting replication projects. While we will continue providing support and serve as resource to all WWSS participating subsidiaries, we will place particular emphasis on the seven most needy utilities and not receiving any assistance from other donor projects. Once underway, our assistance will extend to the implementation stage through periodic visits to project sites to lend advice and on-the-job training and address any obstacle that the utility teams encounter.

Lead: Engineer Ahmed Allam.

Activity SS 4 – Support select subsidiaries in preparing and operationalizing staffing plans and organizational structures (Oct 2011 – Apr 2012). We have approached these activities as complementary efforts to ongoing business planning exercises, focusing essentially on current and projected staffing needs over a five-year horizon. In cooperation with a number of companies, we

developed or updated their company organizational structures, and assisted the Assiut, Giza, and Menufiya companies in drafting their staffing plans, including analysis of their current staffing situation, and identification of optimum staffing levels for the coming five years. Based on this experience, we prepared guidelines and templates to assist additional utilities in preparing their own plans and designing their organization charts. This effort was soon halted after its launch in Menufiya and Giza at the request of the HR Division of the Holding Company, which was preparing its own set of instructions. Unfortunately, subsequent support was limited, prompting subsidiaries to seek our assistance, particularly after the uprising of January 25, and the ensuing labor problems in most water and wastewater utilities. Our proposed activities in this domain are in response to these requests. However, due to level of effort limitations within our team and lack of effective counterpart personnel, who could serve as our local partners in this endeavor, we are confining our efforts to select regional subsidiaries – Assiut, Aswan, Sinai, and possibly Beni Suef.

Building on the efforts started last year, we will be helping the targeted utilities in finalizing their staffing plans, including organizational charts in congruence with their business plans and their geographic particularities, descriptions of departmental mandates and position descriptions for professional and support personnel.

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

Activity SS 5 – Support automation of select management functions (Oct 2011 – Sept 2012). In the past two years, our finance and HRD/M staff have installed the ADVAC finance and human resources software in all the utilities not previously equipped with automated accounting and personnel administration systems.[3] After installing the software, we followed up with on-site training by the developer, and supervised data entry and financial statement production, ensuring that the reports were produced accurately and in a timely fashion to the satisfaction of the management of the local subsidiaries and the Holding Company.

As we phase out our efforts in Year 4, we will be confining our role to three sub-activities:

- **SS 5.1 – Facilitate support of the ADVAC financial management and HR systems.** Our finance and HR advisors will make themselves available to support and backstop requests from subsidiaries, and will continue to provide on-site technical assistance through bi-monthly follow up field visits. Concurrently, our IT staff, along with the software developer's consultants, will also schedule periodic visits to ascertain that the systems are running trouble free and train local IT staff on supporting this and other software installed by the WWSS Program such as the MARS monitoring system, as well as PRiSM and the MASTER computerized maintenance management system. Though primary responsibility for backstopping these systems will rest with HCWW, our advisors will coordinate closely with them and be available for assistance when needed.

- **SS 5.2 – Introduce inventory control module.** In the past year, we established a joint WWSS-HCWW work group to evaluate options for improved inventory management and accounting, two priority areas for the Holding Company and its subsidiaries. Following site visits, including demonstrations of the ADVAC inventory software modules at the Cairo Water Company and the Gharbiya Water and Wastewater Company, the work group determined that, except for a few technical issues, the ADVAC inventory control module is an appropriate solution for the utilities in the short- and intermediate-runs. Since it is fully integrated with the other ADVAC components and the software company is willing to cooperate with us on tailoring and improving

[3] Companies receiving ADVAC Finance and HR modules from WWSS: Giza, Sohag, Assiut, Matrouh, Luxor, and Sinai. Utilities receiving ADVAC HR module only: Cairo, Qena, and Aswan.

the product, we decided to install the software on an experimental basis in the Sohag, Assiut, Matrouh and Sinai companies, pending availability of funds. After procuring the system in the first quarter, we will proceed with training of users on inventory control principles. Data entry/conversion will proceed throughout the second quarter, after which the companies will utilize the system to perform their daily work. In the fourth quarter, we will work with the companies to integrate the system with the general ledger and cost accounting modules.

- **SS 5.3 – Introduce cost accounting module.** To improve the allocation of shared costs, such as administrative and other general expenses, and the accurate estimation of production costs, the joint WWSS-HCWW task force would like the possibility of introducing cost accounting software to appropriate utilities. The cost of developing the module is unknown, and the readiness of the companies to utilize such a system has not yet been thoroughly examined. For this reason, we will start by working with HCWW to delineate the system requirements to obtain an accurate cost estimate from the software developer. If the cost is within our means, and if we succeed in identifying a company with the ability and commitment to test the system, we will pilot it in one subsidiary, beginning in the second quarter. Installation of the system will be coupled with training on cost accounting concepts as well as use of the automated system.

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

Activity SS 6 – Establish training facilities in Sohag and Sinai (Oct 2011 – Sept 2012). As part of our technical assistance in human resources management and development, WWSS advisors identified the need for additional training capacity in the Sohag and Sinai companies. The Sohag utility has no training facility for its employees, while the Sinai company, which covers a vast geographical space, has only one facility in Qantara Sharq. In cooperation with subsidiary personnel, we completed the needs assessment process, agreed upon priorities for equipment and materials with the companies, and initiated the procurement process. The Sohag training facility will consist of three rooms at the company headquarters, which have recently been refurbished using company resources. In Sinai, in line with our other HR interventions, we will support a more decentralized approach and equip two smaller facilities – one in North Sinai (el-Arish) and one in South Sinai (el-Tor).

We will deliver the materials and equipment to the Sohag and South Sinai training facilities in the first quarter, and the delivery for the North Sinai facility will follow in the third quarter after the company-led renovation is completed. Following the inauguration of the centers and for the remainder of the year, we will assist the three facilities as needed to launch their operations through the development of a training plan. Additional possible activities include the documentation of operational procedures for the facilities, and assembling and organizing training materials.

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

Activity SS 7 – Equip South Sinai (Gharb el-Nafaq) plant laboratory (Oct 2011 – Jun 2012). The Sinai Company faces a dire lack of equipment in its plant labs – the Gharb el-Nafaq lab has never been equipped and lacks basic laboratory equipment for monitoring the quality of treated water. To address this, we will fully equip and inaugurate the plant lab at the South Sinai Water Treatment Plant treatment facility.

In Year 3, we completed the needs assessment of the lab, agreed upon the equipment list with our counterparts at the Company, and initiated the procurement process. In the first quarter of Year 4, we will deliver the equipment, and WWSS chemists will provide training in topics including laboratory organization, analysis of inorganic compounds, bacteriological examination of water, parasitology,

phytoplankton identification, and other topics. We will then work with lab personnel in quarters 2 and 3 to develop an organizational structure and mandate, job descriptions, and laboratory operating procedures.

Co-leads: Ms. Madiha Afifi, Dr. Gamila Hussein, and Mr. Salah Zaki.

Activity SS 8 – Procure vital equipment for efficiency improvement programs (Oct 2011 – Jun 2012). WWSS activities in chemical use optimization, energy use rationalization, and leak detection and reduction in Year 3 revealed deficiencies in basic equipment in many of the assisted companies. Laboratory staff, for example, cannot accurately measure chemicals without measurement tools and containers, and they cannot apply optimal doses to actual treatment without bulk meters. To ensure the continuation of WWSS activities, and to further demonstrate the potential improvements in water quality and cost management, WWSS has agreed with six[4] targeted subsidiaries to purchase and deliver basic lab equipment and other supplies to select sites and surface water treatment plants in urban areas.

In the first quarter, we will work with the LWGs to identify needy facilities, complete an equipment needs assessment, and outline specifications for the equipment purchase. Procurement and delivery will follow in quarters 2 and 3.

Co-leads: Eng. Ahmed Allam, Dr. Gamila Hussein, and Dr. Medhat Tolba.

Activity SS 9 – Assist in the implementation of small-scale infrastructure projects (Oct 2011 – May 2012). In an effort to minimize the impact of the January uprising and the return of workers from Libya, USAID initiated an activity aimed at generating immediate employment opportunities, particularly in affected poor regions, which also happen to be underserved by water and sanitation infrastructure. In consultation with HCWW, the mission approved a list of priority projects to serve these purposes. These projects are labor intensive, with a labor component of 20% to 30%, ranging in value between LE 60 thousand and LE 1.0 million. The projects are, for the most part, technically straight-forward to implement, requiring short and swift tendering and contracting processes. The works, to be implemented by the operating subsidiaries of the Holding Company, will be financed under Fixed Asset Reimbursement Agreements (FARAs), and supported by the WWSS Program. The latter will provide project management oversight throughout implementation, using this as a training ground for subsidiary planners and project managers.

