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THE MID-EGYPT
PROVINCIAL CITIES DEVELOPMENT PROJECT
(263-0127)

MID-TERM EVALUATION
MARCH 1984

AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C.

TEAM

PAMELA R. JOHNSON, TEAM LEADER

ROBERT KACHINSKY

JANE NANDY

SIEGBERT SCHACKNIES

WITH THE PARTICIPATION OF

ABOU EL MAATY OMAR

KASEEM MICHAEL

MOUSTAFA DAHY



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1. EXECUTIVE SUMMARY AND RECOMMENDATIONS

1.1 EXECUTIVE SUMMARY

The Provincial Cities Development (PCD) project was authorized in August 1981 with a grant of \$75 million and a total life-of-project cost of \$100 million. The project is directed toward the capital cities of the governorates of Beni Suef, Fayoum and Minya, all cities along the Nile with a total population of approximately 500,000. The purpose of the project is to improve and expand the institutional capacity of these three mid-Egypt governorates and their capital cities to identify, plan for, budget, finance, construct and maintain urban infrastructure and services at the municipal level. This purpose is intended to (i) strengthen the local governments' authority and skills to manage urban growth and provide essential public services and (ii) provide local government staff with experience in allocating and using resources and in developing the financial and other mechanisms to carry out their infrastructure program. The project was developed to support the Government of Egypt's (GOE) policy of administrative and financial decentralization on the premise that increased local government responsibility for infrastructure programs would result in a more equitable, self-sustaining, and, hopefully, a more efficient, development process.

A Project Steering Committee coordinates project activities and includes representatives of the Ministries of Planning, Local Government, Finance, Investment and International Cooperation, the National Organization for Potable Water and Sanitary Drainage, the three Governors and the three Chairmen of the cities' Executive Committees. The departments of the municipal governments are the primary counterparts and implementing agencies for the project.

A technical assistance contract was signed on May 9, 1982 with Wilbur Smith Associates (WSA) with subcontracts with Public Administration Services (PAS) and Engineering and Geological Consulting Office (EGCO) to provide technical assistance and

consulting services. The contractor maintains an office in Cairo and in the three provincial cities, each of which is staffed by one Egyptian and one expatriate professional. Project activity to date has been directed largely to the preparation of master plans for water and wastewater infrastructure for the three cities and to the identification and implementation of urgent subprojects.

This, the first evaluation of the project, was carried out by an interdisciplinary team with the participation of the three foreign service national engineers who monitor the project. The team found that, in the first half of the project, there have been a number of achievements:

- Draft master plans have been completed for water and wastewater infrastructure in the three cities.
- 135 subprojects have been funded and 73 have been completed. As of the date of the evaluation, LE 7,532,000 (Egyptian pounds) have been subobligated and LE 3,892,000 expended for subprojects: the procurement of equipment and vehicles (41%); rehabilitation and extension of portions of the water and sewer network (20%); initial and interim repair and re-equipment of treatment plants (29%); road construction (6%); and consulting services and other (4%).
- The cities' municipal staffs have moved past the embryonic stage of composing wish lists and are, with the help of the resident advisors and the project monitoring engineers, making better subproject selections and thinking through design and justifications more carefully. In one city, the Elected Council has begun to be involved in subproject selection.
- Almost all of the contracts for construction and subproject consulting services have been awarded to private Egyptian firms. The project is beginning to show an unanticipated positive impact on the operations of some of the private sector contractors.
- The project's resident advisors have established offices in the three provincial cities and have begun to provide management and technical advisory services to city staffs.
- As a result of training and subproject implementation, the municipalities have improved their procurement processes, especially the preparation of tender documents for subprojects and evaluation of bids.
- To date, a total of 338 municipal employees have been trained in 18 training courses.

Despite these accomplishments, there are a number of concerns which have arisen and the Mission and the project officer are to be commended for scheduling an evaluation at this time.

From the beginning, the PCD project was conceived as a mix of capital and capacity-building components. There have been accomplishments in the building of capacity, but the emphasis of project activity and AID's management focus have been on the project's capital components.

To achieve its capacity-building objectives, the project has adopted a strategy of "learning by doing," dealing with tasks and problems as they come up, primarily in the context of subprojects. What is clear from the project's success in key but circumscribed areas is that the city bureaucracies are responsive to external assistance. The team was struck by the fact that, where assistance had been given, city employees had improved performance levels and were motivated. However, the approach in and of itself and the current level of effort are not, in the team's view sufficient to address the very serious deficiencies in municipal planning, operations and maintenance, contract management and budget and finance as they relate to water and wastewater infrastructure. It is urgent that an implementation plan for a program of technical assistance in management be agreed upon and implemented. If an expanded management and supportive training program is not implemented immediately, one cannot be optimistic about the achievement of the project's capacity building purpose.

At the same time, many of the problems which the cities face go well beyond the purview of the municipal employees on the departmental level. Several of the key issues, most notably those related to revenue retention, can only be resolved in the context of national policies and decisions.

A series of concerns derive from the fact that, the cost of implementing the proposed master plans far exceeds available funds. The original master plan estimate of \$314 million has been corrected and adjusted downward in several revisions. The magnitude of these costs means that the full systems that were originally envisioned, including improved water and wastewater treatment and full distribution and collection, can no longer be provided with authorized funds. Additional funds must be obtained or difficult choices made on priorities and staging of infrastructure investments.

The team found that, at the time of the evaluation, the GOE and the local governments involved had not been provided with a clear understanding of the local investment or recurrent costs requirements of the recommended infrastructure.

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Speaking more broadly, the project has not yet begun to address the underlying question of the financial viability of existing or planned infrastructure investments. The questions of revenue generation and retention were included as covenants to the Project Agreement. Assistance to the local governments in the financial arena was to have been an important part of the management advisory component of the project. The project paper recognized that fully achieving financial viability might not be possible within the time frame and scope of this project. Nonetheless, it anticipated that the project would take concrete actions to lay the necessary foundation for financial viability.

The implementation of subprojects has been both the incentive and the means for capturing municipal interest and introducing incremental change as well as achieving potentially rapid impact on urban economic infrastructure and on the private construction trade. The cities are anticipating a rapid and visible impact of the project as subprojects come on stream, particularly those which extend the distribution and collection network and increase water availability.

It is likely that the PCD municipalities are equipped to assume greater responsibility for subproject selection and implementation by virtue of their staff and the presence of resident advisors. However, because PCD was originally approved separately from the decentralization sector, the requirements for subprojects meeting 611A requirements have been interpreted in a more stringent form than has been approved and employed in the decentralization portfolio as a whole. As a result, AID has been involved in a level of subproject review and approval which detracts from the decentralization of decision-making in addition to occupying three full-time engineers as project monitors. If the purpose of decentralization is to be affected, the procedures and the way that they are applied need to be more consistent with that purpose.

The training program, after nearly two years of implementation, has had a disappointing impact. Much of the training has been reactive, academic, and somewhat unrelated to current processes and equipment. A serious effort is needed to focus the training program to meet the manpower and training requirements for implementing the subprojects and operating the current plants and network as well as preparing for the requirements of system expansion anticipated under the master plans.

The project faces major choices at this point, not only with respect to the scope of the infrastructure it will seek to provide but also with respect to the balance between capital investments and decentralized capacity-building. Decisions need to be taken as to which should receive major emphasis and which should be subordinate and to which set of goals and policy objectives the project should relate.

1.2 SUMMARY RECOMMENDATIONS

- 1) The Mission must determine which portfolio the project fits within and amend project documents and adjust project management to reflect this decision. The Mission has three options:

Option One

Amend the project paper to reflect a shift of the project to one which emphasizes capital infrastructure in water and wastewater without adding additional funds.

Recommended Actions:

- 1) Amend the project purpose, logical framework and financial and economic analyses.
- 2) Stage infrastructure investments to permit proceeding on priority facilities.
- 3) Delete the PCD project from the Decentralization Sector.
- 4) Define the objectives of the management advisory component of the project in terms of the viability and sustainability of existing and planned facilities in water and wastewater.
- 5) Define the relationship of the PCD project to other water and wastewater projects and to the policy issues in that portfolio.

In the team's view, there are factors which should be considered in choosing this option. The policy issues in the water and wastewater sector are ill defined with respect to secondary cities and the analytic base for defining them is weak. Without a definition of these issues, linking the project to a new sector may slow implementation.

Option Two

Amend the project paper to reflect a shift of the project to one which emphasizes capital infrastructure in water and wastewater,

adding additional funds to fund fully the recommendations of the master plans.

Recommended Actions: See Option One

It should be noted that, in the team's view, it would be unwise to make additional major commitments of funds to the water and wastewater infrastructure of these three provincial cities without a better indication that the operation and maintenance of the new systems will be assured and that the question of financial viability will be addressed. At the same time, the team found that there is a willingness to address these issues in the three cities, and perhaps an even greater ability to do so than in the primate cities of Alexandria and Cairo.

Option Three

Redirect project toward original emphasis on decentralization and capacity building.

Recommended Actions:

- 1) Stage water/wastewater infrastructure investments in plants over time to permit proceeding on priority facilities, but retain a significant portion of funds and proceed rapidly to implement locally defined subprojects in water and wastewater, roads, and solid waste.
- 2) Request USAID Legal Advisor/Egypt to clarify the requirements for compliances with 611A for subprojects funded under this project as they relate to procedures followed in the Decentralization Sector Support PAAD and, if necessary, amend the project authorization to make the 611A requirements consistent with that document.

The following recommendations pertain no matter which option is pursued.

- 2) Review the master plans and develop one or more alternative proposals for staging investments. A clear presentation, in Arabic, of the staging options should be presented to governorate and city officials. At a minimum, that presentation should lay out the services that would be provided under various options and present the assumptions about GOE financing of investment and recurrent costs.

- 3) As a follow-on to the master plan activity, the contractor should assess the recurrent costs and manpower requirements implicit in the master plans. This should form the basis for a more realistic understanding by the cities of their own needs, improved annual planning, programming and budgeting, and for planning appropriate training programs.
- 4) A scoped environmental assessment of the proposed modifications to wastewater treatment facilities and new construction be carried out, including a consideration of the environmental impacts of different implementation schedules and staging options.
- 5) The team recommends using conventional engineering services first in lieu of a design-construct approach to master plan implementation.
- 6) AID should reach immediate agreement on objectives for the management component of the project and instruct the TA contractor to implement a management program directed at the following priority areas:
 - Utility organization and management
 - Financial management
 - Operation and maintenance
 - Contract management (to include construction supervision)
- 7) AID, the TA contractor the GOE and the local governments need to address the question of financial viability of the proposed systems. As an immediate first step, this requires the recommended assessment of the investment and recurrent cost requirements and of the cities' abilities to meet these costs under alternate assumptions about revenue generation and retention. AID should monitor GOE performance on the covenants in the grant agreement which relate to financial viability or amend them to reflect project plans for the achievement of financial viability. Other feasible actions include fostering awareness on the part of governorate and municipal officials of the magnitude of the financial requirements to operate and maintain the system, establishing a cost accounting system and strengthening the cities' capacity to collect and retain revenues. Financial issues are, of course, tied to national decisions and policies. However, if, on the national level, a decision were taken to raise tariffs tomorrow and local entities were allowed to retain them, Beni Suef, Fayoum and Minia would not have adequate systems in place to collect them.

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- 8) The TA contractor should review immediately the lessons learned from the current training program, and develop an implementation plan for training which sets priorities and measurable targets related to performance and lays out:
 - a. interim objectives to be accomplished in the next six months, and
 - b. the longer-term role of training in implementing the management program, the master plan recommendations, and the objective of a trained municipal cadre, however defined, at the end of the project.
- 9) The PP recommended a level of technical assistance (TA) which was unrealistically low to achieve the stated purposes. Based on the development of an implementation plan for training, expand the TA component of the project to add an additional year of a long-term training advisor and additional short-term technical advisory services in such areas as environmental engineering, solid waste management and transportation.
- 10) The implementation of subprojects has been both the incentive and the means for capturing municipal interest, introducing incremental change and achieving rapid impact. A very substantial proportion of project resources should continue to go to the funding of subprojects. To achieve the potential visibility and impact of the PCD project, a substantial emphasis will have to be placed on subprojects which extend the distribution and collection network. Other examples of possible subprojects which complement the master plan but are either not included or touched only lightly are: expanded water metering; sewer cleaning; disposal of excluded wastes; improved septic haulage; and an experimental revolving loan fund for household service connections. There are also opportunities for subprojects which use and support the equipment purchases already made.
- 11) To the extent prudent and feasible, delegate authority to the municipalities for approval of sub-projects. Concurrence by the Elected Council may also be desirable. This would necessitate developing clear guidelines for acceptable subprojects and orienting municipal officials in both technical and financial guidelines and procedures.
- 12) AID and the contractor will need to give considerable thought to the staff requirements and structuring of an accelerated and expanded program of subproject implementation including providing improved contractor surveillance and enhancement of

the private sector. One option is to expand the resident advisory staffs in each city by one Egyptian advisor. In such a case, each city should be staffed by two engineers and one management/training specialist.

- 13) The contract and the annual work plan of the technical assistance contractor should be revised to the extent necessary to reflect the Mission's decision on the option to be pursued on the above recommendations. In general, annual work plans need to be written so as to reflect project objectives more closely and to provide a better basis for future evaluation of contractor performance.
- 14) AID project monitoring should give greater weight to the management, training and technical aspects of the project. To permit this, the contractor's annual work plans should place more emphasis on planned accomplishments in these areas, particularly in terms of measurable performance standards.
- 15) Schedule a follow-on evaluation in approximately 12 months to evaluate improvements in management and training components, contractor performance and the desirability of additional funding.

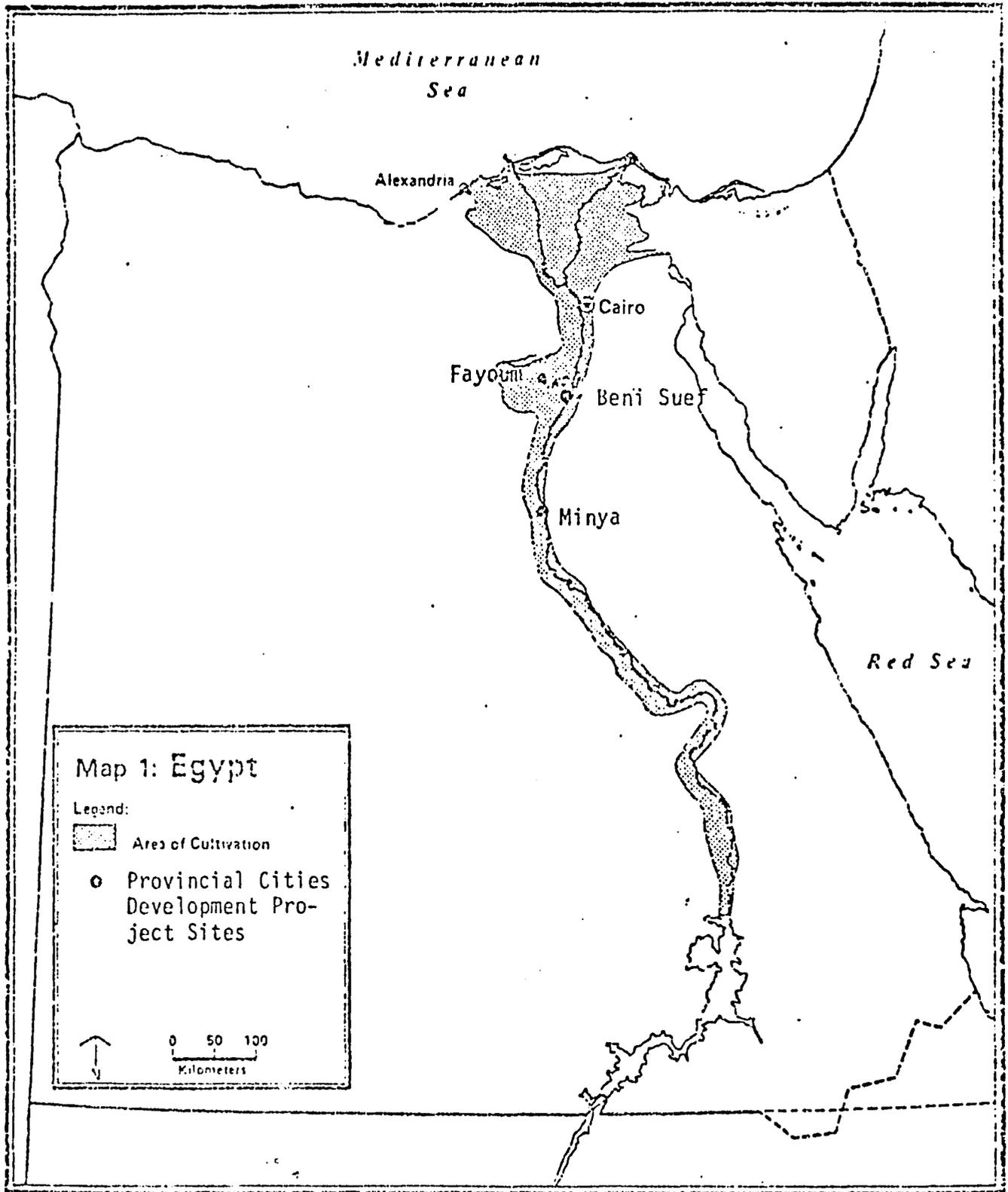
2. THE PROVINCIAL CITIES DEVELOPMENT PROJECT

2.1 BACKGROUND AND DESCRIPTION OF PROJECT

The Provincial Cities Development (PCD) project was authorized in August 1981 with a grant of \$75 million and a total life-of-project cost of \$100 million. The project is directed at the capital cities of the governorates of Beni Suef, Fayoum and Minya, all cities along the Nile with a total population of approximately 500,000 (Map I). The purpose of the project is to improve and expand the institutional capacity of these three mid-Egypt governorates and their capital cities to identify, plan for, budget, finance, construct and maintain urban infrastructure and services at the municipal level. This purpose is intended to (i) strengthen the local governments' authority and skills to manage urban growth and provide essential public services and (ii) provide local government staff with experience in allocating and using resources and in developing the financial and other mechanisms to carry out their infrastructure program. The project was developed to support the Government of Egypt's (GOE) policy of administrative and financial decentralization on the premise that increased local government responsibility for infrastructure programs would result in a more equitable, self-sustaining, and, hopefully, a more efficient, development process relevant to both national and local interests.

