

UNITED STATES AGENCY
for
INTERNATIONAL DEVELOPMENT

BASIC INFRASTRUCTURE
FOR
PROVINCIAL CITIES
FINAL REPORT

PARSONS BRINCKERHOFF BARBOUR & FAY

FEBRUARY 1981

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Planners-Architects-Engineers-Managers



بنا صبور

مخططون - معماريون - مهندسون - خبراء إدارة

Cairo, March 9, 1981

Attention Mr. Ault Nathanielsz
United States Agency for
International Development
Cairo Centre
106 Kasr El Eini St.
CAIRO.

Basic Infrastructure For Provincial Cities
A.I.D. Project No. 263-00,2 & 0005
Contract No. 263-80-K-027

Dear Sirs,

We enclose 20 copies of the final report of this project for your approval.

As the comments on the draft report from the Governorate of Menia have not yet been received, it has not been possible to include the reactions to the report from the various Municipal Authorities. These comments will now be submitted under separate cover by the end of March 1981. We will also submit at that time copies of the information obtained in the course of the study from the Municipal and Central Government Authorities.

As you are aware, this report is concerned with the requirements for selected elements of the infrastructure in the provincial cities of Beni Suef, Fayoum and Menia to the year 1990. It is also concerned with the manner in which facilities are planned and executed, with special reference to the administrative and financial aspects of these processes.

The body of the report provides a synoptic statement of the findings and conclusions; the Appendices to the report contain most of the more concrete data as well as setting forth in much greater details the basis of calculations for the infrastructure facilities deemed necessary to bring the water, waste water, and streets up to an acceptable level for the population estimated to be resident in the three cities in 1990.

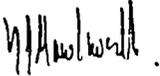
It is emphasized that the cost estimates offered are strictly "order of magnitude" estimates. The character of the current study did not make it feasible to provide a clearer definition of needs. Even if it should have been contemplated, the paucity of information at several critical points would have made it virtually impossible (within the budgetary and time limitations) for this undertaking to have been more precise. Doubtless if grants are made for the benefit of these cities, the preliminary planning and decision-making involved, project selection and definition will produce much more definitive information than was available during the course of this study.

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We wish to take this opportunity to express our appreciation to all those who have participated in this undertaking, especially officials of the Governorates and the Municipalities who have been willing to work so constructively with our staff. Doubtless the problems of language has resulted in some lack of understanding by the members of our staff that do not comprehend Arabic. Parts of meaning, and some critical facts, are often lost in the process of translation of oral communication. For such errors as we have made in recording the facts, we ask the understanding of all involved.

We wish especially to express our appreciation to Mr. Helmy Abdel Ghany Saad Director of the Regional Planning Office concerned with these three cities. He was most helpful in providing assistance in many ways--and without him our work would have been much more difficult.

Very truly yours,



Keith Hawksworth
President
P.B. Sabbour

Encls.

KH/nz

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EXECUTIVE SUMMARY FOR THE
CITY OF BENI-SUEF

EXECUTIVE SUMMARY FOR THE
CITY OF BENI-SUEF

This survey has sought to identify the major infrastructure needs of the City of Beni-Suef required to meet the population estimated for 1990 within the limits of the City on the West Bank of the Nile River. It has not extended to the requirements that will be of concern on the East Bank of the Nile following completion of the new bridge.

Generally the report has concluded that with the completion of the water filtration plant Beni-Suef city should be adequately provided with filtered water capacity through the 1980s although some expansion may be required toward the end of the decade. This is based on the assumption that certain shortfalls in the plant now being completed are overcome or that it can perform at its full 200 LPS (liters per second) rated capacity. On the other hand, several other aspects of the water system require substantial capital outlays, which may be summarized as follows:

	<u>L.E.</u>
Improvements in filtered water storage	974,000
Extension of the primary distribution network and supporting trunk and reinforcing water mains	1,914,000
Improvements and extension of the water metering system	616,000
Other water system improvements, including pumping	811,000
Total	<u>4,315,000</u>

Immediately associated with the potable water supply is a number of problems relating to waste water treatment, extension of the primary sewer network, provision of additional drying beds and booster pumps.

The aggregate costs associated with these order of magnitude estimates would be:

Sewage treatment plant expansion	1,247,000
Improvements in primary sewer network	2,563,000
Other waste water improvements	1,200,000
	<u>5,010,000</u>

The third component of infrastructure costs would be paving of streets not now paved and providing for an increase of 25 percent in the number of kilometers of streets to accommodate projected development to 1990

3,040,000

This brings the projected total for the three physical development items to

12,365,000

(A somewhat more detailed listing of these requirements is attached).