The USAID initiative, known as the Job Creation through Essential Service Delivery (JCESD) Program, was launched earlier last spring in Beni Suef and Sohag, and will be expanded to include six additional Upper Egyptian governorates in mid-October 2011. 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 will provide hands-on technical assistance during the initial stages of project identification, screening, selection and planning of these FARA-funded projects, and subsequent implementation oversight. The team will also review and comment on the reports submitted by the utilities to USAID, and report separately on the quality and timeliness of the projects executed.

Lead: Engs. Ahmed Allam and Mohamed Sabry.

Activity SS 10 – Implement JCESD public outreach and education campaign (Oct 2011 – May 2012). Pending USAID approval, we will complement the small-scale water and sanitation infrastructure activities described above with a series of governorate-wide and local, community-based communication campaigns aimed at demonstrating the public health and hygiene benefits of the program, promoting

[4] Assisted companies include those in Matrouh, Beni Suef, Minya, Assiut, Sohag, and Aswan. The Sinai utility is not included here, as their laboratory needs are addressed by Activity SS 7.

water conservation and safe disposal, and highlighting the cooperation between the local utility and USAID in the expansion of water and sanitation services. To these ends, we plan to establish, as we did in Beni Suef and Sohag, governorate-level coordinating committees composed of community and NGO representatives, along with officials from local government and utility officials for the purpose of organizing events and deciding on the specific themes and messages of the campaigns. Once the FARA agreements are signed between USAID and the utilities, estimated for quarters 1 and 2, the committees will develop campaign action plans for the targeted communities in their respective governorates. A budget for this activity was submitted to USAID under a separate cover in early October. Though the campaign timeline will be driven by the infrastructure works, it is estimated that each campaign will last approximately six months.

Lead: Ms. Madiha Afifi.

Activity SS 11 – Draft Standard Operating Procedures (SOPs) (Nov 2011 – Jul 2012). At the request of the Holding Company, our staff prepared a set of SOPs to document routine activities to be followed in water and wastewater treatment plants. In consultation with the Company and local utility executives, we selected five water treatment facilities – two in Minya and three in Assiut, and the Arab el-Madabegh sewage treatment plant in the latter governorate as demonstration examples to produce SOPs and illustrated operating instructions, which we posted in various parts of the plants. The development of SOPs and their use in conjunction with the illustrated instructions are meant to provide plant operators with the information needed to carry out their duties effectively, and facilitate consistency in the quality and integrity of their daily operations.

For Year 4, the chairmen of the Aswan and Sohag companies have requested to assist their respective staff in preparing similar SOP documents to support their ongoing effort for certification under the Technical Sustainable Management (TSM) initiative sponsored by GIZ's Water & Wastewater Management Program.[5] We will begin working on this task initially in Aswan governorate, starting with the Allaqi wastewater treatment plant in Aswan city, and the USAID-built water treatment plant in Kom Ombo, with a target completion date of March 30, 2012. Work on the Maragha water and wastewater treatment plants, in Sohag governorate will be carried out in the Spring, with a target completion date of July 31.

Lead: Eng. Ahmed Allam.

Activity SS 12 – Develop and activate O&M management in Aswan and Sohag (Oct 2011 – Sept 2012). Over the past two years, we have developed a series of tools to improve operation and maintenance of water and wastewater management plants. As noted above, these included standard operating procedures, along with poster-size, easy to read operating instructions for onsite posting, and an Arabic-language computerized maintenance management system to program and track plant maintenance tasks. We complemented this with training and technical assistance focusing on O&M planning and budgeting, and several interventions aimed at improving efficiencies and reducing operating costs (see

[5] The purpose of the TSM Program is to improve the operation of water and sanitation facilities through the implementation of a plant certification system somewhat similar to the German evaluation system developed by the German Water Associations DWA and DVGW. Under the program, plant managers and GIZ experts "developed a checklist in order to set up an organizational and technical monitoring standard for the facilities. The checklist is initially used as a gap analysis tool for internal application in the company. This enables the team to identify and document the "actual situation", to define requirements for improvement and prepare action plans for implementing the identified measures. Later the checklist is used for the certification process, which shows that the water or wastewater facility is managed in line with the national codes of O&M."

Activity SS 3 above). Finally, at the request of HCWW, we developed contracting mechanisms for outsourcing O&M work, particularly for complex wastewater management facilities, and procuring of services through an indefinite contracting mechanism.

The focus in the current year is on integrating these various components into a coherent whole by helping the Kom Ombo district branch of the Aswan subsidiary and the Maragha district branch of the Sohag Company develop O&M plans commensurate with the resources at their disposal, using tools previously introduced by the WWSS Program. The intention here is not to produce comprehensive plans, as much as to put in the place the building blocks of an O&M system to guide the work of utilities at the operational levels. Once completed, our staff will help the two companies in Aswan and Sohag, which have previously completed their O&M plans and budgets, in developing the appropriate operational structures to implement these district-level plans. We will follow this with periodic visits to counsel local staff on optimal ways to organize and program resources, as well as quarterly evaluations of the work performed conducted jointly with members of the LWG.

Lead: Eng. Ahmed Allam.

D. Project Development and Coordination Activities

Activity PDC 1 – Monitor, evaluate, and report project progress (Ongoing). In Year 3, WWSS revised its performance monitoring plan at USAID's request, and activated robust monitoring and evaluation efforts based on the new plan. Our regional teams conducted assessments of each targeted subsidiary on a quarterly basis, and collected quantitative indicator data in accordance with the quarterly and annual schedule outlined in the PMP.

Monitoring and evaluation efforts will continue in the same fashion in Year 4, starting with the first quarter's assessment, to be summarized in the quarterly report. The first quarterly report will also include presentation and analysis of the annual indicator values, drawn from subsidiaries' audited financials for fiscal year 2010-11 period. Quarterly data collection and reporting will continue throughout the first half of the year. The third quarter's assessment will focus on the collective impact of four years of WWSS assistance, and will serve as an input to the program completion report, to be finalized during the fourth quarter, unless the option year is exercised. We will continue to publish all reports, deliverables, and technical training materials to our in-country counterparts and via our website. In parallel with this, we will periodically circulate abstracts of our publications to HCWW, USAID, and other donors, to advertise our knowledge products and to make them available to the widest possible audience. Additionally, we will make available the key technical deliverables from our library to the subsidiaries via the upcoming HCWW intranet site. Finally, we will continue to publish a periodic Program Highlights newsletter in English and Arabic, and will focus each issue on one of the WWSS targeted subsidiaries.

Lead: Ms. Kathleen Sheridan.

Activity PDC 2 – Develop and implement communications plan for USAID in the water and wastewater sector (Nov 2010 – Sept 2011). Since the project's launch, we have used a variety of channels to communicate our progress and achievements. These included a WWSS Program website, periodic newsletters in English and Arabic, brochures, posters and success stories, in addition to the contractually required progress reports, technical reports, and presentations. As many of the pilot activities initiated are being successfully replicated, it is essential to capture the results and impacts of our work in a systemic fashion and promote our contributions with the constituency of the program and its beneficiaries both at the central and levels. This includes USAID, project counterparts, the development community, and the public at large in the affected communities. Such an informational campaign should emphasize the WWSS Program within the broader context of USAID assistance to Egypt's water and

wastewater sector over the past three decades, keeping in mind cultural and political sensitivities in the post uprising environment, and prevailing attitudes towards the U.S. government.[6] To these ends, we propose engaging the services of two communication professionals, an expatriate specialist in project communication strategy development working in tandem with an Egyptian public outreach expert, to:

- Evaluate candidly the effectiveness of the communication tools and instruments utilized by the WWSS Program, including the recent public outreach and education campaign connected with the JCESD activities,
- Recommend adjustments to our current approach in light of current post-revolutionary realities,
- After familiarizing themselves with past and current USAID work in the water and wastewater management sector, develop a step-by-step integrated project communication plan to promote the WWSS Program and USAID's contribution to the development of the sector,
- Propose specific tools, messages, and timeline for the development and roll-out of communication activities for WWSS and input into the JCESD component, and
- Prepare a series of pamphlets, posters and success stories to post on the website of USAID and WWSS, and to disseminate in the various governorates in which the Program operates.