Summary of Project Activities

When the project was designed, none of the three provincial cities had undertaken any long-term comprehensive systems planning for their infrastructure needs, particularly as this related to water and sanitation, and streets. The operation and maintenance of the infrastructure also needed substantial improvement. With this recognition, the PCD project financed general consultant and technical assistance, master plan development, and provided funds for urgent subprojects and water and wastewater infrastructure.



The anticipated project outputs are:

- (i) improved planning, budgeting, operational management systems and procedures for infrastructure for the provincial cities;
- (ii) the capacity to implement major capital projects;
- (iii) the infrastructure in place;
- (iv) long-range capital master plans for the three cities; and
- (v) a trained cadre of city personnel.

The Grant Agreement

The PCD Grant Agreement was signed on September 22, 1981 and the project assistance completion date is August 30, 1986. Conditions precedent to disbursement are:

- (i) a written statement on the procedures and criteria for disbursing funds, including capital maintenance and operational cost;
- (ii) designating a steering committee with the necessary authority and responsibility to coordinate PCD activities;
- (iii) establishing procedures for approving subprojects and for obtaining their financing from USAID; and
- (iv) establishing a special account for maintenance and a statement of operating and maintenance procedures.

Special covenants include:

- (i) planning, instituting, and maintaining a plan for adequate local revenue-generation that would cause or sustain the financial viability of the sewer and water projects supported by PCD; and
- (ii) developing as a best efforts a system of revenue retention for potable water for each of the three governorates;

At the Steering Committee meeting on March 8, 1984, the only outstanding C.P., that which established the procedures for the maintenance account, was agreed upon.

Implementing Agencies

Various departments of the municipal governments are the primary implementing agencies of the project. They include: engineering (water, sewerage, and streets), planning, budgeting, financial and personnel functions, and the executive and elected councils. Municipal authority for the project lies with the chairman of the Executive Committee. The project recognized that the governorate plays a very strong role in supervising municipal activities and, in some cases, provides staff support. Although initially active, as the project has evolved, the governorate has a modest involvement in the project.

At the central government level, there is no active ministerial counterpart. The Ministry of Planning is represented at the Governorate level by a regional planning office, physically located in Minia, which also covers Beni Suef and Fayoum. The Ministry of Local Government sets general policies and guidelines in line with the national development plans and coordinates actions of the local government units with the central ministries.

A Project Steering Committee coordinates activities and includes representatives of the Ministries of Planning, Local Government, Finance and Investment and International Cooperation, the three Governors, the three chairmen of the Executive Committees, and the National Organization for Potable Water and Sanitary Drainage. The committee meets quarterly and is currently chaired by the Governor of Fayoum. The rapporteur is the Undersecretary from the Ministry of Local Government.

Technical Assistance

On May 9, 1982, a direct AID contract was signed with Wilbur Smith & Associates (WSA) and its associated firms of Public Administration Services (PAS) and Engineering and Geological Consulting Office (EGCO). The TA contractor is responsible for improving and increasing municipal capability to develop and implement physical infrastructure, including treating and distributing potable water and collecting and treating wastewater. The municipalities are expected to contract with local firms for designing and supervising the construction of the physical infrastructure. It was expected that major works would be constructed by an off-shore contractor. The contract provided for:

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- (a) 54 man-months of technical staff time in developing long-term water and wastewater master plans;
- (b) Two resident advisors (one Egyptian and one American) in each of the three cities responsible for water and wastewater system planning, construction, operation, and maintenance and in providing related management and operational assistance;
- (c) Technical assistance in training local personnel through 96 man-months (72 Egyptian and 24 expatriate) of long-term advisory assistance and 96 man-months of short-term Egyptian assistance for training; and
- (d) 24 man-months of financial and general management assistance.

The contract, which will expire in 26 months, provides specialized technical assistance and on-the-job training to the three cities and governorates. The two resident advisors in each city (one specializing in management and one in engineering) are expected to be generalists. Short-term specialized assistance is also provided in the contract. The contract has been amended five times to add additional Egyptian pounds (LE) and dollars to cover a data collection effort, add a short-term procurement specialist, cover additional costs and adjustments to sub-contractor fringe benefit and overhead rates.

2.2 PROJECT OPERATIONS AND PROCEDURES

The three cities have primary responsibility for implementing subproject activities. Subprojects which meet the following criteria are approved on a quarterly basis:

- (a) Subprojects include urban infrastructure in the areas of potable water, sewerage and street paving, and equipment procurement. With the agreement of the steering committee and AID, other areas may be included.
- (b) AID funding of subproject cost cover material and labor costs. The GOE is responsible for land acquisition, rights-of-way, Egyptian salaries, incentives, fees and taxes. O&M recurrent costs normally are the responsibility of the GOE. AID funds may be used to finance initial capital costs associated with non-personnel O&M.

- (c) AID provides 66 percent and the GOE provides 34 percent of subprojects costs.
- (d) Foreign currency procurement is AID funded.

The approach taken to funding and contracting subprojects has evolved in the context of GOE regulations, AID regulations and USAID procedures. A subproject justification form was instituted as a control mechanism as well as a means for the city to conceptualize a subproject. For subprojects exceeding LE 100,000, information is supposed to vary according to the complexity of the activity, but the following are the basic requirements:

- (a) A description of the activity, including defining design, construction, rehabilitation, equipment purchase, and procurement of services;
- (b) A discussion of the problem the activity will address and how it will address it;
- (c) A technical analysis which should include, as appropriate, specifications, designs, drawings, studies, performance criteria and data;
- (d) An economic analysis discussing the proposed cost, a schedule of expenditures, and economic impact analysis, and, for subprojects which do not generate revenue, a least-cost or cost-effectiveness analysis;
- (e) An implementation plan including a schedule for completing the activity covering as appropriate procurement and construction; and
- (f) A statement of cash needs should accompany the request.)

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A list of subprojects, their justifications and a cash-flow statement are forwarded to the Steering Committee as a package - for review and onward transmittal to AID. According to the grant agreement, the Steering Committee is to have such authorities and responsibilities which would enable it to coordinate PCD activities and allocate funds. The Steering Committee usually does not review individual subprojects and their justifications but passes on the package which AID finally approves, disapproves or requests more information on individual subprojects.

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AID funds are obligated quarterly to the governorates which subobligate to special accounts in each of the three cities. This transfer of funds, referred to as tranches, is done after AID approves a list of subprojects and a cash-flow statement for a three-month period of time for each of the three cities. The cities are supposed to stay three months ahead of their cash needs.

Upon AID approval a voucher is signed for subobligating money to the governorate. The Governor retains control of financial disbursements at this point. The governorate maintains three PCD accounts: one each for USAID and GOE checks which comprise 66 percent and 34 percent of subproject costs respectively, and one for the project account which combines the two contributions. The governorate issues a check to the municipality and the municipal bookkeeper maintains the financial records. The governorate maintains another set of project records. A similar procedure has just been agreed upon by the Steering Committee for O&M.

2.3 EVALUATION

The project paper proposed evaluating the following areas:

- (a) the impact of the project on its primary and secondary beneficiaries;
- (b) the nature and degree of beneficiary participation in subproject selection, planning and implementation;
- (c) the impact on the planning and implementation capability and productivity of the governorates and the cities; and
- (d) the changes resulting from decentralization in the delegation of authority, responsibility and resources by the central ministries and the governorates to the municipalities.

Under the evaluation line item of the project, USAID hired three FSN engineers to monitor project activities in the three cities as well as being a liaison between the resident advisors and the USAID project officer. They are responsible directly to the project officer.

This, the first evaluation of the PCD project, was carried out from February 21-March 18, 1984 by a four-person interdisciplinary team with participation of the three AID

project monitors. The team visited each of the three cities in which the project is being implemented and interviewed governorate and municipal officials, met with elected officials, visited the sites of subproject activity and interviewed private sector contractors. In each city, the team met with the resident advisors and reviewed project files, subproject documentation, including justifications and tender documents, and such engineering studies as were available.

The team also met with the technical assistance contractor's Cairo staff, with reference to project management, training and master plan development and informally reviewed training manuals and draft documents.

The team was handicapped in evaluating this project by 1) the emphasis in the project paper's evaluation plan on project impacts rather than indicators of process and performance; 2) the inadequacy of the annual work plans as standards against which to measure contractor performance and 3) the lack of baseline data. In addition to considering impacts to the degree possible this early in project implementation, the team considered the following issues:

- Integration of capacity building components and capital inputs and their mix.
- Sufficiency and appropriateness of training efforts.
- Utilization to-date of project funding.
- Effectiveness and efficiency of procedures in contracting, local currency financing and subproject approvals, etc.
- Local contracting and the involvement of the private sector
- Relative contributions of AID, the contractor and GOE central and local entities.

and Master-Plans

3. STATUS OF PROJECT COMPONENTS

3.1 IMPROVED LEVELS OF INFRASTRUCTURE AND EQUIPMENT (SUBPROJECTS)

3.1.1 Status

Significant results have been achieved in procurement of badly needed equipment and improvement to infrastructure in the three cities (Table 1). The needs addressed are similar in each of the cities and can be generally categorized as follows:

- Procurement of construction and maintenance equipment,
- Expansion of water and sewerage into unserved areas,
- Improvements to operating reliability of pumping and treatment facilities,
- Road and street improvements, and
- Procurement of office equipment.

The total amount of funds is LE 7,532,000 subobligated, of which 3,892,000 has been actually expended.

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TABLE 1: Provincial Cities Development Project
Amount Expended on Subprojects in LE

<u>City</u>	Total Value of LE ex- pended	Total Value of LE Sub- Obligated	Water Main Improvements Extensions	Sewer Improvements, Extensions	Pump Station & Treatment Plants Improvements	Roads Construction	Training & Consult- ing Super- vision	Equipment
Fayoum	1,168,000	3,061,000	212,000 18%	135,000 12%	194,000 17%	105,000 9%	41,000 4%	468,000 40%
Minia	1,530,000	2,576,000	225,000 15%	82,000 5%	624,000 41%	139,000 9%	21,000 2%	440,000 28%
Beni Suef	1,194,000	1,895,000	113,000 10%	0 -	301,000 25%	0 -	76,000 6%	704,000 59%
Totals	3,892,000	7,532,000	550,000	217,000	1,119,000	244,000	138,000	1,612,000
Percentage of Total			14%	6%	29%	6%	4%	41%

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3.1.2 Observations

Initially, in all three cities, local officials campaigned heavily for significant procurement of construction and maintenance equipment. This to a high degree explains the current imbalance towards equipment procurement which is very evident from Table 1. In addition AID agreed to waive source and origin requirements thus freeing the cities to purchase the equipment locally. This allowed for faster than usual procurement. The subprojects now underway and being planned contain significant amounts of water main and sewer extensions which should help to correct the current imbalance.

In current subprojects, success in providing increased water service and sewerage into unserved areas has been low. To the best of the team's knowledge, no households have been connected to new water mains or sewers to date. However, a significant number of subprojects, particularly those which address extension of water and sewerage, will be underway in the near future. Great pressure is being applied by officials in all cities to extend water service into unserved areas without equal push for concurrent sewerage extension. Subprojects to date have been successful, for the most part, in "walking a tight rope" and avoiding extension of water into unsewered areas. On the other hand, significant areas of the cities already are served by water and are unsewered.

Except for new intake works completed in Minia, the impact on water quantity to date has been minimal. In both of the remaining cities improvements to raw water intakes are in the planning stage. Treatment at all facilities is virtually uncontrolled due to the lack of flow metering, chemical dosing controls and laboratory capability. These matters are being addressed in current and planned subprojects. Some improvements have been made to pumping equipment, with more imminent. Electrical service interruptions, which are frequent in all cities, have been addressed on two fronts. The procurement of standby generator sets has been completed and some work has been done on provision of new power lines. A public sector procurement problem has hampered actual installation of these lines.

Each city has also embarked upon a program of distribution system valve location, rehabilitation and provision of valve chambers. This is essential as a basis for any leakage detection work.

The wastewater treatment plants in each city have had, or are still undergoing, some general repairs under the subprojects. Nonetheless, all three plants the primary sedimentation basins were septic with considerable floating sludge. It appears that the sludge removal systems are grossly inadequate and are the cause of these conditions. It is doubtful (supported by the

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limited sampling and testing done as part of the master plan data collection) that any removal of pollution is occurring at these plants. The conditions observed in the primary tanks more than likely are the main cause of this lack of removal.

The construction and maintenance equipment purchased is for the most part appropriate for road work. Since very little road work is now underway in any of the cities, this equipment is largely underutilized and in some instances being misapplied. Selection of equipment should have been more oriented towards construction of water mains and sewer laterals in narrow streets. Such equipment would be suitable to construction of water mains and trunk sewers in less congested streets.

Each city has been provided a new sewer jet cleaning machine for which manufacturers representative training is scheduled soon. All of the cities already have at least one other similar piece of equipment which appear to be in poor condition. How this older equipment is used is not clear; however, a coordinated program of routine sewer cleaning does not seem to be in place.

As is indicated in Appendix F, the impact of many of these subprojects is dependent upon adequate O&M. This aspect should be considered in selecting and designing future subprojects and in designing O&M training programs around them. Manufacturers' training programs for equipment operation/maintenance have not been sufficient to ensure proper application and use of the equipment. With the amount of equipment purchased, there should be the development of complementary training activities and programs for use and application. Specific instances are street maintenance and sewer cleaning (see Report by Zane Young for street maintenance). Additional short term TA may be needed to develop the necessary activities to complement these procurements and subprojects.

Currently, all cities have subprojects which involve metering of house service connections. The scope ranges from minimal in one city to fairly ambitious in another.

Data reported by the cities, supported by the team's observations show that water metering is adequate and few water meters are operating. Since, demand is great and, apparently only one military factory makes water meters, deliveries are slow and unreliable. The TA contractor should seek out other sources since this will be a constraint as the distribution system expands.

looked at only one appeared to be working. Albeit a very small sampling, it does support data available that a very high percentage of meters are inoperable. The provision of meter repair facilities in each city are very worthwhile subprojects.

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263.1.3 Visibility and Project Impact

As subprojects are completed and infrastructure components realized, the potential visibility and impact of the PCD project on the residents of the three cities is marked. The municipal staffs and elected responsibilities are supportive of the project and are anticipating an increasing impact as system improvements and extensions are made. Since the first subprojects are now just being completed, initial impacts on beneficiaries are largely limited to the municipal workers who have benefitted from training and to private sector contractors who are carrying them out.

As the distribution and collection network is expanded, actual benefits and the visibility associated with those benefits will depend upon secondary mains and laterals and on service connections. The city councils will be expected to bear the costs and provide most of the labor for small mains and laterals and in most cases provide labor to make service connections. The mayors and the technical staff are hazy about the magnitude of the work that will be entailed. There needs to be an assessment of the costs, equipment, manpower, and organization which will be required. To take one example, household connections, municipal staff in Beni Suef make the connections with the customer paying the municipality on a per meter basis for labor and materials. As the network expands, municipal staff will need to expand its operations or sub-contract for household connections. The Beni Suef municipal staff has seventy laborers who perform network maintenance and make connections at a current rate of an estimated 80-100 water connections a month and 60-85 sewer connections in 1983. When current subprojects are completed, there will be a significant increase in demand for connections. Unless this problem is anticipated, connections will be delayed or will be made at the expense of network maintenance.

Adequate data do not exist on the ability of poor households to connect to the system. Given the cost of new water and sewer service connections, even households with an average income may have difficulty to pay this fee. Municipal employees estimated the costs of sewer connections to range from LE 100-LE 150 (LE 15-20/meter, LE 50-70/required inspection vault). Water connections are estimated to range from LE 80-LE 100 (LE 10/meter, LE 30/water meter, with a LE 50 minimum). In both Minia and Fayoum, city engineers indicated that there is a waiting list of people who are unable to afford to connect and who have applied for public assistance for service connections. In Fayoum, public funds are so restricted that from a waiting list of an estimated 1000 for new connections, 5 free connections have been made this year. The project could have a highly visible impact by identifying ways to facilitate service connections.

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The efforts of the resident advisors in Beni Suef to inform and involve the elected council are commendable. They have met with the council to explain the project and have provided them with a map showing the location of subprojects. As a result, the Elected Council is now involved in selection of "popular" subprojects, those that extend distribution and collection lines. They are generally aware of but not involved in improvements to facilities and master plan recommendations.

3.1.4 Impact on the Private Sector

Although unforeseen in the project paper, the PCD project has had a positive effect on the private sector of the three provincial cities through the implementation of subprojects. The large number of relatively small, i.e. low-value, subprojects in the three provincial cities has made it possible to retain local contractors under AID-approved bidding procedures. The impact of improved municipal bidding procedures developed by PCD is supported by private contractors as both clearer and fairer. Interviews with successful contractors suggest that PCD's funding and technical assistance efforts have begun a trend in motion, which could have a major impact on the construction industry in the provincial cities, if properly reinforced.