The task will also involve a review of the various subsidiary assessments we carried out, along with interviews with USAID, staff and counterparts at the central and local levels, as well as other donors and NGOs working in the sector. This will be complemented with field visits to water and wastewater facilities to examine conditions on the ground and the accomplishments under various projects USAID projects, and take photographs to illustrate the communication materials.

The plan will be completed during the second quarter, and implementation will follow throughout the rest of the year.

Lead: Ms. Kathleen Sheridan.

Activity PDC 3 – Plan, manage, and report on field trips and training events (Ongoing). Field work will proceed as in Years 2 and 3. Travel will take place from Sunday through Tuesday each week, and all full-time staff will return to the office on Wednesdays and Thursdays to report on their activities. We will prepare field trip schedules on a monthly basis, and share them with USAID, HCWW, and relevant subsidiaries via our website. We will encourage partner participation in field work to the maximum extent possible.

Training events will be planned on a quarterly basis, and schedules and materials will be shared with the HCWW in advance of each event. Using standardized forms, WWSS technical personnel will record attendance and evaluations of each course, and compile completed forms in the WWSS office for monitoring and reporting purposes. Training figures will be included in quarterly reports, and input into the USAID Train-Net system.

[6] Recent opinion polls released by Pew Research and Gallup in the spring of 2011 note that U.S. popularity is very low in Egypt, and that Egyptians remain suspicious of U.S. involvement in Egyptian affairs. This sentiment was echoed during our fieldwork, particularly during our public outreach and education work in connection with the program of job creation through small-scale infrastructure projects. To avoid controversy, project communications activities should focus on the tangible benefits of the projects from the public health and hygiene points of view, promote conservation and safe disposal of wastewater, and emphasize the partnership and cooperation between Egyptian institutions and USAID to create jobs, and rehabilitate and expand existing water and sanitation infrastructure.

Lead: Ms. Madiha Afifi, and Eng. Ahmed Allam.

Activity PDC 4 – Conduct procurement needs assessment and plan for Year 5 (Jul – Sept 2012). Lack of technical equipment is a major bottleneck to replication of WWSS efficiency-improvement measures in many places. For example, while WWSS trainees are applying the chemical use optimization training and identifying optimal doses in a lab setting, they are unable to apply those doses to actual treatment due to unavailability of bulk meters and other measuring devices. This situation is exacerbated by the deteriorating revenues of utilities following the January 25th uprising, where costs have risen (largely driven by labor costs), and collections have fallen in many of the assisted utilities.

For this reason, we intend to conduct a new round of equipment procurement early in Year 4(described above under Activity SS 8) and again in Year 5, should the option year be awarded. To this end, we will conduct a needs assessment of targeted companies in Year 4, and develop a prioritized list of equipment and specifications in the 4th quarter. Priority will be given to equipment that facilitates our efficiency improvement programs - leak detection and reduction, energy use rationalization, and chemical use optimization.

Lead: Eng. Ahmed Allam, and Ms. Madiha Afifi.

ANNEX A: WWSS ACTIVITIES TO DATE BY GOVERNORATE

	HCWW Regional Subsidiaries												
WWSS Activities	**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 Plan Development	x					x			x				
ADVAC HR	x	x		x		x	x	x			x	x	x
Ad Hoc HR Assistance (org charts, HR guidelines)	x	x										x	x
Establish Sohag WWC Training Facility												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
Capital Investment Planning Manual and Related TA	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	
Project Management of FARA Projects			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
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	
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	

ANNEX B: YEAR 3 ASSESSMENT RESULTS SUMMARY

What follows are highlights of the WWSS quarterly assessment of activity progress, conducted from mid- to late September, 2011 and covering the fourth quarter of program Year 3 (July – September, 2011). The purpose of the assessment is to monitor WWSS activity implementation against our work plan, to evaluate application and impact of WWSS-provided tools and training, and to identify subsidiary needs for ongoing activities. The results are fed back to our regional teams for prompt follow up action.

The assessment process includes 11 of the 13 companies in the WWSS scope of work. The Cairo and Daqahliya water and wastewater companies are not assessed on a quarterly basis as part of this exercise, as our activities there are limited. In the case of Cairo, because of their advanced state of development, our activities there are confined to specific requests from the Chairman, which included, so far this year: MASTER installations in two plants; ADVAC HR module installation; and PRiSM and MARS activation. The Daqahliya Company, according to the WWSS scope of work, is included only in capital investment planning and program management activities.

ASWAN

The Chairman of the Company provided extensive comments, mostly in the form of requests for additional assistance. He asked for more visits from WWSS advisors, with a focus on capacity building and efficiency improvements, “such as ADVAC.” He also requested equipment for leak detection, an inventory system integrated with their accounting system, a training course on MS Project, and additional assistance with plant operating instructions.

- The Company reports completing an update of their **business plan**, and use of the plan to manage activities such as training planning, energy rationalization, leak detection and reduction, and planning of R&R projects. To meet their plan’s objectives, they requested WWSS training in energy use rationalization (incl. equipment training) and leak detection, and technical support in HR management. The **local working group** is reportedly active and beneficial for program monitoring.
- The WWSS pilot plant (el-Nasareya wastewater treatment plant) continues to maintain its **power factor** in the optimized range, and the Company prepared and implemented an action plan to analyze additional plants using the WWSS-provided measuring equipment.
- Following the WWSS technical training in **chemical use optimization**, the Company improved its chemical use procedures at the Kom Ombo plant. Specifically, they report increased efficiencies in water treatment through applying WWSS-recommended techniques in filter management.
- The WWSS **leak detection** trainees at the Company report utilizing the training to reduce leaks. They cannot measure the reduction, however, due to a lack of measuring equipment. They also requested equipment for measuring discharge (bulk meters) and pressure, and training on the WWSS-provided correlator.
- The WWSS-supported illustrated **operating instructions,** completed and delivered this past quarter, are on display and in use, and the Company has prepared similar instructions for other plants and intends to share them with WWSS and the Chairman before finalizing. They also requested a standard operating procedures manual to improve plant operations.
- Since last quarter, with WWSS assistance, the **MASTER** program has been activated in six plants, and, though they still require assistance, plant staff have entered necessary data and are issuing work orders. They are not yet using the reporting function for management and analyses.
- The Company’s HR division is implementing its **HR plan**, developed last quarter with WWSS assistance, and focusing on staffing planning and developing and implementing their annual training plan. They request additional WWSS assistance in developing a company organizational structure and job descriptions.
- The **ADVAC HR** module was installed this past quarter, and is not yet functioning as the data collection and integration phases are scheduled for next quarter. The Company utilizes the payroll module, provided by a

previous USAID program, in their headquarters and all districts, and we will integrate the HR module with Payroll in the coming quarter. They requested additional training, as well as a manual to continue training in the future.

- The Company's public awareness manager is reportedly very active, and has used the WWSS **Communication Guidelines** to further develop a number of activities. They requested additional training and computers for the PA staff.
- Following the WWSS workshop in **Capital Investment Planning**, the Company reports completing a work plan for investments, based on their master plan, and prioritizing R&R projects using techniques discussed in the workshop.
- **PRISM** is updated regularly, contains data on 100% of active projects, and is reportedly utilized by the Company to monitor project progress and budget, including projects implemented by NOPWASD. They reported problems with data entry with the old version, which have been resolved in version 2 with WWSS assistance.
- Though they face some problems with an unstable/slow internet connection, the Company is using **MARS**, Version 2, and updating all modules on a monthly basis. The chairman of the Company does not approve the data before it is submitted.

LUXOR

- The Company's **local working group** did not meet this quarter, but they reported that the group remains a useful tool for monitoring progress against their **business plan**. Implementation of that plan is progressing, and they requested assistance in developing their central lab, automating their inventory system, and improving their meter reading system.
- The **power factor** correction panel installed at the Luxor water treatment plant continues to maintain an improved power factor. For this and one additional feeder, they reported savings of LE 47,000 in penalties charged from 2009/2010 to 2010/2011. The Company has analyzed three additional plants using the WWSS-provided power factor analyzer, and is preparing the technical specifications for a request for proposals to purchase additional correction panels.
- Company staff continues to roll out the **chemical use optimization** activity. This quarter, they replicated the activity in the el-Toud compact unit plant, which resulted in reductions in both alum (from 8-12 gm/m^3 to 4-8 gm/m^3) and chlorine (from 5-6 gm/m^3 to 3.5-4 gm/m^3). On a monthly basis, the new doses save approximately 6 tons of alum, valued at LE 9,000, and 4 tons of chlorine, valued at LE 6,000, while maintaining water quality according to Egyptian standards. They are eager to receive the agreed-upon equipment from WWSS, including PH devices and turbidity measurement devices.
- Company-led roll-out of the **leak detection** program continues. The Company reports covering all of Luxor district with the program, and initiating the program in Bayadiya and Esna districts. They report saving 1,415,000 m^3 of water, valued at LE 1,415,000 (up to June, 2011), from reduction of technical losses only. They requested additional training for staff in districts outside of Luxor district, and equipment including ground microphones, correlators, and locator devices.
- The WWSS-supported **operating instructions** are posted and in use at some assisted plants, and the Company reports development of similar instructions for three additional plants (New Luxor, Esna, and Armant).
- The **ADVAC finance** module is functioning well at the Company, with daily data entry and periodic generation of financial statements. **ADVAC HR** is also functioning well, and the Company requested additional training, the renewal of the maintenance contract for one additional year, and the technical manual for the system.
- The **MASTER** CMMS is installed and operating at the WWSS-targeted plants, and, in an improvement from last quarter, plant staff report using the system's reports to monitor and plan the plants' use of labor and spare

parts, and to analyze trends in asset use. Further, the headquarters staff are using the reports from all MASTER installations to analyze company-wide maintenance costs, as well as plan for distribution of spare parts and manpower. They noted that the program is getting a lot of attention at the Company because it provides great benefits and enables strategic planning of resources.

- After completing its WWSS-supported **HR plan** last quarter, the HR division initiated implementation of a number of its activities, including the organizational chart, job descriptions, training plan, and staffing rationalization. They requested WWSS assistance in providing a template for job descriptions.
- **PRISM** is updated monthly and contains data on all nearly all active projects, but the Company does not use it for internal decision-making due to delays and difficulties in data collection.
- They have not yet started using **MARS**, Version 2, as data entry responsibilities have not been assigned at the Company for the technical, complaints, and commercial modules. However, they are using the old version of the program to enter economic analysis and financial data, and obtaining chairman approval on reports before submission. They report difficulty in data collection as their only remaining challenge with the system.

QENA

- The Company continues to monitor progress against its **business plan**, on (at least) a quarterly basis, led by their Strategic Planning unit. Like last quarter, they requested a training course on MS Project *(Note: this will be provided in Year 4 under the CIP/PM program)*. Though their **local working group** did not meet during the quarter, they maintained that it is a useful forum for internal communications, coordination with the project, and discussing and monitoring the progress of tasks.
- The WWSS-installed **power factor** correction panel at the Salheya plant is maintaining the optimal power factor, though measurement of its impact on their electricity bills is difficult as the bills also include consumption from adjacent, medium-voltage equipment. Though last quarter they reported further analysis in additional plants and purchase of at least one additional correction panel, no new equipment was purchased this quarter. The Chairman of the Company requested additional assistance in providing correction panels for medium-voltage loads.
- Company staff continues to report reductions in chemical consumption as well as improvements in water quality from applying the concepts from the WWSS-provided **chemical use optimization** training. They have applied the concepts and adjusted dosing at plants in Salheya, Deshna, Naga'a Hamady, and Qeft. In Salheya, they used 21.6 tons of alum in June of this year, compared with 40 tons in June of last year, by applying the jar test methodology for optimizing dosage (from 15 mgm/L to 8 mgm/L). This resulted in a savings of LE 33,000. They cited a need for additional assistance in installing or rehabilitating alum systems, applying improved sedimentation processes, and water sludge re-use.
- The Company's dedicated **leak detection** team has identified areas for leak detection and reduction activities, and has begun preparing a plan. They have not yet begun detecting and repairing leaks, however, because they lack the necessary equipment.
- The Company is waiting for WWSS delivery of the **operating instructions** for the Dandara Plant. In the meantime, using the WWSS template, they have developed instructions for two additional plants – el-Halla and el-Maseed.
- The **MASTER** CMMS is installed and operating at the WWSS-targeted plants, and plant staff report using the system's reports to monitor and plan the plants' use of labor and spare parts, and to analyze trends in asset use. Further, the headquarters staff are using the reports from all MASTER installations to analyze company-wide maintenance costs, as well as plan for distribution of spare parts and manpower.
- The HR team reports active implementation of their WWSS-supported **HR plan**, with a focus on: organizational chart development, training, ADVAC implementation, health benefits, and employee fringe benefit programs.

- The **ADVAC HR** system is utilized regularly, but it is still not integrated with the ADVAC accounting module (purchased and installed by GIZ). The Company requested additional training on the ADVAC HR system.
- Following the WWSS workshop in **Capital Investment Planning**, the Company reports completing a work plan based on their Master Plan, and implementing activities from the work plan related to GIS, master planning, and hydraulic analysis.
- **PRISM** is updated regularly, contains data on nearly all active projects, and is reportedly utilized by the Company for program management and decision-making.
- The Company is using **MARS**, Version 2, and updating the data on a quarterly basis, but they are not obtaining Chairman approval on reports before submission. They report that their only challenge in using the system is an unstable/slow connection.

SOHAG

- The Company, led by its Planning Division, continues to monitor progress against its WWSS-supported **business plan**, and they requested additional training, software, and equipment to improve the quality of some of their activities. The **local working group** met twice during the quarter and has managed to facilitate completion of nearly all joint activities on schedule.
- As reported last quarter, the Company purchased four additional **power factor** analyzers to evaluate all of their plants. They reported progress this quarter – they are currently installing power factor correction panels in most of their surface water treatment plants in order to rationalize their energy use and reduce costs.
- In an improvement from last quarter, the Company now reports applying the **chemical use optimization** activity in four plants (el-Maragha, Needa, el-Balyana, and Gerga) – they conducted the jar tests and break point tests and calibrated their alum and chlorine pumps. This reportedly resulted in a reduction in the chlorine and alum doses, and an improvement in the quality of water. They requested additional training in this area.
- After the WWSS-supported pilot and TOT program in **leak detection/reduction**, the Company has maintained an active leak detection program. They expanded the program in Akhmim City after the WWSS pilot, and, over a period of 1.5 months, report a reduction in leakage there from 35% to 25% (17% commercial losses and 8% technical), and a savings of 110,460 m^3 of water, valued at LE 27,615. *(Note: This is a low estimate, based on sale price of water, not actual cost).* They've developed plans for additional areas (in Gerga and Tahta), and activities there are currently underway.
- The **operating instructions** developed with WWSS assistance are on display and in use at the Maragha plant. The Company reports development of similar instructions for all remaining plants – surface water and artesian wells - in a larger size than the WWSS ones to ensure their readability. They requested additional training like that of Sayed Abdel Rafea, and that the instructions developed with WWSS for a wastewater plant be delivered.
- **ADVAC finance and HR** modules are functioning well at the Company; staff are entering data daily and generating financial statements periodically. They requested the inventory module as soon as possible to maximize their benefit from the program.
- The **MASTER** CMMS is installed and operating at the WWSS-targeted plants, and plant staff report using the system's reports to monitor and plan the plants' use of labor and spare parts, and to analyze trends in asset use. Further, the headquarters staff are using the reports from all MASTER installations to analyze company-wide maintenance costs, as well as plan for distribution of spare parts and manpower.
- The Company reports active implementation of its **HR Plan**, developed with WWSS assistance, through the development of an organizational structure and job descriptions, employee database, compensation and benefits system, social solidarity fund for employees, annual training plan and budget, and an improved training center.

- They report that the WWSS-provided **communication guidelines** were very beneficial in dealing with the media, surveys, and developing internet and social media tools.
- The Company reports using WWSS guidance in **Capital Investment Planning** to set their priorities for projects for submission to NOPWASD, and for developing their own annual plan for R&R projects, which is currently pending HCWW approval.
- **PRISM** is updated regularly, contains data on nearly all active projects, and is reportedly used to monitor project progress at the company level.
- They are using **MARS,** Version 2, updating the data at least quarterly, and obtaining Chairman approval on reports before submission. The primary obstacles they face in using the system are: 1) unexpected errors, and 2) unavailability of data.