Governorate Construction Cooperatives

Many small contractors in the governorates are affiliated with local building societies, which were chartered in 1963 by Presidential decree as jurisdictionally limited, nonprofit, self-help organizations. Each governorate has such a cooperative, some of which are more active than others. Cooperatives are considered, and officially classified, as private sector enterprises. They have been actively pursuing and succeeded in obtaining contracts to implement PCD-funded subprojects in all three cities. In bidding on government sector contracts, all benefit from some preferential treatment with regard to allocation of materials and equipment. The cooperatives are prohibited from bidding or accepting contracts from public sector companies and from interfering with their members' rights to seek out private sector or governmental contracts independently from the cooperative's efforts.

The Beni Suef Local Construction Society, for instance, provides an umbrella for 35 independent companies and 250 individuals, who share in the benefits of the cooperative's activities. The executive and clerical staff provides a variety of services, ranging from intelligence gathering and marketing, engineering and design services, cost estimating, bid preparation, construction monitoring, quality control and limited liability

insurance. The cooperative also provides storage and transportation of materials, inventory control and transportation of personnel. Its professional staff includes 7 engineers and architects. The annual volume of construction is estimated to range between LE 1 and 3 million, of public housing and infrastructure projects.

The team did not have the opportunity to probe the degree of influence or rate of success of the cooperatives in Fayoum and Minia, but, according to the Executive Director of the Beni Suef Cooperative Construction Society, the organization in the respective cities is very active. The major problem he identified is the difficulty of obtaining capital resources for this organization and its individual members in order to speed up mechanization of the construction process and to improve the productivity of the work force. Each one of his member companies has a long list of equipment needs, ranging from basic hand tools to the heavy duty trucks, bulldozers, diggers, scrapers, loaders, lifts, compressors, etc.

Leasing of Construction and Maintenance Equipment

Contractors on municipal funded subprojects are currently able to rent some equipment and tools from the municipal equipment pool, some of which have been procured with AID funding. Apparently, this practice offers the only opportunity for small contractors to bid on the larger construction jobs. The charges are fixed by municipal government officials and are not based on a detailed cost accounting, maintenance and depreciation schedules.

However, AID-funded equipment procurements have been rather limited so far, and the existing equipment pool is insufficient to meet a growing demand. Most of the smaller contractors continue to rent equipment from other contractors, wherever and whenever available. According to the Executive Director, the charges levied by private contractors for the use of their equipment are generally lower than those fixed by the cities' motor pool. The lack of equipment and the use of inappropriate equipment is one factor contributing to the low productivity of small contractors.

Governorate officials and contractors viewed the mechanization of construction activities as a critical goal to attain. This may offer an opportunity for private sector entrepreneurs to set up equipment-leasing operation on a local, regional or national scale. The high cost and specialized nature of construction equipment make it almost impossible for many small contractors to purchase such equipment and to utilize it in the most cost-effective manner.

Shortage of Skilled Labor

Interviews of government officials and contractors revealed a significant concern about the lack of skilled technicians and laborers which, in some areas, takes on a critical dimension. The problems are exacerbated at the local level by the phenomenal growth of the construction sector nationally and throughout the Middle Eastern Countries. Since the mid-60s an ever-increasing number of Egyptian construction workers have gravitated from the provincial rural and urban communities to the primary centers of economic activities and to work in the oil-rich countries.

Material Supply Shortages and Latent Demand

Shortages in construction materials such as cement, reinforcement steel for concrete structures, asphaltic materials, etc. are endemic and partially a result of the inefficiency of the national allocation policies and process. It would be difficult to assess the impact of the material shortages or bottlenecks on the PCD subprojects. It will become a more significant problem for the larger projects identified in the master plan, and should be taken into consideration when preparing implementation schedules.

Business Management

Most contractors interviewed by the team seemed to have only a rudimentary understanding of business management practices and showed little concern about the introduction of modern methods as a means of improving their firm's competitiveness. A few indicated a desire to send their sons to a business management school, if such were available. None of the governorate universities/colleges in Minia and Beni Suef include a business management program in their curriculum at this time.

3.1.5 RECOMMENDATIONS

- 1) The implementation of subprojects has been both the incentive and the means for capturing municipal interest, introducing incremental change, and achieving rapid impact. A very substantial proportion of project resources should continue to go to the funding of subprojects.
- 2) The ongoing subprojects could and should address more aggressively wastewater collection in unserved areas, particularly those already served with water. Such expansions do not need to wait for completion of the master plans. In areas of existing housing, the location of laterals and branch sewers is primarily determined by topography and location of buildings. Both are beyond influence of the master plan.

- 3) The resident advisors should be taking a strong role in directing improvements in/around subproject activities. The following are but two small examples of what can be done to improve the facilities installed under current and future projects. The cost is minimal but the potential improvements in product are great.
- The subprojects already underway which address improvement to water treatment plants are consistent and appropriate. Every effort should be made to expedite completion of the laboratory facilities, alum-feed systems and chlorine facilities. Completion of the labs will allow for routine testing of raw and treated water which will be essential to the designers of new or expanded facilities. The alum-feed systems working in concert with lab data will allow for more effective use of alum which is an imported commodity. Conceivably it may even result in less alum being consumed. Current conditions at all plants are extremely hazardous regarding handling and storage of ton chlorine cylinders. Accidental release of chlorine gas will have a disastrous effect upon a wide area adjacent to the plants. Furthermore, improved dosing equipment along with operating labs will allow for more efficient use of chlorine.
 - Observation of the limited number of active construction projects indicated considerable room for improvement in construction techniques and attention to details. Concrete is still being mixed by hand with questionable control over mix contents. Provision of small mechanical mixers plus attention to batching requirements would result in a far superior grade of concrete. Attention to construction joints of concrete manholes would result in less infiltration into the already hydraulically overloaded sewer system.
- 4) As was mentioned above, it appears that little, if any, meaningful treatment is taking place at the wastewater treatment plants in spite of completed or ongoing improvements to the trickling filters and other units. It is strongly recommended that subprojects be undertaken immediately to correct the inadequate sludge removal system in the primary clarifiers. This will result in a significant improvement in removals of pollution rapidly at a modest cost and is not in conflict with the master plan.

- 5) The project should assist the municipalities to assess the manpower, financial and equipment requirements of the extension of the secondary mains and laterals and of performing household connections. Consider developing a service connection component to the project, improving the capacity of the municipality to make connections or to contract for them.
- 6) Assess the degree to which households are currently unable to make service connections and consider developing, on a pilot basis, a revolving loan fund for service connections.
- 7) The Resident Advisors should continue and expand the awareness and involvement of elected councils in project activities.
- 8) In structuring the subproject component, consideration should be given to ways to enhance the project's impact on the private sector.
- 9) Manufacturers' training is not sufficient to insure that equipment is appropriately and effectively applied. In key areas, such as sewer cleaning, this should be supplemented with a more comprehensive program.

3.2 MASTER PLANS

3.2.1 Status

Master plans covering water and wastewater for each city have been developed and preliminary drafts submitted to USAID in December 1983. The capital costs of the recommendations far exceed those anticipated in the project paper. In order to reduce the cost of recommendations for the stage-one works, considerable revisions are being made, primarily to the treatment and reticulation components of the plans.

A review of the final recommendations regarding the major capital works is currently underway at the steering committee level. The current emphasis is on providing treatment facilities with available foreign exchange and relying on current and future GOZ financing for distribution and collection system expansions.

The scope of master plans was limited to be conceptual with order of magnitude costs developed. This is quite clear in the contract and was further reinforced in the work plans.

3.2.2 Observations

As instructed by the Mission, the team did not review the master plans in any depth, particularly where recommended criteria and system configuration are concerned. The approach to the preparation of the master plans was reviewed in somewhat more detail. Overall the master plans are structured in such a way as to successfully touch upon the key components at a level of detail consistent with USAID's direction and the work plans. With the exception of O&M, discussed below, all key areas seem to have been addressed.

The major concern of the team was the absence of any material related to O&M of the recommended facilities. The team was advised that such was not in the scope of work of the TA contractor as part of its master planning efforts. Regardless of contractual considerations, such information is critical for the municipalities to develop realistic operations budgets and to train sufficient staff to levels consistent with the needs of the expanded facilities.

Local consultants have been engaged to do design studies, final design and construction surveillance for most of the more complicated projects. The less complicated projects are being prepared by municipal personnel with close supervision by the resident advisors and AID engineers.

Since the cost of the master plan recommendations far exceeds available funds, the choice and staging of investments will affect the nature and timing of the benefits to be expected. If sufficient funds are not available to finance the distribution and collection systems, the benefits of plant improvements will be reduced and the cost-benefit ratio affected adversely. A review of trends in the investment budgets allocated to water and sewage investments in the three cities does not encourage optimism on this point. According to feasibility studies by P. B. Sabbaur, between 1977-1980, of the LE 1,837,000 proposed by Beni Suef governorate, primarily for investments in sewage collection, none was approved (P.B. Sabbaur). More recent figures show similar trends.

It appears, based on discussions with the master plan team, that considerable responsibility regarding planning of the treatment and storage facilities will be passed to a design phase. At the present time, consideration is being given to undertaking construction of the master-plan recommended treatment storage and pumping facilities by means of a single design-construct contract. The major advantage of design-construct will be completion of the facilities in a-

considerably shorter period of time. On the other hand, preparation of the bidding documents for such a contract will be very difficult, and given the conditions of the existing facilities, even a well-thought-through contract will be highly susceptible to claims for extra compensation. There are several reasons:

- o Three cities are involved in the project <
- o Conditions of existing facilities are largely unknown <
- o Lack of raw water quality data
- o Relative geographic remoteness of work from other project sites <
- o Need to maintain full operation of facilities during new construction. <

Another option would be to proceed in the conventional method, namely engage an engineering firm to do the design and prepare the construction documents. This would allow for time to make detailed investigations into the structural and electrical-mechanical conditions of the existing facilities, perform pilot testing so as to determine the most suitable process for treatment plants and to perform more detailed hydraulic analysis on the water systems. The design consultant could also prepare detailed operation and maintenance budgets when the designs of the new and expanded facilities are near completion. Ad hoc plant operating advice could be included in the services. This would result in early improvement in plant operation and some technology transfer to plant personnel.

Another area of technical concern is the apparent lack of network analysis on the existing water distribution systems. The approach taken is, in the team's opinion, inadequate to develop system expansion. Field measurements were limited to static pressure readings at various points in the systems and flow tests were not performed.

Finally, the team is concerned about the apparent lack of significant involvement of the municipalities in the development of the master plans and, particularly, in their subsequent revision and staging. As originally envisioned, the master plans would have been prepared in a way which would be understandable to the Elected Councils as well as to the municipal officials and staff. While that may ultimately be done, it has not been the case for the documents which lay out

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the cities' options and on which the cities have been asked to make decisions. The draft summary of the recommended options which was presented to the cities and the Steering Committee for action is confusing, poorly translated into Arabic (at least one city refused to review it on that basis until it was corrected), does not include a full discussion of GOE costs (investment or recurrent) nor staffing and training implications, and does not clearly lay out the impact of the various options on service levels in the cities.

3.2.3 Environmental Concerns

The initial environmental examination (Project Paper, Annex H) concluded that, because water and wastewater systems are operating at less than optimum effectiveness with resulting deleterious effects, the overall project impact will be to improve the environment and human health.

The project was given a positive determination in compliance with the requirements of 22 CFR 216, "AID Environmental Procedures," because of the possible effects of wastewater disposal. The action recommended was that "a scoped environmental assessment of the effects of wastewater disposal be conducted prior to initiating disbursement for the construction or material modifications of wastewater plants" (Project Paper, Annex H, p2).

The subprojects funded and initiated to date have not constructed or materially altered wastewater plants. The draft master plans, however, do include construction of a new trickling filter treatment plant at Beni Suef and the introduction of wastewater treatment based on stabilization ponds at Minia and the Fayoum. Each of these interventions or any other proposed modification to sewage treatment will require a scoped environmental assessment which should be carried out before initiating of U.S. funding.

In addition, when the project paper was reviewed for its environmental impacts, it was anticipated that the funding available was sufficient to fully fund complete systems, including water and wastewater treatment as well as full distribution and collection systems for a 1990 population. With the cost estimates exceeding available funds, priorities must be established as to which works should be built soonest. Different implementation schedules represent different alternatives which may have significantly different environmental impacts.

AID should be aware that there is a high level of local awareness and concern in the Fayoum about the environmental problems relating to drainage into Lake Qaroon. These problems and the concern surrounding it should be considered in planning the scoping approach for the environmental assessment.

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3.2.4 RECOMMENDATIONS

- 1) A scoped environmental assessment of the proposed modifications to sewage treatment facilities be carried out, including a consideration of the environmental impacts of different staging or implementation schedules.
- 2) The team recommends that the more viable alternative is to go to conventional engineering services first and not to utilize a design-construct approach. In the event that USAID/Cairo opts for design-construct, the team highly recommends that the TA consultant be assisted in document preparation by an organization or persons experienced in execution of process-oriented, design-construct projects. Such experience will be difficult to find; however, it should be sought out. A claim-ridden project will surely make completion of the badly needed facilities a long-drawn-out affair and most likely result in severe cost overruns.
- 3) The TA consultant needs to pay considerably more attention to the hydraulics of the distribution systems before finalizing recommendations for expansion and looping. Well-established methods are available for such analysis. Concurrent with this analysis, selected municipal engineers should be trained in the basics of such methods of distribution system analysis.
- 4) The team strongly urges that, as soon as final agreement has been reached regarding treatment options, a comprehensive study be made addressing system-wide operation and maintenance (both treatment and reticulation). If such is not in the TA contractor's scope of work, AID should find the means to have this work undertaken. The following is a list of the minimum items to be addressed:
 - o Staffing needs by type, skill and number
 - o Development of power and chemical requirements
 - o Maintenance equipment needs
 - o Annual equipment and facility replacement needs.

Following establishment of the above needs, annual costs to provide for them can be developed. These costs must then be incorporated into the management systems component of the project.

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Identification of staffing needs will be required by the TA and municipal staff responsible for training, not only to undertake the necessary training but also to allow for budgeting for such training and to anticipate future, recurrent training needs.

Lastly, development of these O&M budgets should closely involve the resident advisors and key municipal staff.

- 5) A clear presentation, in Arabic, of the staging options proposed should be presented to governorate and city officials. At a minimum, that presentation should lay out the plants which will be built, the impact on urban services under various options and the assumptions about GOE (NOPWASD/Governorate/Municipal) financing of investment and recurrent costs.

3.3 IMPROVED MUNICIPAL CAPACITY: INTRODUCTION

The stated purpose of this project is to improve and expand the institutional capacity of the three cities of Beni Suef, Fayoum and Minia, to identify, plan for, budget, finance, construct and maintain urban infrastructure. The project paper anticipated that the resident advisors, supplemented by short-term technical assistance and supported by the training programs, would provide advisory services to strengthen municipal capabilities in these key areas. Neither the project paper nor the TA contract specifies what activities will be performed or what standards will be achieved. Nor, apart from annual work plans, does the contract call for the implementation plans in the management area as proposed in the PP and which might have helped to better define directions. As a result, almost two years after the arrival of the TA contractor, there is still no agreement as to the appropriate level of effort or scope for this key area of institutional capacity.

Both the first and second work plans have tied activities in management advisory services to basic reconnaissance reports and to the development and acceptance of implementation plans. One report, completed in July 1983, has been reviewed but has not been accepted by AID. A second amendment to it has just been requested following a meeting between USAID and the PCD staff. Training activities, which should be an integral part of and support to institutional development have preceded clear understanding of needs and objectives on an agreement on how training would contribute to project objectives. As such, the activities have been ad hoc, reactive and have, to date, made only modest contributions to the overall capacity-building objectives of the project. (Table 2).

This is not to say that nothing has been accomplished. The project has adopted a strategy of "learning by doing," dealing with tasks and problems as they come up, primarily in the context of subprojects. To a large extent this approach has had an impact where it has been applied. There are, for example, significant improvements in the cities' procedures for procurement of goods and services. The quality of bid documents is significantly improved and technical criteria are being established and used for the first time in bid evaluation. However, the team considers the approach in and of itself and the current level of effort are not sufficient to address the very serious deficiencies in municipal planning, operations and maintenance, contract management, budget and finance as they relate to urban infrastructure. The team has several overall concerns with this as the sole approach:

- It is effective but labor intensive and therefore slow.
- It is directed at individuals who may not remain after receiving on-the-job training.
- Some problems demand solutions which are beyond the scope of an individual's job.

These reservations do not suggest a lack of support for the concept of on-the-job training or learning-by-doing. They are an integral part of a capacity-building approach which emphasizes practical, realistic changes in incremental steps that people can see and understand. However, if this approach is pursued ad hoc as the only approach, the total progress in capacity-building will continue to be slow, institutionalization of change will be difficult and major areas may not be addressed. The level of progress with respect to capacity-building, in large part, can be attributed to the strengths and limitations of this approach.

What is also clear from the project's success in key but circumscribed areas is that the city bureaucracies are responsive to external assistance. The team was struck by the fact that, where assistance had been given, city employees had improved performance levels and were motivated. These improvements have taken place before the distribution of any incentives although several employees did raise the incentive question with us, including several those who were putting in unpaid overtime on project-related activities.

Although impact in the institutional capacity of the cities has been limited, it has been sufficient to demonstrate the flexibility and will on the municipal level to make changes.