ASSIUT

- Though the Company has initiated most of the programs in its draft **business plan**, developed with WWSS support, there is no one dedicated to monitoring their progress and they are not using the business plan to manage company activities. They noted that the individuals trained by WWSS have left the Company and the current employees are not aware of the plan. The **local working group** held one meeting during the quarter and is reported as a useful mechanism for coordinating with the WWSS team on joint activities.
- During this past quarter, the Company received its electric bill for 2010/2011 fiscal year. They reported that they saved LE 50,000 in penalties thanks to the two **power factor** correction panels installed by WWSS in the Nazlet Abdellah plant. The plant continues to maintain its power factor in the optimal range (0.95). They continue to have a sustained energy use rationalization program, with panels installed in more than 50 plants (before WWSS assistance), and are now providing their facilities with energy-saving light bulbs and additional training on power factor measurement.
- The Company continues to implement **chemical use optimization** processes in its plant labs. Specifically, they report conducting periodic lab tests to determine doses in the New Assiut, Abu Tig, and Czech plants, and monitoring application of those doses in actual treatment.
- Similarly to last quarter, the Company has not yet applied the **leak detection** training for reducing losses in their coverage area. They report that the training was theoretical and they requested practical training on the equipment.
- As reported last quarter, the WWSS-supported **operating instructions** are reportedly available for viewing in all assisted plants, and they have developed additional operating instructions for the el-Badary plant on their own.
- **ADVAC** finance and HR modules are fully functioning at the Company. Staff enter data on a daily basis, generate financial statements periodically, and have fully integrated the finance and payroll modules. They requested two additional licenses for the HR module, and expressed eagerness to implement the inventory module.
- The **MASTER** CMMS is installed and operating at the WWSS-supported plants, and plant staff report using the system to monitor and plan the plants' use of spare parts. They requested an explanation of additional benefits of the system.
- The **HR Plan**, completed with WWSS assistance, is not being implemented by the Company's HR team, and they requested additional assistance in operationalizing their "theoretical" organizational chart (previously completed with WWSS assistance).
- Following the WWSS workshop in **Capital Investment Planning**, the Company reports completing a plan for investments for 2011-2012, including forms for prioritization of R&R projects and, to some extent, water and wastewater greenfield projects.

- **PRISM** is updated regularly, contains data on nearly all active projects, and is reportedly presented to and utilized by upper management to monitor key indicators of project progress.
- The Company is using **MARS**, Version 2, and obtaining Chairman approval on reports before submission. The most common difficulties they face when using the system are: 1) unexpected errors when using the system; 2) unavailability of data; and 3) lack of an automated subsystem.

MINYA

The Chairman of the Company added some comments of appreciation for our assistance and noted that activities are going very well. He also requested additional technical support and equipment in leak detection and energy use rationalization.

- The Company reports initiating an update of their **business plan**, and use of the plan on a regular basis to monitor progress of activities. They also report that the **local working group** met monthly, and that the group remains a useful mechanism to follow up implementation of programs.
- The **power factor** correction panel at the Kedwan plant, where the WWSS pilot program was implemented, continues to rationalize the plant's energy use. The Company reports that the penalties were removed from a recent electric bill due to the panel's effectiveness. It uses the WWSS-provided analyzer to study the power factor in additional plants, and requested another analyzer to cover more plants with this activity.
- The Company continues to benefit from WWSS support in **chemical use optimization**. This quarter, they reported adjusting the alum injection technique at the New Beni Mazar's water treatment plant. Using the same amount of chemicals, they were able to improve the quality of the treated water.
- The WWSS-supported **leak detection** pilot in the Sultana area was completed, and the Company reports a reduction of leaked water there from 61% to 32%. The Company's leak detection team then applied the same techniques in the New Minya area, and succeeded in reducing leakage there from 69% to 32%. They requested two ground microphones as well as training on the WWSS-supplied digital correlator in order to further their work in this activity.
- The WWSS-supported **operating instructions** are on display and in use in some of the assisted plants, and plant staff make use of them in their operations. They have not yet developed instructions for other plants, and they request our financial assistance in doing so and in training of plant operators.
- The Minya Company is a success story in use of and benefit from the **MASTER** computerized maintenance management system. The system is utilized in 12 plants. In addition to generating work orders for maintenance tasks, the Company reports producing and utilizing MASTER reports at the plant and at headquarters for planning and analyzing spare parts, labor force utilization, statistical reports on plant assets, preventative and corrective maintenance costs by asset type, and labor force deployment across various plants. They requested additional assistance in studying application of a similar system for maintenance of vehicles and water/wastewater networks, and in establishing a MASTER unit at the Company to install and support the system in all plants.
- The Company's HR team completed its **HR plan** this quarter, and reports implementation of it through the development of a staffing plan. They requested additional assistance in this area – with automating and integrating HR functions across their branches.
- Following the WWSS workshop in **Capital Investment Planning**, the Company reports completing a plan for R&R projects for 2011-2012, and a five year plan for investments. They also report applying the concepts learned in the training to prioritize future investments. They also expressed new interest in fostering collaboration between the assets department and the economic analysis, master plan, and projects departments in investment planning efforts, and in expanding the role of GIS in their capital investment planning activities.
- **PRISM** is updated regularly and now contains data on 100% of their currently active projects, an improvement from last quarter.

- They are using all modules of **MARS,** Version 2, and updating the data at least quarterly. The main obstacles they face are: an unstable or slow connection, and the lack of an automated subsystem.

BENI SUEF

- The Company reports use of their **business plan** for monitoring company progress; they have initiated 41 of its 64 programs – 10 more than last quarter. Additionally, they recently consulted the business plan when developing their staffing plan, which was subsequently approved by HCWW. Their **local working group** met three times during the quarter, and they request more WWSS attendance at the meetings to ensure follow-up on activities.
- The WWSS pilot plant (Czech plant) continues to maintain its **power factor** in the optimized range, but the Company cannot calculate cost savings as: 1) the power factor penalty/bonus bill for the entire Company only comes at the end of the fiscal year, and 2) the plant's usage bill includes electricity consumption from adjacent plants and from the administration building. Using the WWSS-provided power factor analyzer, they have measured energy use in 34 additional facilities, and are planning to negotiate the penalties with the electric company. They also installed one additional panel, in the Reyad Basha plant, but, after installing it, found no change in energy consumption and have thus returned the panel to the manufacturer.
- The WWSS trainees in **chemical use optimization** report applying the training in the form of adjusted chemical doses in five additional plants. They cannot accurately measure the improvements in quantities of chemical use due to problems in the dosage data, and they proposed a workshop for plant managers and operators to develop a system to address this data quality issue.
- Work in the WWSS pilot area for **leak detection and reduction** (Bayad al-Arab and Sheikh Ali) was completed this quarter, and resulted in the reduction of lost water by 76,000 $m^{3.}$ The leak detection team has found leaks in three additional districts, totaling 7,500 m^3 of wasted water.
- The plant **operating instructions** developed with WWSS assistance are reportedly still posted and utilized in operation of the American, Ma'sarat Na'san, and Beba plants, but the Company has not developed instructions for additional plants due to a lack of staff. They also suggested the use of the posters as educational material in the local technical school.
- The **MASTER** CMMS is installed and operating at the WWSS-targeted plants, and plant staff report using the system's reports to monitor and plan the use of labor and spare parts, and to analyze trends in asset use. Further, the headquarters staff are using the reports from all MASTER installations to analyze company-wide use of spare parts and asset-related trends. Despite this reported success, they cited some challenges with the program due to lack of staff, and are currently recruiting to address this.
- The Company continues to implement its **HR Plan**, developed last year with WWSS assistance and updated recently. They have completed the organizational structure, are currently developing recruitment procedures, and request assistance with their staffing plan.
- Following the WWSS workshop in **Capital Investment Planning**, the Company reports completing a plan for investments for 2011-2012, including R&R and greenfield projects, along with a strategic plan for managing the Master Plan. Further, Company staff report that they prioritized projects using a weighting approach discussed in the workshop.
- **PRISM** is updated monthly, but the percent of projects represented in the program dropped to the 51-75% range this quarter. Reports are presented to the Chairman regularly for ongoing program/project monitoring.
- This past quarter, the Company upgraded to **MARS**, Version 2, and reports updating all modules at least quarterly and seeking Chairman approval before submission of reports. In addition to an unstable/slow connection and data collection difficulties, they report facing unexpected system errors and the lack of an automated subsystem in branch labs as challenges to system implementation.