The limits of that will and flexibility have not yet been tested. The team believes, on the basis of discussions with the municipal officials and the resident advisors that, even with the two years remaining in the project, significant progress could be made in the institutional capacity of these cities if immediate steps are taken to reach agreement on and implement the scope of the management program and the supportive training activities. By contrast, if an expanded, targeted management and training program is not implemented immediately, the project purpose cannot be achieved. It is critical to reach closure on the scope of the activities required, to agree upon an implementation plan and to clearly agree that the TA contractor will implement it.

It is difficult to evaluate an activity which has no agreed-upon scope or standards as objectives. As a result, the team has taken the somewhat legalistic approach of reverting to the wording of the project authorization as a statement, however non-specific, of overall objectives (Table 3). Specific components are discussed in the sections which follow.

TABLE 3: Improvement in Cities' Capacity with Respect to Urban Infrastructure and Services

	<u>Beni Suef</u>	<u>Fayoum</u>	<u>Minia</u>
Identify	3	3	3
Plan	2	2	2
Budgets	1	1	1
Finance	1	1	1
Design	3	2	2
Construct (implement)	3	2	2
Maintain	1	1	1
Allocation	2	2	2
Utilization of resources	2	2	2
Local contribution of O&M	1	1	1
Totals	19	17	17

Source: List of indicators is drawn from the Project Authorization.
Ranking is average of ranking by individual team members.

Scale: 1 (low); 2 (below average); 3 (moderate); 4 (above average);
5 (high)

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TABLE 2: Courses Offered in Relation to Objectives of Provincial Cities Development Project

<u>Project Objectives</u>	<u>Courses Offered</u>	<u>Number of Trainees</u>
Capital Project Identification and Design	Liquid and Gas Pipeline Network Design	8
		8
Planning, Budgeting and Finance	President's Program Public Administration	2
		3
		5
Construction Management	Procurement and Contracting	55
	Project Controlling and Monitoring	38
		93
Operation and Maintenance	Pumps and Motors	51
	Heavy Equipment O&M	8
	Chlorination	40
	Diesel Engines	18
	Fluid Systems	7
		124
Other	English Training	106
	Training and Trainers	2
		108
TOTAL		338

Source: Wilbur Smith Associates, Summary of Training Activities, March 1984.

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Some agreement exists between USAID and the TA contractor on the following priority areas for current emphasis: organization and management for water and sewer services; financial management; contract management; and O&M. Issues which need resolution are:

- The relative emphasis on analytic work resulting in job descriptions and organizational manuals versus implementation and experience based on learning. In the team's view, this should not be seen as an either/or issue but a question of what the proper mix and timing should be.
- The role of the resident advisors in implementing the program, particularly in view of their continued role in subproject implementation and difficulties in communication.
- The need for expatriate short/long term technical assistance.
- The need for coordination/agreement with GOE officials on the national level to sanction any proposed changes or pilot activities.

RECOMMENDATIONS:

- 1) That AID and the TA contractor agree that the following are the priority areas for management and training interventions:
 - 1) Organization and management of water and sewer services
 - 2) Financial Management
 - 3) Contract Management
 - 4) Operations and Maintenance.
- 2) That an implementation plan for a management program be presented by the contractor at a formal meeting with USAID staff and agreed upon within 60 days.
- 3) That consideration be given to adding one Egyptian professional to each city staff to reduce the burden that subprojects place on the resident advisors and permit them to focus more of their efforts on implementation of an expanded management program.
- 4) That additional and improved translation services be found for the American resident advisors to permit them to function more effectively and to reduce the use of Egyptian advisors as translators.

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3.3.1 Planning, Budget and Finance

3.3.11 Status

In formal terms, these aspects of the PCD project have received little attention from the training program (Table 2), short term technical assistance or, according to the annual work plans, from the Resident Advisors. Generally the Resident Advisors have surveyed the organizational structures and processes of municipal department functions and have tested (in at least one specific case) the ability and willingness of municipal leaders to make minor modifications to lines-of-authority in order to bring about a more effective and efficient organization.

Due to other pressures and priorities, little has been attempted or accomplished in the arena of budget or finance to date. Covenants in the project agreement call for a GOE plan for revenue generation and best efforts toward developing a system of revenue retention. This is the time to decide how to approach the revenue question within the context of the PCD project. In the current organizational context, the appropriate focus on budgetary questions on the municipal level appears to be on estimating costs of operations and maintenance and developing justification techniques and management approaches for use in the budget process.

On the revenue side, there is interest and there are subprojects to improve water revenue collection by purchasing water meters. In one city, a study is underway by a local consulting engineer to serve as the basis for a program to improve water meter repair and calibration. However, one can question the incentive to collect revenues more aggressively in the absence of the ability to retain them.

3.3.12 Observation

The performance of municipal planning, budgeting and finance and local administrative activities is controlled rather pervasively through central authorities (Appendix C). The influence of central agencies over internal departmental affairs is equally pervasive. This project represents an attempt to increase the participation in that process by the lowest levels of provincial municipal government.

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The influence of the central government shows weaknesses in certain critical areas, which offer unique opportunities for project intervention, such as in the training of personnel and the streamlining of organizational administrative functions to achieve labor productivity and organizational effectiveness. The structure and process of departmental management and administration is largely determined by the Central Agency for Organization and Administration (CAOA). Among other guidelines, the agency prepares and issues prescriptive job descriptions for local employment and assigns positions or classes of positions to the nationally applicable pay structure and oversees other aspects of personnel management. Subject to review and adjustment by the Ministry of Finance, the CAO A has jurisdiction over budget requests for all personnel services (Bab I).

The Ministry of Finance is responsible for the review and approval of requests for materials, supply and O&M services (Bab II) and capital investments for all infrastructure (Bab III). In addition, the Ministry prescribes policies and procedures for revenue administration, for recording and reporting of collections and for accounting of disbursements. The public works departments generally have no direct responsibility for nor influence over the local budgetary decision process, but they can and should be prepared to justify their Bab I, II and III funding requests with facts, logic and persuasiveness. The USAID focused subproject justification process may be a good basis for discussing the peculiar needs of the local and national budget request justification process. However, the requirements and procedures which have been developed to meet AID requirements are not necessarily suitable for the Egyptian programming and budgeting process.

Other standards and procedures of importance to the water and sewer program in municipalities are those set by the Ministry of Health, as regards enforcing bacteriological and chemical standards for potable water. The National Organization for Potable Water and Sanitary Drainage (NOPWASD) responsibilities range from formulating policy, constructing facilities, researching and settling standards and procedures, and providing technical advice and training for the O&M of water and sewer facilities, after ownership has been transferred to the municipalities or governorates.

As is commonly the case with centrally-administered policies and procedures, the design and approach reflects the viewpoint and need of the national administrative units and not necessarily the needs of local administrators. The

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administrative framework designed by CAO and others could be characterized as the "lowest common denominator" in order to accommodate the large variety of local units of government. The restrictions on deviating from the norm are not really found in administrative law as much as in fiscal realities, i.e. the force of budgetary constraints and the lack of incentives to bring about change. AID's decision to intervene at the departmental level may bear fruit because of the magnitude of financial incentives offered to the three provincial cities. Whether the results could be transferred to other cities not benefitting from the financial incentives remains to be seen. But, in any event, it would require the cooperation of the respective national organizations, and presumably the provision of additional resources.

Discussions with local government officials in the three cities clarified that adjustments to the CAO prescribed organizational/administrative structures can and have been made. The organization charts of the municipalities and governorates are similar in content and in relationship of municipal functions to the responsibilities of the executive and legislative branches of government as defined in national law. The variations in the arrangement of functions and lines of authority seem to be reflective of the personal relationships within the municipal leadership group as well as the degree of political control exercised over the disbursement of funds and the collection and recordation of revenues.

The capacity of provincial cities to fund O&M activities for their respective water and sewer systems is closely related to significant financial constraints described above, i.e., the dependency on central government subsidies and grants-in-aid, and the limitations on and reluctance to raising local revenues. Past expenditures for W/S capital investments and O&M activities have been clearly insufficient to meet the local needs, and current expenditures. What will happen after the system improvements have been implemented and require heavier outlays for O&M activities should be of concern to all involved.

NOPWASD, under the direction of the Ministry for Development, is responsible for all water and sewer investment activities throughout the country--except for those activities in Cairo and Alexandria: Local governments have responsibility only for the O&M of

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existing systems. Budget allocations for both Bab II, i.e. O&M expenditures, and Bab II i.e., Investments, are influenced, if not determined by NOPWASD's priorities, and are only partially responsive to the locally identified needs. However, it is difficult to say just what the local O&M needs are and what they will be once the new systems are in place. Standards have not yet been determined and cost estimates have not yet been prepared. Consequently, it is important to determine what O&M requirements are currently and what they will be under the proposed plans.

Several institutional/organizational options have been advanced which would insulate the water and sewer system funding needs from the vicissitudes of the perennial budget battles. These options include the establishment in each city of a:

- o Water and Wastewater Authority, or a
- o Water and Wastewater Company, or a
- o Department of Water and Wastewater
- o Other variants.

While an independent entity would theoretically provide a greater autonomy in the collection, retention and expenditures of user charges, the latter aims at strengthening the existing public works departments, particularly with regard to their technical, managerial and financial capabilities vis-a-vis the local and national decision makers.

Each governor and mayor we spoke to openly discussed issues related to tariffs and retaining revenues and were aware at least of the option of establishing independent water companies. They were completely unaware, however, of the magnitude of costs required on a recurrent basis to operate and maintain either the current system or the proposed expansion under the master plan. In addition, they were understandingly reluctant to make changes which might have the effect of reducing the budget subsidies they currently rely upon. They also related their ability to increase revenues to improved services. It should be recognized that the program in the provincial cities is planned to have an important and visible impact on the level of services. It may be possible to see movement on the revenue question in this situation much more readily than in the more politically visible primate cities.

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One TA contractor report notes that CAOA job descriptions appear to be much less detailed and thus less confining, with respect to the duties and responsibilities of the technical personnel than of the general administrative staff. Thus, latitude exists for assigning responsibilities in response to local judgments about specific local needs. This finding presents an "open door" through which a variety of changes could be introduced dealing with specific job description and performance expectations, training requirements, promotion opportunities, pay scales and incentive systems.

3.3.13 RECOMMENDATIONS

Despite the lack of a guarantee that the objective will be achieved during the life of this project or by its direct action, it is possible and necessary to take concrete actions which will lay the necessary foundation for financial viability.

- 1) The first step is to create awareness on the part of governorate and municipal officials of the magnitude of the financial requirements they face to operate and maintain the system.
 - Assess the O&M of current facilities and the implications of the implementation of the master plan and present these to the mayors and governors (requested by the Mayor of Fayoum).
 - With the municipalities, establish a cost accounting system so that they have the capacity to assess their requirements on an on-going basis.
 - Make greater and more effective use of American long-term advisors and intermittent short term advisors to respond to city needs in this area and to stimulate interest and action on the part of city officials.
- 2) The second step is to strengthen the cities' capacity to collect revenues. Even today, water revenues constitute the single largest source of revenue which the cities collect and retain and subsequently pass on to the national treasury. In each city, we heard about inadequacies of the water metering system, broken water meters, inadequate numbers of and unmotivated meter readers. If tariffs were raised tomorrow, Beni Suef, Fayoum and Minia would not have the systems in place to collect them.

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3.3.2 Operation and Maintenance

3.3.21 Status

In all cities a "paper" organization is in place which is charged with O&M of both the water and sewerage systems. Budgets for maintenance are merely a token amount of what is actually needed. Staff is thin and needs intensive "hands-on" training consistent and concurrent with subproject improvements and planned as part of the master plan recommendations.

More than a third of municipal employees trained under this project have received training in O&M. However, this training appears to have had a negligible effect on actual O&M of existing facilities. Officials in each of the cities acknowledge the importance of O&M but have only a vague notion of what is needed both in human resources and fiscally. Until a more systematic approach as a part of a management program is implemented, as required by this project, the above situation will continue.

3.3.22 Observations

All water treatment plants suffer from lack of suitable means of process control. No raw water or product water quality testing is being performed. Chemicals (Alum and Chlorine) are being applied without any knowledge of dosage requirements. Process units are essentially flow-through devices. How much treatment is taking place under such conditions is unknown. The quantity of water being treated is also unknown beyond a rough estimation.

Most of the above comments also apply to the wastewater treatment facilities.

Based upon discussions with assigned municipal staff and casual field observations, current maintenance of the water and sewer pipe systems appears minimal and totally inadequate. Maintenance is limited to repairs to ruptured or badly leaking water mains and random cleaning of sewers (probably driven by problems resulting from serious blockages). All cities have some sewer cleaning equipment, both old and recent USAID-furnished. The new USAID equipment has been hardly used and the resident advisors are awaiting training from equipment factory representatives for city operating personnel.

In spite of the above, it should be pointed out that no leaking mains or sewage surcharging onto streets was observed in any of the districts visited in the cities. However, not all districts of the cities were visited.

One particular point of concern is the lack of safety regarding handling of chlorine gas cylinders at all treatment facilities. In every case these facilities are very near the center of the city (particularly the Minia and Beni Suef water plants). Rupture of a cylinder or valve malfunction will have disastrous results on populations located within a wide radius of these plants.

All three wastewater treatment plants appear to be accomplishing little removal of solids and BOD (verified by limited testing data in the data gathering reports). In all plants, the primary clarifiers are septic and covered with sludge blankets. Downstream aerobic treatment may be a futile effort. Current subprojects do not address steps for resolving this problem.

Brief conversations with water plant operations staff indicate a general understanding of what is needed to bring their plants under control. The wastewater treatment plant operators appear to be content that sewage is passing through their plant without any concern over whether or not any meaningful treatment is happening.

Maintenance of both the treatment facilities and distribution-collection networks is virtually nonexistent. This is to a large degree caused by lack of budget coupled with operating personnel untrained in routine maintenance.

3.3.23 RECOMMENDATIONS

- 1) Implement the management systems component of this project with priority to O&M. Modify training programs as discussed in Section 3.4.
- 2) As the more comprehensive O&M program is being developed, there are many opportunities for resident advisors and short-term consultants to provide "hands-on" training. In doing so, they can contribute to improved operations of systems, enhanced capacity to operate, better understanding of what is needed to operate water and sewerage facilities and increased morale resulting from the knowledge that one is running a viable and effective system. Furthermore, these steps can be achieved quickly, at reasonable cost and with available TA consultant resources. The "hands-on" aspects will very effectively supplement the more comprehensive training and management components of this project.

The most important single effort of the resident advisors regarding O&M will be to instill an understanding in appropriate municipal personnel of the value and need for sound O&M. This can best be achieved by frequent discussions and development of simple and appropriate procedures. Also, who are the appropriate municipal personnel requires definition. More ambitious programs will be the responsibility of the management development component of this project, but the simple day-to-day procedures above will provide a sound foundation for implementation of whatever procedures come forth from the management program.

The recommendations which follow are offered as samples of types of activities which can be undertaken immediately and do not involve any significant cost commitments.

- A program of daily raw and product water sampling and testing of a minimum amount of parameters should be established immediately. This will require expediting the purchase of certain lab equipment which is scheduled under the subproject program. Furthermore, it will require some training and monitoring of plant personnel charged with performing these tests. A system of careful recording of all data should be established and carefully maintained. In addition to tightening up plant operation, these data will be essential to the designers of the plant expansions.
- This program should be looked upon as an interim, even emergency, step and not in conflict with the longer range plant operation training program and manuals now being developed by the TA contractor. In actual fact this program can be readily integrated into the larger, more formal one.
- Development of this interim program should be a joint effort of the resident advisors and the two expatriate trainers. The trainers would be responsible for outlining the technical elements and the resident advisors for implementation and monitoring.

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- The water distribution systems are currently undergoing a program of valve location and valve chamber installation. A program should be developed by the resident advisors which addresses the items listed below. This will initiate a significant start on routine distribution system maintenance. In addition it would establish information which will be essential to execution of the leak detection programs recommended by the master plans.

Water Distribution System Maintenance Program

- Locate all existing hydrants and valves greater than 4 inches.
- Operate each valve and hydrants. Check for problems.
- Make repairs or identify as inoperable and mark for future replacement.
- Upgrade existing maps and provide specific locations (ties) for each valve.
- Develop a card file system which indicates valve condition-type date of last operation.
- Commence a limited but systematic program of flushing mains. (Due to current water shortage, this should be limited to known problem areas.)
- Each city now has at least one sewer jet cleaning machine. As mentioned earlier, training by a representative of the manufacturer in the use of the machine is forthcoming. In addition to that, development of a systematic cleaning program should be established. This could be done by the resident advisors with minimum outside help. Similar programs established in Cairo and Alexandria can be drawn upon with visits to counterparts in those cities by selected municipal personnel.

3.3.3 Implementation of Capital Projects

3.3.31 Status

The resident advisors along with the AID engineers very early in the project addressed the need to improve the ability of

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the cities to procure goods and services necessary to maintain and expand their infrastructures. The result has been a significant improvement not only in procurement documents but also in methods of evaluation of bids leading to award.

At present all cities are utilizing the services of local engineering consultants to prepare reports and designs.

Municipal capacity to inspect construction works is quite poor and needs significant help.

3.3.32 Observations

The greatest success to date is in the area of procurement procedures. All cities now have personnel who understand and, most importantly, believe in the new procedures. Discussion with local contractors reveals unanimous support of the more stringent, but clearer and more fair, procedures. No apparent adverse effect has developed where contractor pricing is concerned.