GIZA

- The Giza Company, led by its Training Department, continues to monitor progress in implementing its **business plan**, completed with WWSS assistance, through weekly presentations to the Chairman of program status. Their current priorities include automating management functions, fully utilizing the WWSS-provided systems (MARS, ADVAC, MASTER, and PRiSM), supporting HR, improving their training facility and laboratories. Their **local working group** continues to meet monthly, and proved useful in coordinating the industrial waste study activity.
- They have used the WWSS-provided **power factor** analyzer to study energy use in various plants, but have faced repeated problems with the analyzer and have notified the vendor to repair the device.
- Following the WWSS-provided technical training in **chemical use optimization**, the Company applied the techniques in the Imbaba water treatment plant, which resulted in an adjustment in chemical doses according to the type of raw water treated. They reported that this adjustment of doses according to the type of raw water has reduced doses, overall chemical use, and cost of chemicals while keeping the quality of water constant.
- The Company reports applying the WWSS-provided training in **leak detection**, by conducting a comprehensive survey in Masged Mousa village in Atfeeh City, in southern Giza. As a result, they repaired 20 home connections and saved a significant amount of previously-leaked water – approximately LE 150 per day. In addition, they are preparing a new pilot area for conducting another leak detection and repair activity.
- The WWSS-provided **operating instructions** are available and utilized in the assisted plants, they report planning to develop similar tools at additional plants.
- **ADVAC** finance and HR modules are fully functioning at the Company. Staff enter data on a daily basis and generate financial statements periodically, but have not integrated ADVAC finance with other systems at the Company (including ADVAC HR), as the program is still in a trial phase. They requested additional training on the finance module, and noted some challenges with the HR module related to data entry, automated calculations of dates and deductions, and flexibility in editing previously-entered data *(Note: See questionnaire for additional detail).*
- **MASTER** is installed and functioning at the targeted plants, and, in an improvement from last quarter, plant staff report using its reporting function to monitor labor force utilization and assets. Despite having installations in 8 plants, it is not utilized at the Company level for aggregate analysis or planning. Company staff noted a number of comments on the program, including: 1) they are not sure of its storage capacity, and note that the system doesn't notify the user when they're approaching the limit; 2) lack of technical information on the work orders in the generated reports; 3) lack of retirement projections in employee data; 4) lack of depreciation reports and inventory balances; 5) lack of data on cost of spare parts; 6) lack of detailed comments in generated reports, and 7) some issues with the design of the monthly reports. They are eager to receive an updated version of the system which addresses these issues.
- The Company continues to implement its **HR Plan**, completed with WWSS assistance, and, as reported last quarter, is currently focusing on: collecting labor force data; implementing the ADVAC system; and revising the job descriptions and organizational structure for official approval.
- The public awareness unit reports continued use of the WWSS-developed **communication guidelines** in implementing their outreach activities.
- Following the WWSS workshop in **Capital Investment Planning**, the Company reports completing a plan for investments for 2011-2012. They also requested additional trainings in this area, which is planned in the WWSS CIP/PM training schedule.
- **PRISM** is updated regularly, contains data on nearly all of their active projects, and is reportedly utilized by the Company to monitor progress of project implementation and to identify projects that need attention.

- They are using all modules of **MARS,** Version 2, and updating the data at least quarterly, but the Chairman does not approve the data before its submission. The main obstacles they face are: an unstable or slow connection, and the lack of an automated subsystem.

MENUFIYA

- The Company reports initiating an update of their **business plan**, and use of the plan on a regular basis by their Planning Division to monitor progress of technical activities. They also report that the **local working group** is useful in planning and monitoring and inter-divisional communication, and they requested more regular meetings.
- The WWSS pilot plant (Ashmoun el-Bahary) continues to maintain its **power factor** in the optimized range, and they expect to know the savings by year's end when their electricity bill comes. Further, the Company is using the WWSS-provided analyzers to assess the rest of its plants, and to develop a plan for purchase of 19 corrective panels. They requested WWSS assistance in purchasing some of the required panels.
- WWSS TOT trainees in **chemical use optimization** have developed material and a plan to roll out the technical training within their Company, but they are waiting for WWSS technical assistance to launch the program. They also commented that the training could be strengthened by lengthening the sessions, providing accompanying equipment, and clarifying the audience (chemists or engineers).
- As reported last quarter, following the **leak detection** TOT program, the Company has formed a team within its O&M department for leak detection and reduction, and the team has identified a pilot area (in Taha Shoubra in Quessna) using WWSS criteria. This quarter, they found approximately 30 leaks in the area, coordinated repairs with the network maintenance team, and expect the results at the end of October. Further, they have developed a plan to roll out technical training to the 11 branches.
- The WWSS-supported **operating instructions** are on display and in use, and the Company is the process of developing such posters for 4 additional plants (el-Batanoun Artesian, Shaba Bas compact unit, Sengerg, and Kafr el-Batanoun artesian iron and manganese treatment).
- In an improvement from last quarter, **MASTER** installations in 3 of 4 plants are generating work orders and utilized for managing maintenance tasks. The fourth installation is still in the data entry phase. However, neither plant staff nor headquarters staff use the program's reporting function to analyze use of labor, spare parts, and assets over time.
- They continue to actively implement their **HR plan**; in particular, tasks including the development of job descriptions, opening of a technical secondary school, and applying a new organizational chart. They requested additional assistance from WWSS in implementing their staffing plan (developed with WWSS assistance).
- Following the WWSS workshop in **Capital Investment Planning**, the Company has applied the training to develop a work plan for the coming year, and they are waiting for NOPWASD's endorsement to begin implementing the plan.
- **PRISM** is updated regularly and contains data on nearly all active projects, and they report using the program's reports to monitor progress and identify obstacles. They also noted that their data quality has been reduced as they stopped using standardized forms for data collection within the Company.
- They are using **MARS,** Version 2 and updating the data at least quarterly, but they are not obtaining Chairman approval on reports before submission. The top three obstacles they face are: unstable/slow connection, unexpected errors when using the system, and lack of an automated subsystem.

MATROUH

- The Company completed its draft **business plan** in January of 2011, but implementation has suffered from two changes of chairmen and numerous upper-management staff changes. To date, no one has been assigned

to monitor its implementation, but the draft plan has been used to some extent to guide implementation and monitoring of activities. The **local working group** did not meet this quarter, but they maintain that it's a useful tool and would like to have more meetings to keep their work on track in the difficult environment in which they operate.

- The Company reports using the WWSS-provided **power factor** analyzer to measure plant energy use, but they have faced repeated problems with the analyzer and await assistance from WWSS. They have not yet purchased any correction panels to make the necessary adjustments to energy use.
- Following the pilot and training on **chemical use optimization**, Company staff have not continued to measure and adjust chemical dosing in its single treatment plant in South Alamein. They noted that except for one individual, all of the trainees were headquarters staff and not laboratory staff, and because of this, they do not have the opportunity to apply the training.
- Following the **leak detection** TOT program, the Company has not initiated any such activity. They noted that the general training provided by WWSS was very good, but the practical training was inadequate and did not include training on the equipment (correlator, ground microphone, cover locator, noise logger, etc). They requested such training and additional follow up on the trainees' practical work.
- The WWSS-supported **operating instructions** are on display and in use in the assisted plants, but they have not developed additional instructions. They noted that the instructions are very simple and requested more detailed instructions in a larger number of plants and pumping stations.
- The **ADVAC** finance module is fully functioning at the Company. Staff enter data on a daily basis, generate financial statements periodically, and have integrated ADVAC finance with other systems at the Company (including ADVAC HR). Their ADVAC HR module is also functioning well. They recently solved the problem of cooling the server (reported last quarter), and intend to maintain communications with ADVAC to solve other minor, occasional issues.
- The **MASTER** installation, in the South Alamein treatment plant, is not being used, as the data entry is not yet completed. Additionally, they report a lack of budget, vehicles, and allocated personnel for preventive maintenance, so they only perform emergency maintenance tasks.
- Their **HR Plan**, completed with WWSS assistance, was last updated in May, 2011, and is being used to guide utility HR activities including the development of an organizational chart, job descriptions, performance evaluation forms, and committees for health, social care, and housing. They requested additional WWSS assistance in developing a staffing plan and job descriptions.
- Following the WWSS workshop in **Capital Investment Planning**, the Company has not applied the training to develop a work plan for the coming year because they lack the budget for projects other than small R&R projects.
- **PRISM** is updated regularly and, in an improvement from last quarter, now contains data on 100% of their active projects. They report linking PRiSM to MS Project, and using both systems to monitor deviations and make decisions about project implementation. They have not yet activated PRiSM, Version 2.
- They are not yet using **MARS,** Version 2, and the top three obstacles they face with the old version are: unexpected errors when using the system, difficulty in collecting the data, and the lack of an automated subsystem.

SINAI

- The Company has completed all sections of its **business plan** except the financial section, which they aim to finish in October at an internal workshop. They outlined clear priorities in their plan, and requested WWSS assistance in addressing some of them, including: training in O&M of desalination plants; energy use rationalization; and chemical use optimization. Their **local working group** met once during the quarter, and is reportedly useful for coordinating with WWSS on joint activities.

- Though they reported active use of the WWSS-provided **power factor** analyzer last quarter, they did not continue to use the device this quarter to measure plants' use of electricity. They requested technical assistance and practical training in designing, producing, and installing their own power factor correction panels, to save money spent on penalties to the electric company.
- After the WWSS-provided **chemical optimization** training, utility staff analyzed chemical use in various plants. In both the North Sinai and Gharb el-Nafaq plants, they adjusted the way they determine the doses of both alum and chlorine, and improved accuracy. The chlorine usage at both plants remained the same, but the alum dose at the Gharb el-Nafaq was reduced from 50 mg/l to 12 mg/l, saving 19.5 tons of alum monthly (valued at LE 12,500 per month). At the North Sinai plant, the alum dose was reduced from 25 mg/l to 20 mg/l, saving 3 tons of alum (or LE 2,000) monthly. They also noted that their alum and chlorine pumps are old and inefficient, and that without flow meters, their measures of water produced remain somewhat inaccurate.
- Similarly to last quarter's report, the WWSS trainees in **leak detection** have not yet applied the training or provided follow-on training to others. To initiate leak detection activities, the utility requests additional technical training and procurement of equipment from WWSS.
- As reported last quarter, the **operating instruction** posters were never finished, though WWSS advisors did assist with taking the necessary photographs. They request additional training in this area.
- The **ADVAC finance** module is functioning well; staff are entering data daily and generating financial statements. The **ADVAC HR** module, however, is not yet fully functional; they report difficulty in data collection from geographically outlying division, and in accurately entering salary and benefit data as its repeatedly changing due to strikes and other labor action. For this and other reasons, the finance and HR modules are not yet integrated. They request additional training on SQL databases and on the HR module, and assistance from ADVAC on the mechanics of the HR module.
- The **MASTER** CMMS was installed in 4 plants this quarter, two of which are producing work orders while the other two are still in the data entry phase. Once these pilot plants are fully functional and generating reports, they plan to install it in approximately 25 additional plants.
- They are currently drafting their Company's **HR Plan**, with WWSS assistance, and have prioritized therein the organizational chart and job descriptions, and development of a performance evaluation system. They request WWSS assistance in completing these tasks, and we will assist them with the former in Year 4.
- The public awareness unit reports using the **communications guidelines** to develop media materials and posters for a series of 9 water conservation seminars.
- Following the WWSS workshop in **Capital Investment Planning**, the Company has applied the training to develop a five-year work plan for R&R for 2012 – 2017. They commented that the workshop was too short to be practical, but that the concepts were useful in prioritizing projects when you have a limited budget.
- **PRISM** is updated regularly, contains data on nearly all active projects, and is reportedly used by management to monitor project implementation status. They report difficulty in data collection – they cannot travel to collect forms or verify data due to the security situation. They also struggle with a slow internet connection.
- They are using **MARS,** Version 2, updating the data monthly, but they are not obtaining Chairman approval on reports before submission. The top three obstacles they face are: unstable/slow connection, difficulty in collecting the data, and unexpected errors when using the system.

ANNEX C: OVERVIEW OF YEAR 4 ACTIVITIES BY GOVERNORATE

	HCWW Regional Subsidiaries												
WWSS Activities	**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
Development and Use of Business Plans	x	x	x					x		x		x	x
Human Resources Management/ Development													
HR Plan Development and Implementation	x	x	x					x		x		x	x
Staffing and Organizational Design	x	x											x
ADVAC HR Module	x	x	x	x		x	x	x	x	x	x	x	x
Establish Training Facilities												x	x
AUC Seminar Series	x	x	x	x	x	x	x	x	x	x	x	x	x
Young Professionals Development Program	x	x	x	x	x	x	x	x	x	x	x	x	x
Capital Investment Planning and Program Management													
Capital Investment Planning Manual and Related TA	x	x	x		x	x	x	x	x	x	x	x	x
Hydraulics Training	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
MS Project Training	x	x	x		x	x	x	x	x	x	x	x	x
Project Management Technical Assistance	x	x	x					x		x		x	x
Small-Scale FARA Projects Support	x	x	x				x			x	x	x	x
Public Awareness and Communications													
Small-Scale FARA Project Outreach	x	x	x				x			x	x	x	x
Financial Management													
ADVAC Finance	x					x	x	x				x	x
ADVAC Inventory	x							x				x	x
Operations and Maintenance													
Energy Use Rationalization	x	x	x					x		x		x	x
Chemical Use Rationalization	x	x	x					x		x		x	x
Operating Instructions and MASTER	x	x											
Leak Detection and Reduction	x	x	x					x		x		x	x
Laboratory Equipment and Strengthening	x	x	x					x		x		x	x
O&M Planning	x	x											

Cross-Cutting Activity

ANNEX D: WORK PLAN TIMELINE

	Tasks and Sub-tasks	WWSS Responsibilities	1	2	3	4	5	6	7	8	9	10	11	12	Outputs / Deliverables	Resources: STTA, subcontractors, donor projects
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Component A: Assistance to the Holding Company for Water and Wastewater																
Activity HC 1 – Provide technical support to USAID-financed management information systems		**Eng. Ibrahim Sabri**													MARS and MASTER Technical Documentation	
1.1 MARS	Task HC 1.1.1 – Hand over MARS final technical documentation to HCWW															
	Task HC 1.1.2 – Fix MARS bugs and consult as needed with HCWW team															
	Task HC 1.1.3 – Support integration of MARS with ADVAC															
1.2 MASTER	Task HC 1.2.1 – Hand over final MASTER technical documentation to HCWW															
	Task HC 1.2.2 – Fix MASTER bugs and consult as needed with HCWW team															
Activity HC 2 – Finalize and support roll-out of employee performance evaluation system in HCWW and its subsidiaries		**Ms. Madiha Afifi**													Proposed forms and procedures	
	Task HC 2.1 – Seek and obtain HCWW leadership approval of proposed system															
	Task HC 2.2 – Facilitate workshop for HCWW division and department managers															
	Task HC 2.3 – Test the system in select HCWW departments															
	Task HC 2.4 – Support company-wide roll-out															
	Task HC 2.5 – Support adaptation and roll-out of the system for subsidiaries															
Activity HC 3 – Complete upgrade of the HCWW website		**Ms. Kathleen Sheridan**													Final HCWW website and intranet	ST consultant for web development
	Task HC 3.1 – Finalize content for external website															
	Task HC 3.2 – Complete development for external website															
	Task HC 3.3 – Launch prototype of external website															
	Task HC 3.4 – Pending HCWW approval, develop internal "intranet" site															

Tasks and Sub-tasks	WWSS Responsibilities	1	2	3	4	5	6	7	8	9	10	11	12	Outputs / Deliverables	Resources: STTA, subcontractors, donor projects
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Component B: Cross-Cutting Activities															
Activity CC 1 – Continue implementation of training and TA program in Capital Investment Planning and Program Management	**Eng. Mohamed Hashem**													CIP/PM Training Materials	Chemonics Egypt CIP/PM Team
Task CC 1.1 - Deliver 5-day Hydraulic Modeling Workshops															
Task CC 1.2 - Deliver 2-day Hydraulic Modeling practical training sessions															
Task CC 1.3 - Complete 3-day Standard Contracting Documents workshops															
Task CC 1.4 - Deliver 5-day MS Project workshops															
Task CC 1.5 - Provide Project Management Assistance to each targeted subsidiary															
Task CC 1.6 - Provide OJT and field-based follow up to targeted subsidiaries															
Activity CC 2 – Replicate AUC Utility Management Certificate training program	**Ms. Madiha Afifi**													AUC Course Training Materials	AUC subcontract
Task CC 2.1 - Hold graduation ceremony for first group of graduates															
Task CC 2.2 - Recruit second group of candidates															
Task CC 2.3 - Implement course for second group of candidates															
Task CC 2.4 - Recruit third group of candidates															
Task CC 2.5 - Implement course for third group of candidates															
Activity CC 3 – Pilot Junior Professional Development Program	**Eng. Mohamed Hashem**													JPDP Program Curriculum	
Task CC 3.1 - Recruit and select candidates															
Task CC 3.2 - Develop course material and action plan															
Task CC 3.3 - Implement program															
Activity CC 4 – Facilitate high-level seminars and presentations for government, regulatory, and utility leaders	**Eng. Mohamed Hashem**														Coordination with WPRR
Task CC 4.1 - Facilitate quarterly presentation to subsidiary leadership															