New project monitoring methods are in all cities largely based upon the training course given under the project. However, there seems to be some divergence of application. One major question in all cities is whether or not the new methods are in fact catching on in the municipalities. Currently the resident advisors and AID engineers are taking the lead in project monitoring. Another question is the adequacy of the methods regarding the reliability of information used.

The team reviewed samples of various types of procurement, evaluation and monitoring documents. Following is a summary of observations regarding these documents.

Equipment procurement: Samples of the very simplistic documents which were utilized prior to the project were seen. They usually consisted of a few general paragraphs. The current documents were very detailed and easy to interpret. They were a vast improvement and need very little further improvement.

Construction: Previous practice was to tender pipeline construction with only a rudimentary location sketch and minimum technical specifications. Payment methods were confused and overly simplistic. Documents now being prepared show a very great improvement. Plans showing location of the

new work include information pertaining to location of existing utilities which will be encountered. Talks with contractors indicated that crossings of water pipes was the greatest cause of problems in the past. These are now indicated on construction documents. The technical specifications and "boiler plate" are quite complete and more clearly establish the contractors responsibilities. Payments based unit prices established in the bid are clear and easy to follow.

In addition, similar documents prepared by a local consultant, A. Warith, Cairo, were reviewed. These were for more complex works which are beyond the present capability of the municipalities to take on. The documents were superior and at a level one would expect from an expatriate firm.

Bid Evaluation Procedures: Prior to PCD, bid evaluations usually consisted of an auction involving those who put in bids. Award had little relationship to the technical bids and always was based on the lowest price without any consideration given to competence.

Current evaluation procedures are improved and more closely follow requirements and procedures established in the bid documents. Qualifications and experience weigh more heavily in award decisions. The team was told of several instances where a low bidder was passed over due to past poor performance or lack of capacity to do the work.

Procurement of Local Consulting Engineering Services: In the past none of the cities had any meaningful experience in selecting and engaging consulting engineers. The TA consultant, with considerable assistance by the AID engineers, has developed and tested a process which works extremely well. Several contracts have been signed and others soon to be pursued.

The process is very much in line with AID's, namely a two-envelope system comprised of a technical proposal and a cost proposal. The first-ranked technical proposal is invited to negotiate based upon costs included in his second envelope-cost proposal.

A review of design reports and construction documents prepared by a local consulting engineer showed excellent and very professional work. This same consultant is involved in work in two of the cities. In one of the cities sewer plans and profiles prepared by the municipal staff were reviewed.

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They were a great improvement over pre-PCD drawings, but were still inferior to those prepared by the Cairo-based consultant.

Construction Monitoring: Procedures for monitoring construction progress were also developed jointly by the resident advisors and the USAID engineers. Before this, such procedures were unknown. These procedures were initially transferred to municipal personnel in training seminars in which one USAID engineer assisted. The team saw examples of these procedures being applied in each of the cities. The procedures include progress bar charts and cash-flow monitoring with careful documentation of all key actions and milestones.

These procedures are well conceived and appear effectively used in all cities. However, they are entirely dependent upon reliable information coming in from the field. This point requires particular emphasis since indications, based upon discussions with the resident advisors, are that this information is not reliable. This is one area which requires urgent attention and needs carefully designed and sequenced training programs.

Construction at this time is limited to small pipeline installation (both sewers and water mains), minor civil works improvements and one small sewage lift station. Casual observation indicated that substantial improvement is needed regarding attention to details. An example is very poor leveling and finishing of the concrete slabs cast for setting of new generator sets. The slabs were reasonably well formed but the surfaces lacked screening and were covered with foot prints. Twenty minutes of attention plus adequate protection during curing would have resulted in a far better final product. The municipal inspectors need a great deal of guidance from the resident advisors regarding attention to details.

More significant improvements in construction surveillance and monitoring are needed and should be an important part of the management improvement program and its related training activities.

3.3.33 RECOMMENDATIONS

- 1) As was discussed above, the municipal construction inspectors appear to be deficient in enforcing the contractors to pay attention to details. Current works

are small and unsophisticated. When larger and more complex works are commenced, such lack of attention to detail will result in poor construction.

- 2) Continuation of the use of local consultants to undertake studies and prepare documents will most likely continue well into the future. Municipal staff should be closely integrated into these projects, and where practical, seconded to the consultant. The use of well-qualified local (generally Cairo-based) consultants presents opportunities for the transfer of skills and technology to provincial staffs. In two cities a construction surveillance contract to a local consultant is planned in the very near future.
- 3) The resident advisors should take a much stronger role in coaching and guiding municipal inspectors in proper attention to construction detail. If good habits are instilled on the current small projects, they will be enhanced as more complex projects are undertaken.
- 4) Gradual lessening of the role of the AID engineers and the resident advisors in the actual monitoring of projects should be started. Their involvement should be limited to spot checking and coaching municipal personnel.

3.4. TRAINED PERSONNEL

3.4.1 Status

To date, a total of 338 people have been trained in 18 training courses conducted under the PCD project (see Appendix D). Of these courses, five have been done in-house: an orientation seminar, an introduction to pumps and motors, a chlorination workshop, a procurement and contracting course, and a project controlling and monitoring courses. Training manuals were prepared for the last three. The following courses are being designed and manuals developed in-house: preventive maintenance, project evaluation, training-of-trainers, wastewater treatment plant operators, wastewater collection system O&M training, wastewater distribution networks operator training, water treatment plant operator training. Other accomplishments include:

- identifying local training programs and matching those to urgent-need training,
- establishing a job description for and selecting municipal training coordinators

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- with the help of the municipal training coordinators, conducting a job classification survey in Beni Suef and Fayoum,
- conducting a walk through assessment of two water treatment plants in Minia
- developing an Arabic translation of key water and sewerage technical terms.

The purpose of the project is to improve and expand the capacity of the three governorates and their capital cities to identify, plan for, budget, finance, design, construct and maintain urban infrastructure and services at the municipal staff level. A cadre of trained municipal staff is an important indicator of this capacity-building purpose. To achieve this trained cadre, the project paper proposed diagnosing the financial management practices and procedures, the budgeting and planning process, the organization and management including personnel functions, and the O&M functions. This would lead into the training program and specialized short-term assistance. This strategy was carried over into the TA proposal. This approach changed in the TA contract which specified that the advisors will not be expected to perform a detailed diagnostic review.

The contract specified five training tasks:

- (A) assessing municipal training needs;
- (B) identifying local training programs;
- (C) identifying appropriate international training programs, including long- and short-term training;
- (D) establishing in-country programs:
 - a. training of key managers
 - b. training of trainers
 - c. on-the-job training
 - d. special skills training
 - e. developing training course materials.

3.4.11 The Role of the TA Contractor

Training is one of three major areas in the TA contract. The Contract provides for two years of an expatriate training advisor to establish the program and 2 Egyptian trainers for the life of the program to carry it on. In addition, there are 96 man-months to provide local short-term specialized training. The contract does not provide for overseas training. The resident advisors are the key personnel around whom all project activities in the cities take place. In this

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role, they have been charged with identifying special or urgent training needs.

3.4.12 Municipal Training Structure

Apart from the project training coordinators, designated in mid-1983 at PCD's request, municipalities have neither staff nor budget for training. Fayoum is a very recent exception to this as a new training section has been added to the cities' organizational chart. As yet it does not have budget and is not staffed beyond the coordinator. There is no training counterpart at the ministerial level. The governorate training section and the Project Steering Committee so far have not been involved in training decisions.

Currently the average municipal staff of the three cities is 1900 and the average water and sewerage staff is 372. Because of employment policies, a person's academic qualifications may not relate to his job responsibilities. Based on discussions with municipal staff, formal training occurred very infrequently before PCD. The size of the municipal staffs coupled with current employment practices strongly suggest that the design of an appropriate PCD training program should have been based on identifying who makes critical decisions and who performs key activities for water and sewerage infrastructure.

3.4.13 The Training Program

The first annual work plan emphasized surveying municipal services to identify (i) a stratified profile of the educational, training and experience level of potential municipal trainees and (ii) in-country and international training programs. The end product was to be the master training program. The work plan recognized that a trained municipal cadre is an important objective of the project. Developing training manuals and guides and translating them into Arabic was deemed as a first step in achieving this objective.

The second annual work plan did not evaluate accomplishments against the first-year targets. The first-year targets were cited as too ambitious for reasons which included: a hiatus in hiring one of the Egyptian training assistants; a long lead time in getting established and oriented; the language barrier and the need for Arabic translations; delay in establishing the resident advisors in the cities; and internal contractor coordination problems. Many of the first-year tasks were

linked to the survey which did not occur. Much of what did occur was in the area of urgent-need training as requested by the resident advisors. Eight local training centers were contacted of which three were used to conduct training programs: AUC, Cairo University, and MANTRAC.

Nonetheless, the 1983-84 workplan did not establish measurable priorities, objectives or realistic plans for implementation. Instead, the plan set out as "objectives" the following list of courses:

- (a) chlorine workshop;
- (b) project contracting seminar;
- (c) project supervising seminar;
- (d) training for designing, constructing, and maintaining streets;
- (e) procurement procedures and practices;
- (f) preventive maintenance for water/wastewater plants;
- (g) water treatment plant operator training;
- (h) wastewater treatment plant operator training;
- (i) train-the-trainers course;
- (j) management training;
- (k) training for operating and maintaining water distribution and wastewater collection systems;
- (l) English training; and
- (m) Urgent-need training.

As of this point in the year, most of the courses described have been given, are under development or about to be given.

3.4.2 Observations.

3.4.21 Training Procedures

For each training course, a summary is prepared outlining a description, the objectives, who should attend, and the main topics covered. This summary is sent to the resident advisors who give it to the municipal project coordinators in their cities. The municipal project and training coordinators determine the training selection which the Mayor authorizes. This list consisting of names and designations is returned to the TA training section preparatory to conducting each course. At the conclusion of a training program, the trainees fill out a course evaluation consisting of a checklist of about 10 questions.

Discussions with municipal staff indicated room for improving these procedures. Because there was little attempt to meet

with municipal staff before designing the course content, the courses were designed generically and may not meet the special needs of each city. For some courses, the amount of information provided in the course summary was felt inadequate for selecting the appropriate trainees. The description of who should attend a course assumed homogeneity of supervisors and technicians whose education and experience vary widely. The list of trainees and job titles provided no further basis on which to determine the level of education and experience for molding a training course. The extent to which a checklist form provides sufficient feed-back for evaluating a course is doubtful, and so far the results of these course evaluations have not been shared with the municipalities. Although it is in the job description of the training coordinator, there are no procedures for follow-up to see if trainees are applying what they learned.

Modifying procedures is fairly uncontroversial and offers the possibility of greatly improving the training program. The importance of getting on with the job and achieving an immediate impact in the initial stage of the training program must now be reassessed in order to institute procedures which treat the municipality as a partner in this training effort.

3.4.22 Training: Constraining and Enabling Conditions

Unlike technical factors which are more easy to isolate and identify, training is less visible, more mundane, and has less political appeal than infrastructure development. Appropriate training takes time to institute and produce an effect. For the PCD project, it depends on (i) correctly identifying where existing major shortcomings lie in the water and sewerage facilities; (ii) anticipating the needs (technical and administrative) of future facilities and (iii) assessing the actual and potential quality of the municipal staff for O&M for existing and future facilities..

Whatever form this assessment takes--and the long-debated question over whether to conduct a diagnostic survey seems to have become a red herring--a basic, first step is understanding what exists before suggesting how things might be changed. This step has not occurred and is the missing foundation on which a training program should be developed. Also, it is linked to the team's recommendation on the urgent need for introducing a management program. This program would give a firm foundation on which to develop a carefully

targeted and properly sequenced training effort. Together, the quality of the management and training efforts will significantly influence achieving the capacity-building objectives.

So far there is a very positive effect in the municipalities: people want training. As the project is instituting change, the municipalities are changing. People no longer want to be passive recipients of information. The chairman of one city council concluded that "the PCD project is a golden opportunity" for his staff since, he observed, it offers training which is never offered in GOE programs. This represents a significant, positive momentum on which the project should capitalize over the next two years and suggests strong grounds for training opportunities. However, the orientation of the training needs to change dramatically from a theoretical, top-down approach to a hands-on, bottom-up approach. And it needs the right support and priority.

Appropriate training is a slow, incremental process. By contrast, a lot of work has occurred in a relatively short time span: a variety of technical--and, to some extent, general--courses have been taught and training manuals have been and are being developed. This point needs especially strong emphasis. However, of the nearly 350 people trained so far, there is no basis on which to determine (i) its effect on the actual and potential quality of the trainees, (ii) its effect on the existing and planned water and sewerage facilities, and (iii) what percentage of a trained municipal cadre that figure represents. With only a little over two years remaining in the TA contract, the inability to quantify what constitutes a trained municipal cadre is a very fundamental weakness in the training component of this project.

Within the TA team, there is an evident gap in communications between the engineering and training disciplines. To a great degree the project seems dominated by an engineering focus, although once again this is somewhat of a red herring. It cloaks the difficulties that the TA staff has working together as a team and toward achieving a common goal. As such, the departmentalism of the training section has been a function of both decisions by and for it. Although much of the remedy is internal to the TA staff, team work also requires the strong support of USAID.

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3.4.23 Assessment of the Training Program

The foregoing paragraphs have suggested probable reasons for success and shortcomings for the training component of the project. These broad observations are supplemented below by assessing the five training tasks outlined in the contract:

(a) Assessing Municipal Training Needs

A significant proportion of information on municipal training needs has come in the form of "shopping lists" which indicate generic headings of possible training programs. The question is whether such lists allow adjustments for reflecting the causes of municipal training needs and their appropriate training design. Management has been the missing link which should have supplied core information on the municipal strengths and weaknesses for developing a master training program. Added to this has been the conscious focus on "urgent-need training". This focus seems to enforce a notion that training success is measured in terms of the numbers of training programs conducted, manuals developed, and people trained, irrespective of its appropriateness. Ranging training programs against program objectives, Table 4, shows that there is a lack of balance between the various program components.

(b) Identifying Local Training Programs

The training section has identified approximately eight local training organizations of which three have been used for a total of twelve courses. How appropriate readymade training programs are for achieving the objectives of the project needs careful assessment which should be done on a case-by-case basis. Some problems associated with local programs included a too-academic approach and a focus on a level of technology not existing in the municipalities.

The training program should take steps also to benefit from substantial training efforts under the aegis of the decentralization sector.

(c) Identifying Appropriate International Training Programs

Due to pressures of time or other priorities, this area has so far not been explored. Yet international training programs

} English/French
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could have an important effect on the incentives and motivation of the municipal staff. The municipalities have a wealth of, for the most part, untapped human resources whose low wage scale remove much incentive to perform efficiently. By contrast, international training programs could have a marked influence on the attitudes and motivation of key municipal managers. They have been used successfully in the DDI and BVS projects and their application to PCD should be considered. To what extent flexibility exists in the project budget for financing trainees to international programs would need assessment.

(d) Establishing In-Country Programs

Special Skills Training: The emphasis of all training to date has been on special skills training. English training is the most popular but its effect on the objectives of the project are doubtful. The in-house project contracting and controlling and monitoring courses have been the most successful. The focus of the courses was specific, they met a felt-need of the trainees, one FSN engineer participated in developing and teaching the courses, and all three FSN engineers and the resident advisors aided in follow-up. These courses demonstrated a good team effort between the resident advisors, the FSN engineers and the training section.

On-The-Job Training: As the need arises, particularly with AID requirements and procedures, the resident advisors execute informal on-the-job training in the "learning by doing" mode espoused by the project. This approach has had an initial impact and municipal performance, where the approach has been applied, has improved. However, some limitations include: (i) a lack of integrating the increasingly complex demands of implementing the master plans with on-the-job training needs; (ii) insufficient IA staff to handle both accelerated subproject implementation and informal training; (iii) an undefined universe for who requires such training; and (iv) an inability to say what indicates when this training will be completed. These limitations are not insurmountable and should be addressed as part of refocusing and reclarifying the training effort.

Training-of-Trainers: Two of the three municipal training coordinators attended a four-day training-of-trainers

course. A similar course is being developed for municipal staff, and a manual has been prepared in draft. This course is vital to the success of the project, and a substantial planning period should be allowed before introducing it into a municipal structure. Training is an incremental process and where in the sequence of training programs this course should fall needs careful assessment. Also, the objective of a trained cadre at the end of the project does not mean that the training function ends there. The ranks of the municipal staff grow each year, and refresher training of existing staff will be a continuing need. The existing training needs will grow in complexity as the master plan is implemented. Also, lessons may be learned from the large BVS training-of-trainers effort.

Training of Key Managers: To what degree key managers have been trained depends on who has been identified as key managers and what their training needs (technical, management or otherwise) were perceived as. No clear analysis has been done on the key positions for water and sewerage infrastructure.

(e) Developing Training Course Materials

A substantial portion of the training staffs' time has gone into this area, as it was seen as and is a necessary precursor to achieving a trained municipal cadre. Several points are worth noting here. In a relatively short span of time, a substantial volume of training manuals has been produced. Priority was given to having as much instructional material in place before the expatriate training position ends in three months' time. The time and resources of all three trainers as well as a short-term trainer have been consumed by this writing activity.

A final point is the timing of this effort. The expatriate trainer is a valuable resource whose position ends half-way through the TA contract. As such, the question of how his time should be spent is of paramount importance to the project. His long experience in operating sewer treatment plants could provide invaluable hands-on training to the municipalities. Such training teaches basic job skills and prepares people for being able to apply manuals.

Careful attention has been given to developing the technical manuals, and information has been used from such sources as the

American Water Works Association. Care must be exercised that the technical standards are appropriate for the level of municipal interest, experience, education, and available technology. In order to ensure this quality control, manuals should have a technical review and should be field tested before they are finalized.

3.4.3 Conclusions

It has been clear from discussions and reviewing documentation that weaknesses existed in the performance of training for reasons which are attributable to many factors. These weaknesses do not suggest throwing the baby out with the bath water, and special attention has been given to describing how they have resulted from the context in which training occurred. The training tasks discussed above did not provide standards against which progress could be measured. Also, the training and management objectives of the TA contract should have worked hand-in-glove with the other. Instead, management urgently needs to catch up to training. The most effective training to date has been when the management need was clearly defined and reinforced. The project consciously decided to emphasize urgent-need training over training linked to capacity building objectives, which is substantially more difficult to define, develop, and measure. Critical decision points, working relationships, training leadership and contractor and USAID priorities have all had a combined, cumulative influence on the weak performance of the training function. But, opportunities exist. Municipal enthusiasm for training is high. Training has made an initial impact. The city council chairmen are not only willing to accept training, they want training. Training has been slow to start but--and this point requires strong emphasis--with the right focus and support, it is ready to take off.

3.4.4 RECOMMENDATIONS

- 1) The TA contractor should review immediately the lessons learned from the current training program, and develop an implementation plan which sets priorities and lays out:

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- a. interim objectives to be accomplished in the next six months.
 - b. the role of training in implementing the management program and the master plan recommendations.
- 2) Assess the human resource implications of the master plans with a clear idea of implications for training. Include discussion of human (and financial) resource requirements on the agenda in discussions of the master plan.
 - 3) The training manuals developed to date and all future manuals require field testing and technical review. This should include review of the relevance of the manuals to the processes, equipment and skills available in the municipalities.
 - 4) Annual training work plans should not be, as has been the case, a list of courses, but should outline priorities, describe progress in achieving and sustaining a trained municipal cadre, what remains to be done and how the plan will contribute to the achievement of those objectives. It should set out a sequence for achieving a trained municipal cadre. The plan should be discussed in draft with the municipal coordinators, mayors and resident advisors. The training section should consider leading a 1-2 workshop to review work to date and to review the proposed 1984-85 work plan and to clarify coordination, communication, responsibilities and procedures.
 - 5) The training program should focus on the priority, capacity-building objectives of the program. As the management program develops, the training program should be integrally related to it. This will entail weeding out such admittedly popular programs as English language training.
 - 6) As part of the review of relevant training opportunities, the training section should investigate 1) the experiences with local and international training programs under DDI and BVS; 2) programs and materials developed by other AID projects in the water and wastewater program; 3) training plans and programs of the Ministry of Local Government, including the Sakkara Training Center; and 4) NOPWASD and governorate-level training plans.

- 7) Institute vigorous follow-up and evaluation of training programs.
- 8) Additional expatriate training expertise will be necessary to implement the needed program and the TA contract should be amended accordingly. A lot of assistance will be needed to achieve in two years time the capacity-building objectives of which training is the foundation. This will require leadership, team building, coordination, well-thought-out priorities, and a proper sequencing of events.

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4. CONCLUSIONS

The PCD project was originally conceived as a mix between capital and capacity-building components. It was intended that through providing technical assistance and capital for urban infrastructure, the project would improve and expand the institutional capacity of the three governorates and their capital cities.

The project paper was in several ways, overly ambitious in terms of its broad institutional goals, in the time frame it proposed, and in the range of infrastructure it considered. Each subsequent document has, in some way, modified or narrowed the scope of project activity.

The first clear change in direction took place with the wording of the scope of work for the TA contractor, a draft version of which had been included in the project paper. The contract focused contractor activity on a narrower and more realistic scope. In so doing, the emphasis of the technical assistance shifted from general, functional and engineering advisory services to program and project management assistance. Diagnostic reviews of municipal operations and procedures were deleted, including the evaluation of present city staff capabilities, staffing needs of the proposed program and the analysis of financial constraints, as was the stipulation requiring the development of implementation plans for management issues, including operations and maintenance, engineering and project management requirements.

To accelerate master plan development, the "bells and whistles" were removed from the specifications, including economic feasibility and environmental studies. The design horizon was shifted from 1990 to 2020. The locus of judgment about the short- and long-term plans became the appropriate municipal authorities and the contractor instead of the Elected Council. In preparing the master plans, the contractor was instructed to "understand that the primary objective of this task is the rapid development of conceptual plans that will allow the cities to proceed quickly with design and construction." Similarly, the annual work plans, particularly the most recent one, have further narrowed the TA contractor's role to three primary functions: preparing master plans, implementing subprojects, and conducting specific training courses.

This shift has occurred for a number of reasons. One, as indicated, the scope in the PP was broad and non-specific. It was intended to be flexible and as project implementation

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progressed, it was clearly necessary to focus on a realistic agenda. Two, both AID and, at AID's direction, the contractor have responded to the pressure to obligate and disburse funds. AID made commitments to subprojects before the contractor was in the country. After the TA contractor's arrival, their efforts were directed primarily toward the capital components of the project, the subprojects and the development of the master plans on which an accelerated rate of disbursement was based. The project paper had underestimated how demanding the implementation of subprojects would be and overestimated the amount of data available for master plan preparation. A data collection phase was added which pushed master plan preparation to the second year. A third factor contributing to the direction the project has taken has to do with contractor personnel. The contractor fielded a team rapidly, but the team faced considerable difficulty getting established in the provincial capitals. The contractor also suffered from a period of personnel turnover and the lack of key expertise. Apart from the training advisor, there was, for example, no sanitary engineer on the staff until April 1983, almost a year after the TA team arrived.

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Finally, a conscious decision was taken to adopt an approach described by the AID project manager as "learning by doing" to the very key capacity-building aspects of the project. The strategy was to deal with tasks and problems as they came up, primarily in the context of subprojects. The implementation of subprojects was planned to be both the incentive and the means for capturing municipal interest and introducing incremental change.

There are a number of fundamental reasons why this approach made sense. The credibility of the PCD project and its staff needed to be established in cities with no other donor activity and in municipal structures unused to external advisors. Change is difficult in any bureaucratic setting; in Egypt it has proved to be particularly difficult when it is presented as such. Change is much more readily assessed and accepted on its merits when it is accompanied by tangible rewards for the employees as well as for the cities more broadly.

Having said this, in the team's view this strategy 1) has not been fully implemented and 2) is no longer sufficient to achieve the project's purposes. There is no question that this approach has been successful in the process of subproject justification, the procurement of goods and services, in monitoring contract activity and meeting AID's and the governorates' reporting requirements. At the same time, opportunities to achieve early improvements in both facility

operation and construction methods have not been utilized. The TA contractor has expended considerable amounts of time on basic system data gathering, facility evaluation and observation, developing subprojects and observing actual construction. Yet, these have not been used as opportunities for informal training and have not resulted in improved training programs or significant operational improvements. As a second example, the cities do not appear to have been significantly involved in master plan preparation and decisions apart from supplying data. They do not seem to have been actively educated about the options, impacts or costs entailed in what is probably the largest single infrastructure investment decision the cities have been asked to consider for many years.

Now as the project enters a new phase, this "learning by doing" approach is no longer sufficient. As the scope of the project widens, it will be necessary to identify and focus on priority problems to avoid dissipating efforts unproductively. As the systems become more complex, planning and sequencing of activities become more key.

Furthermore, many of the problems which the cities face go well beyond the purview of the municipal employees on the departmental level. Several of the key issues, most notably that related to revenue retention, can only be addressed in the context of national policies and decisions.

A necessary element for increased local capacity is to foster genuine participation and responsibility in the process of subproject selection and implementation. The cities' municipal staffs have moved past the embryonic stage of composing wish lists and are, with the help of the resident advisors and the project monitoring engineers, making better subproject selections and thinking through design and justifications more carefully. In part that thinking process is being driven simply by the availability of funds. One of the project coordinators pointed out that there was little point in planning and designing projects if only a small fraction was approved. In one city, the Elected Council has begun to be involved in subproject selection.

The USAID Decentralization Portfolio, as a whole has met with considerable success in decentralizing decision-making on individual subprojects. PCD municipalities are better equipped than rural villages to assume that responsibility by virtue of their staff and the presence of resident advisors. At the

beginning of the project, the administrative capacity and the lack of skilled manpower in the municipality limited the extent to which planning and management responsibilities could be delegated to the municipal level. However, through the work of PCD, conditions are beginning to change in the municipalities. Now may be the right time to make adjustments in these procedures to reflect this changing environment.

Because PCD was originally approved separately from the decentralization sector, compliance to 611A criteria has been interpreted differently than in projects in the rest of the sector portfolio. As a result, AID has been involved in a level of subproject review and approval which detracts from the decentralization of decision-making, in addition to occupying three engineers full-time as project monitors. There is little question that the project monitors have done an outstanding job tracking project expenditures and even providing training to the municipalities in project monitoring and procurement. However, if the purpose of decentralization is to be effected, the procedures and the way that they are applied need to be more consistent with that purpose.

(See T3 PRC Issues)

The project faces major choices at this point with respect to capital investments and capacity-building. The choice at this point is which should receive the major emphasis and which should be subordinate. There are, in the team's view, sufficient changes to warrant a revision of the project purpose and portions of the project paper if the more capital intensive path which the project has taken is ratified. If for no other reason, this is necessary because the magnitude of the costs means that the full systems that were planned, including water and wastewater treatment and full distribution and collection systems, can no longer be funded. The magnitude of the costs also throw the original economic and financial analyses into question. If, on the other hand, the original purpose of decentralized capacity building is to be emphasized, the project will need substantial refocusing and adjustments in procedures, and work plan documents.

4.1 RECOMMENDATIONS

The Mission must determine which portfolio the project fits within and amend project documents and adjust project management to reflect this decision. The Mission has three options:

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Option One

Amend the project paper to reflect a shift of the project to one which emphasizes capital infrastructure in water and wastewater without adding additional funds.

Recommended Actions:

- 1) Amend the project purpose, logical framework and financial and economic analyses.
- 2) Stage infrastructure investments to permit proceeding on priority facilities.
- 3) Delete the PCD project from the Decentralization Sector.
- 4) Define the objectives of the management advisory component of the project in terms of the viability and sustainability of existing and planned facilities in water and wastewater.
- 5) Define the relationship of the PCD project to other water and wastewater projects and to the policy issues in that portfolio.

Option Two

Amend the project paper to reflect a shift of the project to one which emphasizes capital infrastructure in water and wastewater, adding additional funds.

Recommended Actions: See Option One

N.B. The team believes that it would be unwise to make additional major commitments of funds to the water and wastewater infrastructure of these three provincial cities without a better indication that the operation and maintenance of the new systems will be assured and that the question of financial viability will be addressed. At the same time, the team believes that there is a willingness to address these issues in the three cities, and perhaps an even greater ability to do so than in the primate cities of Alexandria and Cairo.

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Option Three

Redirect project toward original emphasis on decentralization and capacity building with capital components focused on investments in water and wastewater.

Recommended Actions:

- 1) Stage water/wastewater infrastructure investments in plants over time to permit proceeding on priority facilities, but retain a significant portion of funds for locally defined subprojects in water and wastewater, roads, and solid waste.
- 2) Request USAID Legal Advisor/Egypt to clarify the requirements for compliances with 611A for subprojects funded under this project as they relate to procedures followed in the Decentralization Sector Support PAAD and, if necessary, amend the project authorization to make the 611A requirements consistent with that document.
- 3) To the extent prudent and feasible, delegate authority to the municipalities for approval of sub-projects. Concurrence by the Elected Council may also be desirable. This would necessitate developing clear guidelines for acceptable subprojects and orienting municipal officials in both technical and financial guidelines and procedures.

The other recommendations in the body of the text apply to whichever option the Mission decides to pursue.

PERSONS INTERVIEWED

PROJECT STEERING COMMITTEE

Mr. Sarwat Attallah
Governor of Fayoum
Chairman,
Project Steering Committee

Dr. Mahmoud Kamel El Rayis
Governor of Beni Suef

Mr. Salah El Deen Mohammed Ibrahim
Governor of Minia

Mr. Rabie El Sadway
Undersecretary for the Office of
Local Government

Mr. Ramses Sadek Wahba
Provincial Planning Department

Beni Suef

General Mohamed Abdel Moneim Awad
Mayor

Eng. Zakaria Mohamed Khalaf
Vice Mayor & Director of Engineering
Department

Eng. Hassan Yehia Mahmoud El Watani
Party Representative
for the Government

Mr. Shouhdi Malak
Planning Director, Governorate

Eng. Milad Sedhom Zebib
Infrastructure Director

Mr. Mohamed Shouky Abdel Latif
City Secretary

Eng. Fawzi Abdel Fattah
Secretary General, Governorate

Executive Director
Cooperative Society for Construction

Mr. Mourad Iskander
Committees Director, City

Engineer Mawad Soliman
Member of the Governorate Elected Council

Accountant Ismail Mohamed
El Shenhaby
Training & Project Coordinator

Mr. Ahmed Mohamed Ismail
Training & Project Coordinator

Mr. Samir Attia
Districts Director, City

Mr. Gad El Rab Abdel Said
Planning Director, City

Mr. Mohamed Samir Gouda
Chairman of Popular Council

Acc. Makram Abdel Malek
Contractor Procurement

Acct. Aly Ahmed Mohamed
City Financial Director

Engineer John Corson
Resident Advisor

Engineer Mahmoud Abdel Rahman
Resident Advisor

Fayoum

Mr. Sarwat Attallah
Governor of Fayoum

Mr. Farouk Mohi El Din
Chairman of City Council

Mme Faiza Fawzi
Planning and Follow up
(PCD Project Coordinator)

Mr. Ibrahim Ibrahim Mousa
Deputy Chairman

Mr. Mohamed Refaat Radwan Ali
PCD Coordinator for Training &
Head of Personnel

Engineer Mostafa Said El Kholy
Engineering Department
Chief Engineer

Mme. Sozan Sobhy
Financial Department

Mr. Makram Hanna
Procurement Department

Mr. Mohamed Abd El Hady
Chief Sewer Engineer

Mr. J.M.Thompson
Resident Advisor

Mr. Gharieb El Sawi
Resident Advisor

Minia

Mr. Houssein El Islambooli
Mayor

Dr. Mahmoud Safwat Abdo
Secretary General

Mr. Farouk Gabr
Deputy Mayor

Samira Abdulla
Project & Training Coordinator

Hamada Shams El Din
Manager of Contracts

Hamza Gaber
Controller

Mahmoud Abu Zaed
Chief Water Engineer

Khalil Mohamed
Chief Sewer Engineer

7/6

Maher Raouf
Chief Engineer Roads

Robert Boos
Resident Advisor

Ashraf Hassan
Resident Advisor

Wilbur Smith Associates, Cairo Office

Mr. Robert Harbison
Chief of Party

Mr. Wayne C. Bellaman
Deputy Chief of Party

Mr. Robert Waite

Mr. Ralph Leithold

Mr. C.B. Zielaskowski Casey

Mr. Samir Sayed

Mr. Ahmed Sabry

PROJECT DESIGN SUMMARYLOGICAL FRAME WORK

Page 1 of 3

PROJECT PURPOSE

To improve and expand the growing internal capacity of the three governorates, in general, and their capital cities, specifically, to identify, plan for, budget, finance, design, construct, and maintain urban infrastructure and services at the municipal staff level.

END OF PROJECT STATUS

1. Provincial governorates design and construct infrastructure projects without relying on central government based upon locally identified needs, financing, and growth estimates.
2. Observable increase in level of maintenance and operational efficiency of infrastructure services.
3. Increase in level of experience and training of professional staff.
4. Improved management and accounting systems adopted and staff trained in their use.

MEANS OF VERIFICATION

1. Project implementation records.
2. Comparison of baseline data on maintenance and operational efficiency to end of project status.
3. Personnel records.
4. Observation of management and accounting practices at the city level.

ASSUMPTIONS RELATED TO PURPOSE

1. Authority which has been delegated to the governorate will be exercised.
2. Added economic and administrative authority will be given to the governorate to carry out provincial city infrastructure projects.

PROJECT DESIGN SUMMARY

LOGICAL FRAMEWORK

Appendix B

Page 2 of 3

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE
INDICATORS

MEANS OF VERIFICATION

ASSUMPTIONS FOR ACHIEVING
OUTPUTS

Project Outputs:

1. Improved planning, budgeting, operational management systems and procedures for infrastructure for three provincial capital cities.
2. Capacity in place to implement major capital infrastructure projects.
3. Infrastructure in place.
4. Completed long-range capital investment plans for three provincial cities.
5. A cadre of trained municipal personnel.

Magnitude of Outputs:

1. Fully coated capital investment water and sewer master plans.
2. \$73 million worth of infrastructure installed, in the three cities.

1. Review and analyze quality and completeness of designs for infrastructure projects and management operations control system.
2. Physical inspection of quality and completeness of subprojects.
3. Consultants reports.

1. Sufficient and capable consultants will be available to carry out the design and management operations for governorate/city and that sufficient training will be given to insure a competent local staff to maintain the systems.
2. Sufficient and capable A/E consultants and construction contractors will be available to carry out the projects within the cities.

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PROJECT DESIGN SUMMARY

Appendix B

LOGICAL FRAMEWORK

Page 3 of 3

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE
INDICATORS

MEANS OF VERIFICATION

ASSUMPTIONS

Project Inputs:

1. U.S.
Funds for general
consultant and
technical assistance.
2. GOE
Project staffings.

Land and right of way.