	Tasks and Sub-tasks	WWSS Responsibilities	1 Oct	2 Nov	3 Dec	4 Jan	5 Feb	6 Mar	7 Apr	8 May	9 Jun	10 Jul	11 Aug	12 Sep	Outputs / Deliverables
Component C: Subsidiary Specific Activities															
	Activity SS 1 – Support joint local working groups	**Eng. A. Allam, Ms. M. Afifi**													Subsidiary-specific action plans
	Task SS 1.1 - Review business plans and develop annual action plans with each targeted subsidiary														
	Task SS 1.2 - Facilitate bi-monthly local working group meetings in 7 targeted subsidiaries														
	Activity SS 2 - Facilitate subsidiary-led training on WWSS efficiency-improvement interventions	**Eng. A. Allam, Ms. M. Afifi**													
	Task SS 2.1 - Hold recapitulatory workshops for designated trainers from targeted subsidiaries														
	Task SS 2.2 - Conduct supervisory visits to monitor course delivery														
	Activity SS 3 - Support local roll out of efficiency improvement programs														
	Timing will be determined by subsidiary action plans.														
	Activity SS 4 - Support select subsidiaries in preparing and operationalizing staffing plans and organizational structures	**Ms. Madiha Afifi**													Organizational structures
	Task SS 4.1 - Support Aswan WWC's development of an organizational structure and job descriptions														
	Task SS 4.2 - Support Assiut WWC's update of their organizational structure and development of mandates and job descriptions														
	Task SS 4.3 - Support Sinai WWC's development of an organizational structure														
	Activity SS 5 - Support automation of select management functions	**Eng. I. Sabri, Mr. M. Abdel Hamid**													
5.1 ADVAC	Task SS 5.1.1 - Conduct bi-monthly follow up field visits to targeted subsidiaries monitor system use and provide on-site technical assistance														
5.1 ADVAC	Task SS 5.1.2 - Liaise between ADVAC and subs to ensure technical assistance is provided														
5.2 ADVAC Inventory	Task SS 5.2.1 - Procure inventory control module for 4 companies														
5.2 ADVAC Inventory	Task SS 5.2.2 - Conduct training														
5.2 ADVAC Inventory	Task SS 5.2.3 - Monitor subs' data entry														
5.2 ADVAC Inventory	Task SS 5.2.4 - Monitor and troubleshoot subs' use of the system														
5.2 ADVAC Inventory	Task SS 5.2.5 - Support integration with general ledger and cost accounting														
5.3 Cost Accounting	Task SS 5.3.1 - Develop system requirements and obtain cost estimate														
5.3 Cost Accounting	Task SS 5.3.2 - Purchase and install system in one subsidiary														
5.3 Cost Accounting	Task SS 5.3.3 - Train users on system and concepts														
5.3 Cost Accounting	Task SS 5.3.4 - Monitor and troubleshoot subs' use of the system														

	Tasks and Sub-tasks	WWSS Responsibilities	1	2	3	4	5	6	7	8	9	10	11	12	Outputs / Deliverables	Resources: STTA, subcontractors, donor projects
			Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
	Activity SS 6 - Establish training facilities in Sohag and Sinai	**Ms. Madiha Afifi**														
	Task SS 6.1 - Deliver equipment to Sohag and South Sinai training facilities															
	Task SS 6.2 - Deliver equipment to North Sinai training facility															
	Task SS 6.2 - Support Sohag and Sinai training centers in developmetn of training plans and other related activities															
	Activity SS 7 - Equip South Sinai (Gharb el-Nafaq) plant laboratory	**M. Madiha Afifi**														
	Task SS 7.1 - Deliver lab equipment to facility															
	Task SS 7.2 - Provide training to lab personnel															
	Task SS 7.3 - Support lab personnel in developing an organizational structure, mandate, job descriptions, and procedures															
	Activity SS 8 - Procure vital equipment for efficiency improvement programs	**Eng. Ahmed Allam**														
	Task SS 8.1 - Identify targeted facilities and complete a needs assessment															
	Task SS 8.2 - Outline specifications for equipment purchase															
	Task SS 8.3 - Procure and deliver equipment															
	Activity SS 9 - Assist in the implementation of small-scale infrastructure projects	**Eng. Ahmed Allam**														
	Task SS 9.1 - Complete implementation oversight in Beni Suef and Sohag															
	Task SS 9.2 - Assist additional subsidiaries in project identification, planning, oversight, and reporting															
	Activity SS 10 - Implement JCESD public outreach and education campaign														Public outreach materials	Subcontract with DBA for Beni Suef and Sohag
	Task SS 10.1 - Complete campaign implementation in Beni Suef and Sohag															
	Task SS 9.2 - Develop and implement campaigns for additional subsidiaries															
	Activity SS 11 - Draft Standard Operating Procedures (SOPs)	**Eng. Ahmed Allam**													4 standard operating procedurse (2 W, 2 WW)	
Aswan	Develop SOPs for Wastewater Treatment Plant															
Aswan	Develop SOPS for Water Treatment Plant															
Sohag	Develop SOPs for Wastewater Treatment Plant															
Sohag	Develop SOPS for Water Treatment Plant															
	Activity SS 12 - Develop and activate O&M management in Aswan and Sohag														1 O&M Plan	
Aswan	Develop O&M plan for Kom Ombo branch of Aswan Company															
Aswan	Develop operational structures to implement the plan															
Aswan	Conduct periodic follow up visits															
Sohag	Develop O&M plan for Maragha branch of Sohag Company															
Sohag	Develop operational structures to implement the plan															
Sohag	Conduct periodic follow up visits															

Tasks and Sub-tasks	WWSS Responsibilities	1	2	3	4	5	6	7	8	9	10	11	12	Outputs / Deliverables	Resources: STTA, subcontractors, donor projects
		Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
Component D: Program Development and Coordination															
Activity PDC 1 - Monitor, evaluate, and report project progress	**Ms. Kathleen Sheridan**													Quarterly reports, Completion report	
Task PDC 1.1 - Conduct quarterly assessment															
Task PDC 1.2 - Analyze and report annual indicator values															
Task PDC 1.3 - Publish quartelry reports															
Task PDC 1.4 - Prepare completion report															
Activity PDC 2 - Develop and implement a communications plan for USAID in the water and wastewater sector	**Mr. G. Nakad, Ms. K. Sheridan**													Project Communications Plan	ST Communications Specialist(s)
Task PDC 2.1 - Develop project communications plan															
Task PDC 2.3 - Implement activities in the agreed-upon communications plan															
Activity PDC 3 - Plan, manage, and report on field trips and training events	**Ms. M. Afifi, Eng. A. Allam**														
Task PDC 3.1 - Prepare and circulate monthly travel schedule															
Task PDC 3.2 - Prepare and submit field trip reports															
Activity PDC 4 - Conduct procurement needs assessment and plan for Year 5	**Ms. M. Afifi, Eng. A. Allam**													Procurement Plan	
Task PDC 3.1 - Conduct needs assessment of targeted companies															
Task PDC 3.2 - Finalize a prioritized list of equipment and specifications															

ANNEX E: CONTRACT DELIVERABLES MONITORING MATRIX

	Year 1	Year 2	Year 3	Year 4 *(Planned)*
	Nov 08 - Oct 09	Nov 09 - Oct 10	Oct 10 - Sept 11	Oct 11 - 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
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 1
Public awareness plans for subsidiaries	√	HC 3, HC 4, CC 6	CC 4, Beyond 2	
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				
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	SS 5
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
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
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/ww 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
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
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
Training in project preparation and supervision			SS 9	SS 9
Reports on the quality and timeliness of the projects executed			CC 6, SS 9	SS 9
Operations and maintenance planning methodology		CC 8	CC 3	SS 12
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

	Year 1	Year 2	Year 3	Year 4 *(Planned)*
	Nov 08 - Oct 09	**Nov 09 - Oct 10**	**Oct 10 - Sept 11**	**Oct 11 - Sept12**
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 facilitiesin 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				