Funding for O and M
projects.

Implementation Target

1. U.S.
\$75 million.
2. GOE
I E Equivalent to \$20
million with an
additional \$5 million
"in-kind contribution."

1. GOE budget data.
2. Consultants reports.
3. Statistical data.

1. Availability of U.S.
and GOE funds.
2. Qualified personnel to
direct program at
management level and
for training.
3. Availability/allocation
of materials for con-
struction on a timely
basis.

HR/TRCH/SARD:Jane Handy:jc:1/24/84:Wang 0121k

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MUNICIPAL PLANNING, BUDGETING AND FINANCE ISSUES
IN PROVINCIAL CITIES

1. Planning:

Planning for the provincial cities, to the extent it exists, is still very much a "top-down" exercise, rather than an effective interplay of local and national concerns based on a well defined cost effective and comprehensive agenda. The legal framework for such an interactive process is in place. The practical application, however, leaves much to be desired. A brief description of the process and the actors seems appropriate. A more detailed explanation is contained in the 1981 Sabbour Report on Basic Infrastructure Needs for Provincial Cities, the 1983 Special Assessment of The Decentralization of Local Government in Egypt, as well as various World Bank studies and the 1983 National Urban Policy Study.

At the center of the planning process are the principal national institution: the Ministries of Local Government, Finance, Manpower, Planning, Development, Investment and International Cooperation, Transportation, Housing, the Central Agency for Organization and Administration, and the Local Government Committee of the People's Assembly. Other important ministries that have a significant influence over local affairs, are the ministries of Communication, Electricity and Power, Industry and Mineral Resources, Education, Health, Tourism, Agriculture and Irrigation as well as public authorities such as the National Organization for Potable Water and Sanitary Drainage, nominally under the Ministry of Development.

The Ministry of Planning is charged with the integration of the various sectoral plans prepared by the functional ministries and with the preparation of a comprehensive national plan, projecting the country's needs within a 5-year framework, which is updated annually. Its responsibility includes the review of the annual plans submitted by the governorates and the setting of priorities and budget constraints. The Ministry plays a dominant role in determining the structure, priorities and amounts of centrally controlled investment funds to be allocated to local units of government.

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The Ministry of Development through its General Organization for Regional Planning is charged with the responsibility to prepare structured plans for cities, towns and villages and to assist the governorates in coping with the problems of urban growth. On a parallel track within the Ministry of Development, the Central Agency for Reconstruction studies and implements reconstruction projects throughout the country, while the New Urban Communities Authority is charged with the task of developing new urban communities, including the proposals for the new towns of Minia and Beni Suef.

The coordination function is vested in the 8 regional planning offices, which have jurisdiction over several governorates. Fayoum, Beni Suef and Minia are served by the Planning Ministry's branch office in Minia, and are staffed by central Ministry personnel. The Minia branch office consists of an Under-Secretary of State, his deputy and two assistants. None have had any relevant training in comprehensive planning and economics, and admit freely that they are ill prepared to manage the task of planning within the constraints of fiscal discipline and political pressure from the local and national interest groups. Projects are initiated in response to the perceived needs as expressed by the representatives of the popular councils, the branch office representatives of the various functional ministries, and other political actors, and are compiled into a 'wish-list' for further review by the national planning staff.

In the Minia, Beni Suef and Fayoum Planning Region, the project initiation and selection process is carried out without the benefit of a comprehensive long-range physical and economic development plan and without an explicit set of policy and program objectives that have been approved by the local governing councils. There is little evidence, based on observations and discussions with the planning officials, council representatives and municipal/governorate development heads, that the current process contributes to the decentralization objective or fosters a greater degree of independent thinking, or encourages a trend toward greater self-reliance i.e. fiscal independence from central government grants-in-aid. The attitudes about the effectiveness of the planning process, as expressed by the local officials interviewed, ranged from a benign skepticism to outright scorn.

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Budgeting:

The process of budgeting is closely related to planning, but is by no means a substitute function. Program and project implementation depend on the availability of budgeted resources, and the planning process assures that there is a balance between available resources and needs, and identifies ways and means of obtaining or mobilizing additional resources. Budgeting is a secondary function, constrained by the relative effectiveness of the planning process and the extent of actually and potentially available financing. As in the planning process, budgeting is also a 'top-down' exercise, with central government ministries controlling or influencing the allocation of investment, O&M and salary funds to the local units or government.

Based on the total national investment budget prepared by the Ministry of Finance, the Ministry of Planning provides preliminary allocations to the functional ministries and governorates in the context of the priorities spelled out in the annually updated Five-Year Plan. The tentative distribution of funds is discussed individually with the various Ministers and Governors and collectively with the respective Council of Ministers and Council of Governors. The guidelines regarding potentially available funding are then submitted to the local units in March/April of each year, which leaves approx. 2 month for the reconciliation process, before the budgets are approved in June of each year.

At the local level, the budgeting process runs in a parallel course and is usually initiated by the executive councils passed through the elected popular councils and coordinated by the respective planning officer responsible for the functional areas such as water/sewer, transportation, housing, education etc. The popular councils usually attempt to assure that all projects and service needs as perceived and expressed by local interest groups are properly recorded, even though the funding guidelines from the ministries' representatives may have clearly signalled the unrealistic nature of some of the funding requests. According to some of the local officials interviewed, the elected councils are neither willing nor interested in engaging in a technically more sophisticated budget exercise, but are quite insistent in expressing their views and hopes for larger allocations through the medium of the budget. The budget document, even though it is very rudimentary and lacks the detailed funding justifications, is the main avenue by which the relatively modest expressions of peoples' needs can find their way to the halls of the decision makers in Cairo.

Consequently, the budget documents, at least from the local perspective, is not only an administrative document, but also a political statement and a medium through which one can send the perennial cry for help. From the national perspective, the budget is used for control and accountability purposes, rather than as a tool for project evaluation, monitoring and resource allocation. The two purposes are not necessarily inconsistent and could provide the basis for a constructive interplay of the local and national interest groups, if the local element could be strengthened. However, for that to happen, three conditions must be established 1) the presence of an effective local planning process 2) a degree of control over sources of revenue and 3) an adequate level of untied national grants-in-aid.

The PCD project can do little to strengthen the local budgeting process without addressing the conditions that would justify a more effective and efficient budgeting exercise. PCD could focus attention and technical assistance on the need for cost accounting, pricing and cost estimating as a preliminary step toward improving the communication and negotiation process between the various levels of government.

Financing:

Financing urban infrastructure improvements and service needs represents the third leg of the stool which provides a stable basis for municipal management. It is the critical element that determines a local unit's capacity to govern its own affairs. Without adequate resources at its disposal community growth and development would be stymied and public and private sector initiatives would atrophy. The success of the decentralization objectives must be measured against the rate of local revenue generation and expenditures, independent of central government subsidies and grants-in-aid.

It is evident from a review of the budgets of the provincial cities that the available resources are insufficient to meet even basic local needs. This has brought about a severe dependency relationship between the local units of government, the governorates and the central government entities, which is further exacerbated by the restrictions imposed by national law on the local generation and uses of revenues. Legislation enacted in 1960 (law 124) as amended in 1981 (law 50) provides a number of revenue sources to the cities and towns as listed in Table 1. Governorates, Districts and Villages are somewhat more restricted with regard to the sources they can tap. The collection of taxes, fees and dranges is strictly tied to the jurisdictional boundaries.

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Even though the list seems comprehensive, by comparison with the revenue sources of cities of similar size in the US, the rates and assessments are low and the collection haphazard and inefficient. The extremely low value of economic activity sets an upper limit on the collection of revenue. The entries in the respective column for the three provincial cities were taken from the FY 83/84 budget of the respective cities. The lack of amounts was indicated that the City has not levied any charges or fees, or that it may be recorded in other public documents kept at the governorate and district level, or recorded in various 'Miscellaneous' categories. A detailed description of the various revenue sources are contained in Laws 124 and 50.

Tax assessment, setting of fees, fines and charges is the prerogative of the local popular councils. In discussions with representatives of the councils and department heads, it became apparent that the councils generally are very sensitive to the burden imposed on the property owner and consumers and tend to rely on central government contributions rather than on self-help measures. The fact that all locally collected revenues have to devolve to the National Treasury for recordation does not provide an incentive for local sacrifice.

Based on the limited discussions with local finance officials there seem not be been any efforts made to analyze the potential for raising the taxes, charges, fees and fines and to evaluate the impact on the affected interest groups. PCD may want to consider providing some technical assistance to the respective provincial cities in order to test the long standing assumption that the amount of local revenues raised would only cause a comparable reduction in central government grants-in-aid. There is some evidence supporting this contention, particularly with regard to the investment fund (Bab III), which has been reduced over the past several years not only in relation to the increased revenue collections, but perhaps even more so in response to the PCD project investments.

There is a strongly held perception among local government officials that local revenues only reduce central government transfer, but do not influence expenditures, and that the community at large would be better off with maintaining a low tax base and collection effort then to raise it to its maximum capacity. If this perception can be empirically verified, it would provide a solid base for discussing changes to the national tax laws with the affected authorities at the local and central government level.



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SOURCES OF LOCAL REVENUES
(Law 124/1960 and Law 50/1981)

Revenue Sources	Fayoum	Beni Suef	Minia
1. Property Tax on Buildings and on Land (75%)	-	-	-
2. Entertainment Tax	-	-	-
3. Contributions from Governorate taxes licences, fees. e.g. cars, motorbikes, boats pets, etc.	3100.-	3240.-	3220.-
4. Special Benefit Assessments as a result of infrastructure improvements public utilities, planning activities, etc.	-	-	-
5. Charges levied by Pop. Council on			
- Birth and Death certificates	1900.-	2010.-	6830.-
- Other health regulations	-	8500.-	-
- rights for quarrying, mining, hunting, etc.	-	-	-
- building permits	12200.-	13920.-	21440.-
- road occupancy	-	-	-
- public park usage	-	-	-
- use of public establishments	-	-	-
- surcharge on industrial and commercial activities	2320.-	4845.-	-
- cattle slaughtering	8520.-	7665.-	4000.-
- operation of private markets	23500.-	3610.-	12000.-
- use of lake beaches and river banks	-	-	-
- miscellaneous	30700.-	18600.-	34000.-
- surcharge on housing (4%) rents	-	-	-
- others	-	13655	-
6. Public utility Charges			
- water	60000.-	108560.-	80000.-
- electricity	-	-	-
- others	2570	1175.-	-
7. Rents from vacant state prosperities (reserved for city use)	-	-	-
8. Rent Revenues from profitable City investments e.g.			
- markets	-	-	73300.-
9. international sources			
10. Voluntary Contributions			
- cash or			
- in-kind			
11. Local Dev. and Service Fund			18000.-
12. Cleansing Fund			14300.-

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Little can be said about the expenditure levels in the three provincial cities, except to reiterate the common claim that the expenditures are inadequate to meet the needs. Table 2 summarizes the major expenditure categories for the respective cities.

Of particular concern may be the expenditure trend overtime, in relation to the revenue generation effort. Adequate fiscal trend data was not obtained from the local financial offices, however, an earlier AID sector assessment of the decentralization program provided some revealing insight into the revenue and expenditure patterns of the three cities. The data applies to the respective governorates in which the cities are the dominant element. However, there is no reason to doubt that the fiscal trends for the capital cities are similar to those of the governorates of which they are a part. Table 3 compares the per capita revenues with the per capita expenditures in the three cities over a period from 1976 to 1983. It shows that in 1976 the revenues collected in Fayoum, for example, represented 14% of the actual expenditures. By 1983 that ratio has become even smaller, when per capita revenues represented only 10% of the total expenditures. The trend line is the same for Beni Suef (14.4% in 1976, 12% in 1983) and in Minia (18.3% in 1976 and 12.8% in 1983). The same trend can be observed nationally where local revenue collected in 1976 accounted for 21.5% of local expenditures while in 1983 the ratio had dropped to 17.4%. These trends raise serious question about the fiscal viability of the municipalities in the face of increasing demands for services.

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PROVINCIAL CITIES DEVELOPMENT PROJECT
STATUS OF TRAINING PROGRAM
FEB. 29, 1984

The following is a brief report of the status of the training program for the PCD project:

A. TRAINING ACTIVITIES COMPLETED

1. COURSE: "President Program for Top Managers"
conducted by the American University in
Cairo (AUC)

ATTENDENCE: Chairman of Fayoum City Council
November 6-11, 1982
Deputy Secretary General of Fayoum
Governorate January 15-20, 1983.

PURPOSE: Program designed to meet top management needs
in managerial techniques directed through a
macro point of view and related to the econo-
mic and social development of the environ-
ment.

LANGUAGE: Lecture Material
Arabic and English English

2. COURSE: Phase I, English Training
Conducted by the American University in Cairo
(AUC)

ATTENDENCE: Twenty employees of Fayoum City Council
November 28 - December 30, 1982
Twenty employees of Beni Suef City Staff
December 6 - January 18, 1983

PURPOSE: The English language training designed to
help the trainees understand the technical
language within the PCD project specifically,
the reading, writing and understanding of
technical data and reports.

LANGUAGE: Lecture Material
English English

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3. COURSE: "Liquid and Gas Pipeline and Network Design & Operation" conducted by the "Center for Advancement of Post-Graduate Studies in Engineering Sciences" Cairo University.
- ATTENDANCE: Three engineers of Fayoum City Staff.
(Two newly assigned engineers and older engineer) December 11, 1982 - January 18, 1983.
- PURPOSE: This course designed to study the design, operation and maintenance of the distribution and collection networks.
- LANGUAGE: Lecture Material
Arabic English
4. COURSE: "Public Administration"
Conducted by the (AUC)
- ATTENDANCE: City Planner/Project Coordinator, Engineer in charge of the sewers and the Egyptian Resident Advisor December 8 - December 25, 1982.
- PURPOSE: To acquaint the trainees, with the basic management principles and tools used in public administration particularly as applied to the development process.
- LANGUAGE: Lecture Material
English & Arabic English
5. COURSE: "First Session of Pumps and Motors"
Conducted by PCD Training Section.
- ATTENDANCE: Five engineers and one technician from Fayoum City Staff.
January 25, 1983 Four-hour Workshop.
- Approximately thirty engineers of Minia City Staff February 9, 1983.
- Six engineers and four technicians of Beni Suef City Staff February 15, 1983
- PURPOSE: This workshop is designed to reinforce the trainees knowledge and skills in the area of Pumps and Motors.

- LANGUAGE: Lecture Material
English English
9. COURSE: "Training the Trainers"
conducted by the American University in Cairo
- ATTENDANCE: Two Training Coordinators from Fayoum and Beni
Suef and one Training Advisor PCD Project Advisor
for about 40 hours. May 22 - 25.
- PURPOSE: This course will increase the capacity building
capability for the training coordinators.
- LANGUAGE: Lecture Material
English English
10. COURSE: "Chlorination"
Conducted by the PCD Training Section
- ATTENDANCE: 23 Engineers, 14 Technicians and 2 chemists from
the Water and Wastewater facilities at the three
cities.
From Sep. 13 to Sep. 29, 1983.
- PURPOSE: This course designed to increase the trainees
knowledge in the field of water and wastewater
disinfection, chlorinators and the safe handling
of chlorine.
- LANGUAGE: Lecture Material
Arabic English and Arabic
11. COURSE: "Operation and Maintenance of the Heavy Equipment"
conducted "Caterpillar Training Center"
- ATTENDANCE: One Engineer and Seven Technicians from Fayoum
city.
April 3-6, 1983.
- PURPOSE: Same as item 7.
- LANGUAGE: Lecture Material
Arabic Arabic

- LANGUAGE: Lecture Material
English & Arabic English
6. COURSE: Diagnostic Tests for English Training conducted by the American University in Cairo.
- ATTENDANCE: Sixteen key members of Minia City Staff, January 31, 1983.
- PURPOSE: To determine the exact extent of training needs to proceed with English Language Training.
- LANGUAGE: Lecture Material
English English
7. COURSE: "Operation and Maintenance of Heavy Equipment conducted by " Caterpillar Training Center" at Ameria near Alexandria.
- ATTENDANCE: One Engineer, three Operators and four Technicians March 7-10, 1983 From Fayoum City.
- PURPOSE: This training course will increase the knowledge of the trainees in the area of operation and maintenance of the heavy equipment.
- LANGUAGE: Lecture Material
Arabic Arabic
8. COURSE: Phase 2 English Training
Conducted by the American University in Cairo (AUC)
- ATTENDANCE: Twenty employees of Beni Suef City staff (from phase 1 course) March 7, 1983 for 30 hours.

Approximately twenty employees of Fayoum City (from Phase 1 course) March 8, 1983 for 30 hours.
- PURPOSE: To reinforce the trainees' English Language and to realize the most possible benefit of the English Training.

12. COURSE: Phase I English Training at Minia City conducted by PCD Training Section using (AUC) Materials and an American English Teacher hired from Minia to conduct this course.
- ATTENDANCE: 15 employees of Minia city (for 30 hours)
Starting in April, 1983
- LANGUAGE: Lecture Material
English English
13. COURSE: Basic Diesel Engines
Conducted by "Caterpillar Training Center"
at Ameria near Alexandria.
- ATTENDANCE: 8 Engineers and 12 Technicians from the three
cities.
May 22-27, 1983.
and May 29 to June. 2, 1983.
- PURPOSE: This course was conducted to increase the
knowledge of the trainees in the area of operation
and maintenance of the Diesel Engines.
- LANGUAGE: Lecture Material
Arabic Arabic
14. COURSE: Phase III English Training at Fayoum and Beni-Suef
conducted by (AUC).
- ATTENDANCE: 15 employees of Beni-Suef City council
Sep. 13, 1983 (for 30 hours)
15 employees of Fayoum city council
Sep. 15, 1983 (for 30 hours)
- PURPOSE: More advanced Training on Reading and writing
Technical Reports
- LANGUAGE: Lecture Material
English English

15. COURSE: Procurement and contracting Training Course conducted by PCD Training Section.
- PURPOSE: This course is designed for individuals who are assuming the responsibilities of procuring materials and supplies and contracting on local projects.
- ATTENDENCE: Procurement and Contracting Dept. heads and this subordinates.
- Engineers who have certain roles in project contracting.
Oct. 17, 1983 - Nov. 3, 1983 for the three cities it is four days course.
- LANGUAGE: Lecture Material
Arabic Arabic & English
16. COURSE: Fluid Systems in Water & Wastewater Drainage Schemes
Conducted by the Center of Engineering Research and Training - Cairo University.
- ATTENDENCE: Seven Engineers (three from Beni Suef and two from each of other cities)
Oct. 29, 83 - Nov. 24, 83
- PURPOSE: The course designed to increase the knowledge of the trainees in the areas of pipe lines and pipe networks, pumps and pumping stations, water treatment plants, sewage treatment plants and compact units (water treatment and sewage treatment).
- LANGUAGE: Lecture Material
Arabic English
17. COURSE: Project Controlling and Monitoring conducted by PCD Training Section.
- ATTENDENCE: Thirty eight engineers in charge of supervising public works contracts in the three cities.
From Nov. 28, 83 till Dec. 12, 83 it was three days course.

- PURPOSE:** Upon completion of this course the trainees using two management supporting systems and through application of time-control techniques should be able to supervise the execution of the local projects.
- LANGUAGE:** Lecture Material
Arabic Arabic
18. **COURSE:** Liquid and Gas Pipelines and Networks Design and Operation.
Conducted by the Center of Engineering Research and Training - Cairo University.
- ATTENDENCE:** Five engineers (one engineer from Beni -- Suef and two engineers from each of the other two cities)
Nov. 26, 83 Dec. 21, 1983
- PURPOSE:** A course designed to increase the knowledge of trainees in the area of design aspects of single pipelines (carriers), design aspects of pipe networks, valves, controls, monitoring projection devices, and installation and operation.
- LANGUAGE:** Lecture Material
Arabic English
19. **COURSE:** Oiling and Greasing Technology and its Economics conducted by International Consulting Center for Research (DAS)
- ATTENDENCE:** Three engineers (one from each city)
Feb. 25, 84 - March 19, 84
- PURPOSE:** A course designed to help in setting up a program for achieving the most economic way to operate and maintain machines and equipments.
- LANGUAGE:** Lecture Material
Arabic Arabic

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6 - COURSE: Water Distribution Networks Operator Training.
Conducted by the PCD Training Section.

ATTENDENCE: Water Distribution Networks Engineers and Operators
During the second quarter of 1984 - 1985 annual
work plan.

PURPOSE: To Provide the Water Distribution Network Operator
with skills and knowledge to apply water distribu-
tion techniques necessary to provide the consumer
with adequate quantities of safe potable water for
human consumption at adequate pressure.

LANGUAGE: Lecture Material
Arabic Arabic and English

COURSE: Water Treatment Plant Operator Training
Conducted by the PCD Training Section.

ATTENDENCE: Water Treatment Plant Engineers and Operators
During the third quarter of 1984 - 1985 annual
work plan

PURPOSE: To provide the Water Treatment Plant oferators
with basic skills and knowledge to operate and
maintain his water treatment plant in manner so as
to produce a safe, potable drinking water which
meets established standards as effective and effe-
ciently as possible.

LANGUAGE Lecture Material
Arabic Arabic and English

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PROVINCIAL CITIES DEVELOPMENT PROJECT
Reni Suof, Minia and Fayoum

(Summary of Training Activities)

Item	Course Title	Conducted by	Reni Suof		Fayoum		Minia		Total No. of Trainees
			Date	No. of Trainees	Date	No. of Trainers	Date	No. of Trainees	
1	Orientation Seminar	PCD	-	-	7.9.82		29.10.82		
2	President Program	AHC	-	-	4.11.87	1	-	-	1
3	President Program	AHC	-	-	15.1.83 - 2.1.83	1	-	-	1
4	Liquid & Gas Pipelines	Cairo Univ	-	-	11.12 - 10.1	3	-	-	3
5	Phase I English Training	AHC	12.6.82 - 10.1.83	20	28.11.82 - 30.12.83	20	13.4.83 - 18.5.83	16	56
6	Public Administration	AHC	-	-	8.12.82 - 20.12.82	3	-	-	3
7	Introduction on Pumps & Motors	PCD	15.2.83	15	25.1.83	6	9.2	30	51
8	Heavy Equipment Training Course	Hantrac	-	-	7.3 - 10.3	8	-	-	8
10	Phase II English Training	AHC	started on 7.7.83	20	started on 8.3.83	20	started on 12.83	10	50
11	Train the Trainer	AHC	16.5 - 20.5	1	18.5 - 20	1	started on 12.83	-	2
12	Basic Diesel Engine for Engineers	Hantrac	22.5 - 25	2	-	-	22.5 - 25	4	6
13	Basic Diesel Engine for Technicians	Hantrac	27.5.83 - 2.6.83	4	27.5 - 2.6.83	4	27.5 - 2.6.83	4	12
14	Chlorination Workshop	PCD	13.9 - 14	15	25.9 - 26	8	28.9 - 29	17	40
15	Procurement & Contracting	PCD	17.10.83 - 20.83	20	23.10 - 26.83	20	30.10 - 2.11.83	15	55
16	Project Controlling	PCD	28.11 - 30	14	5.12 - 7	10	12.12 - 23	12	36
17	Fluid Systems in Water & Wastewater	Cairo Univ	29.10 - 24.11	3	29.10 - 24.11	2	29.10 - 11.83	2	7
18	Liquid & Gas Networks Design & Operation	Cairo Univ	24.11 - 21.12.83	1	24.11 - 21.12.83	2	26.11 - 21.12	2	5
	Total No. for each city			117		117		112	346

MUNICIPAL COMMENTS ON TRAINING

Discussions with the municipal staff in each of the three cities included technicians, supervisors, department heads, the project and training coordinators, and the Mayors. Their comments as well as observations based on these discussions follow on selected training programs.

English Training

- This course is extremely popular in all three cities.
- Even with training, the level of English for many is so limited that it is unlikely the purpose of reading, writing, and understanding technical data and reports will be achieved.

Pumps and Motors Training

- Dissatisfaction was expressed that this course did not address municipal problems: they have obsolete equipment whereas the course used new equipment.

MANTRACK TRAINING IN OPERATING AND MAINTAINING HEAVY EQUIPMENT

- The course was deemed academic and a major weakness was no hands-on training on actual equipment.
- Although the lecture was in Arabic, the training aids were in English which was deemed inappropriate for a mix of trainees including engineers, operators, and technicians.
- This area requires on-the-job training. Our site visits indicated some misuse of heavy equipment. Operators may understand only how to push the right levers and buttons, but not the function of the equipment. Moreover, supervisors lacked an understanding of scheduling equipment uses and routine maintenance.

Training-the-Trainers

- Both the lecture and training aids were in English which may have been inappropriate for the English proficiency of one training coordinator.

- It provided the fundamentals of training.
- Two municipal training coordinators would like more training of this nature and they would like training books to use for their work.

Chlorination Workshop

- The approach was academic and trainees expressed a need for hands-on training.
- There was some increased consciousness of safety and procedures.
- The theoretical approach was probably not appropriate for anyone below the engineering level.

Procurement and Contracting Training

- Municipal staff gave this course very high marks.
- Trainees seemed well selected and indicated they learned a lot from the course. It gave them an idea of what they felt USAID required.
- There was interest in repeating the course and that it was too short for what it had to cover.

Project Controlling and Monitoring Course

- This course also received high marks.
- Training selection appeared good but, in some cases, staff were not able to apply the techniques the course taught.
- Again there was interest in having this course repeated.

General Municipal Comments on Training

- The logistics of conducting training varied widely between cities. One training coordinator emphasized releasing people from their jobs for training and conducting the training off-site as an incentive to people; whereas another coordinator strongly emphasized holding training after working hours and in the city itself.

- Incentives were a common concern. Giving certificates for each course and a question regarding the adequacy of the per diem for off-site training were raised.
- There was general agreement (including all three Mayors) that so far the training has had a very narrow focus.
- Releasing people from their jobs for training is not a problem. One person commented that someone can always fill her position. However, training programs requiring heavy attendance from one department should conduct more than one session so attendance is staggered.
- All courses and training aids for all levels should be in Arabic.
- Manuals with Arabic and English side-by-side give an opportunity to learn more English.
- There was interest in on-the-job training and having someone work with them.
- Among the municipal project and training coordinators, there was general agreement that they would like to be more involved in training decisions.
- Among the municipal staff, there was a general thirst for knowledge and interest in training, particularly of the more practical "hands-on" kind.
- Staff also were interested in visiting project sites, an idea that has already been successfully tested by the Beni Suef resident advisers. As a follow-up to the chlorination course, a large contingent of municipal staff were taken to visit plant facilities at Port Said. As a result of seeing equipment in use at Port Said, one plant operator said he cleaned his plant chlorinators.

SUBPROJECTS LIST AND STATUS REPORT

<u>SUBPROJECT #</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
BSW-04.4	ditto	Work just	ditto	ditto	ditto	None
BSW-04.5	ditto	ditto	ditto	ditto	ditto	None
BSW-04.6	ditto	ditto	ditto	ditto	ditto	None
BSW-04.7	Pipe Procurement 3000m -4in.	Bid Documents Under-Preparation	Ditto	District (4000-5000 persons)	1)Installation of pipes 2)Procurement of valves and fittings 3)Service Connections 4)Adequate water supply	None
BSW-04.8	Pipe Installation (Unserved Areas)	No Action	Ditto	District	1)Adequate Supply 2)Service Connections	None
BSW-05.1	Replacement of pipes	46% Completed	Improved Service		1)Adequate to Supply 2)Transfer of Service Connections	Site Visit
BSW-05.2	Replacement of pipes	Awaiting Bid Document Preparation	Ditto		ditto	None
BSW-05.3	Procurement of 11,250m -4in	ditto	<u>ditto</u>	District (15,000-18,000) persons	1)Installation of pipes 2)Procurement of valves and fittings 3)Adequate water supply 4)Service Connections	None
BSW-06.1	New Laboratory at water Treatment Plant	62% Completed	1)Improved water quality 2)Potential reduced USP of chemicals	City-Wide	1)Trained technicians 2)WTP O&M improvements 3)Adequate water source supply 4)Adequate budget for lab.	Visit Lab Site

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<u>SUBPROJECT #</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
BSW-06.2	New workshop at Water Treatment Plant	Awaiting Bid Document Preparation	Improved maintenance capability	ditto	1)Trained technicians 2)Adequate Maintenance budget	Visited Site
BSW-07	Improvements at old Water Treatment Plant	Awaiting justification Approval	Improved operations and quality of water	ditto	1)Trained operators 2)Adequate maintenance budget	Visit Plant
BSW-08.1						
BSW-08.2	Improve house metering	ditto	1)Improved water revenues 2)Decreased waste-age.	<u>City-Wide</u>	1)Delivery of new meters 2)Collection	None
BSW-09	Improve chlorination systems at old water treatment plant	Awaiting Bid documents	1)Water quality safety 2)Plant and surrounding area safety.	City-Wide	1)Training 2)Maintenance budget	Observed Current unsafe conditions.
BSW-10	Provide Construction vehicles and equipment (forklift, compressor, trucks & mobile crane)	Procurred	Increased ability to construct and repair facilities	City-Wide	1)Proper use of equipment training 2)Maintenance budget	Saw equipment at control storage depot.
BSW-11	Consultant engineering services to design raw water intake improvements	60% Completed	1)Increased raw water capacity to both plants 2)Private sector work.	City-Wide	Transferred technical know-how municipal engineers	Reviewed Procurement Documents
BSW-12	Provide standby electrical supply (gen-sets) for water treatment plant	Procurred	Elimination of service disruptions caused by power outages	City-Wide	1)Proper installation 2)Proper maintenance	Observed gen-sets stored at site

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<u>SUBPROJECT #</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
BSS-04.1	Extension of sewer laterals in Dallala area	43% Completed	Elimination of sewage ponding near apartments		1) Routine sewer maintenance 2) Adequate capacity in connecting trunk sewers.	Observed at site
BSS-04.2	Extension of sewer laterals in unserved areas	Award of construction contract pending	ditto		ditto	None
BSS-05	Modification of Orabi St. lift station to main lift station.	Awaiting decision on justification	Improved system operation	City-Wide	1) Integration into master plan scheme for expanded sewerage 2) Hydraulic analysis	Visited Pump Stations
BSS-06.1	New underground electric cables to serve sewerage facilities	Awaiting USAID waiver on public sector construction.	Improved Reliability	City-Wide	None	None
BSS-06.2	ditto	ditto	ditto	ditto	ditto	ditto
BSS-06.3	ditto	ditto	ditto	ditto	ditto	ditto
BSS-06.4	ditto	ditto	ditto	ditto	ditto	ditto
BSS-06.5	ditto	ditto	ditto	ditto	ditto	ditto
BSS-06.6	ditto	ditto	ditto	ditto	ditto	ditto
BSS-07.1	Civil works improvements to lift stations	Awaiting preparation of Bid Documents	Improved operation	City-Wide	1) Development of continuing maintenance program and allocations of suitable budget.	None

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<u>SUBPROJECT #</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
BSS-08	Improve flow measurement and sewage treatment plant	Awaiting USAID approval of justification	Improved operation	Downstream of plant discharge (rural)	None	None
BSS-09.1	Improvements to sewage plant chlorination facilities	Awaiting preparation of bid documents	1)Improved disinfection 2)Control of chemicals	ditto	1)Must improve overall plant operation to make their effective 2)Training of staff	None
BSS-09.2	Improvements to chlorine storage at sewage treatment plant	ditto	Improved plant safety	local	Training to staff	None
BSS-10	Maintenance equipment procurement (trucks and crane)	Completed	Increased capacity to maintain work	City-Wide	Proper maintenance use, and budget	Saw equipment at gravey site
BSS-11	Procurement of consulting engineer services for S-04.2, S-05, S-09.	60% Completed	1)Experience in engagement of consultancy 2)Technology transfer	City-Wide	Involvement of appropriate municipal staff	Reviewed documents Prepared by consultants -Excellent-
BSS-12	Procurement of gen-sets for 4-lift stations	Completed	Improved reliability	Local	1)Proper installation 2)Proper maintenance and allocation of budget.	Saw units stored at WTP
BSS-12.1	Construction of gen-sets foundation pads	20% Completed	ditto	ditto	Installation of gen-sets.	Saw two pads -"Construction sloppy"
BSS-14	Procurement of sewer set cleaner	Completed	Improved capability to clean sewer	City-Wide	1)Training in use of unit by manufacturers rep. 2)Development and implementation of sewer cleaning program	Saw Equipment -"unused"-

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<u>SUBPROJECT #</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
MN-W-01	Expansion and upgrading of water network (6km of 4,6,8" pipe)	Complete	Greater water availability and increased pressure fire protection	N.A.	Household connections and installed	
MN-W-02	Replace pumps in 2 water treatment plants	Complete				
MN-W-03	Renovation of filters in 2 water treatment plants	Complete				
MN-W-04	Equipment: Pumps for Nile & Ibrahimia intakes	Complete	See W-06	See W-06	See W-06	See W-06
MN-W-05	Engineering study and design of distribution		Study	South zone-old, with severe problems of water pressure and availability	Budget will be available and designs implemented	
MN-W-06	Restoration of Nile intake		80% increase in available water to plant; increase in quantity and year round dependability of water supply	City-Wide		
MN-W-07	Equipment installation to improve water treatment plant processes			City-Wide	Substantial operator training will be carried out and result in correct and continued use.	

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<u>SUBPROJECT #</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
MN-W-08	Expansion and upgrading of water network in unserved and underserved areas		Greater water availability and increased pressure, fire protection		Household connections will be installed	
MN-W-09	Upgrade electrical service to 2 water treatment plants			City-Wide		
MN-S-01	Expansion of collection system in unsewered areas (5 km of 7" and 9" pipe)					
MN-S-02	Installation of electric cable to sewage treatment plant	Complete		City-Wide	City Council will complete connection from transformer to panel	Not yet to panel
MN-S-03	Repair treatment plant channels and tanks					
MN-S-04	Equipment; Vacuum pump trucks			City-wide		
MN-S-04	Purchase, install electric panel at treatment plant					
MN-S-05	Interim repair and renovation of treatment plant				Dependents upon improved management and operational treatment plant and adequate staffing	
MN-S-06	Study and design: collection network extension	D				
MN-S-07	Engineering study/design Upgrade pump station and force main	Deferred				

<u>SUBPROJECT</u>	<u>BRIEF DESCRIPTION</u>	<u>STATUS</u>	<u>IMPACT</u>	<u>BENEFICIARY POPULATION</u>	<u>ASSUMPTIONS TO ACHIEVE IMPACT</u>	<u>FIELD OBSERVATIONS</u>
MN-S-08	Engineering study/design Lift station and collection					
MN-S-09	Engineering study/design collection network extension					
MN-S-10	Replace electrical panel and cables: 4 pump stations					
MN-S-11						
MN-S-12	Interim repair and renovation of plant					
MN-S-13						

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