L.E.

In addition to the direct costs relating to physical improvements, the report recommends that a sum of about 8 percent of the capital costs (L.E. 989,000) be available for system analysis, for the preparation of construction development plans and supervision of construction of the various elements of the proposed program.

989,000

Beyond these, the report also recommends that the following amounts be set aside for Beni-Suef for these purposes:

1. Provision of equipment and operating improvements in the water and waste water operations 600,000
2. Improving management systems associated with water and waste water systems 600,000
3. In service training of personnel associated with water and waste water systems 750,000

Total for engineering, equipment and operating elements, management systems and personnel training

2,939,000

In the aggregate, therefore, the report states that the sum of approximately about L.E. 15,304,000 would be required to enable the city of Beni Suef to bring its physical plant and its operation, management, and personnel training associated with these programs to a level sufficient to meet the needs of a projected 1990 population of about 179,000.

It is the finding that within the physical and monetary resources that Beni Suef appears to be carrying out an excellent program of operations in providing potable water and it is believed that with proper funds and technical assistance in a number of areas even better results are obtainable in a number of aspects of the system.

Development of a Sound Capital Program

In order to help assure that funds made available will produce the greatest degree of improvements for the people of the city it is suggested that upon award of funds by A.I.D. in whatever amount it finds appropriate that the elected council be encouraged to identify objectives with the highest priority in these areas; that they may be charged with responsibility of development of long-term operating programs for the functions, including the manner. The functions will be carried out over a period of years under a systems analysis approach. Consultants may be engaged to assist in the final definition of projects needed and to prepare plans, specifications, and cost estimates as well as to supervise construction. The mayor would be responsible for award of contracts and the elected council for oversight and follow-up.

A Self-Sufficient Water and Waste Water Program

In the long run the residents of Beni Suef will be obliged to assume responsibility for financing and operation of their own water and waste water systems if decentralization is to function effectively. However, in the interim, it will be doubtless necessary to continue the practice of providing for portions of the costs of furnishing these services from the Central Government Treasury.

To provide for a transition to full self-sufficiency, it is recommended that a separate Utilities Fund be established and managed by a water and waste water department, subject to the supervision of the mayor and to appropriation by the elected council. Such a fund could be within the Special Account for services and development.

The objective would be to pay all capital and operating costs for water and waste water from this fund, including depreciation on existing facilities and interest on the value of the total plants and facilities involved. It is suggested for purposes of examination that a minimum amount of water and associated waste water e.g., 50 liters per capita per day activities be billed at quite low rates to the user, with the remainder of such costs billed to the central Government. All excess usage would be billed to the customer at full costs of providing of services.

Some such system is essential to enabling Beni Suef to become basically independent in the operation of its water and waste water systems, subject only to such supervisory or oversight responsibilities as prove necessary for the Governor to exercise.

The principal needs of physical facilities as identified in this report are as follows:-

BENI SUEF
RECOMMENDED CAPITAL EXPENDITURES

BENI SUEF

Recommended Capital Expenditures L.E. (OOO) P.B.S Report Table

A. WATER

1. Filtration

Complete the water treatment plant under construction, including installation of supplemental facilities to make operational to designed capacity and installation of standby generating equipment 211 B-7

Prepare for expansion of plant in late 1980s 170 B-2

2. Filtered Water Storage

Bring total storage capacity to 6 hours of filtration capacity, involving installation of 2,636m³ elevated storage and 518m³ underground storage. 974 B-3

3. Primary Water Distribution Network

Expand by about 80 percent to accomodate present and prospective population to 1990 1,238 B-4

4. Strengthening Trunk and Reinforcing Water Mains

Help to overcome distribution problems in areas currently served and to provide for additional population to 1990 by installation of additional trunk mains and reinforcing mains. 506 B-5

5. Improve Water Metering Services

Provide for metering of each building, and preferably each apartment, using water (to 1990) 616 B-6

6. Other Water Improvements

Provide for improvements in the general pumping capacity to help overcome low pressure problems in distribution system. 100 B-7

Provide a lump sum to facilitate rehabilitation of water network 500 B-7

Total Water Systems 4,315

B. WASTE WATER

1. Sewage Treatment

Calculated requirement for additional sewage treatment facilities for 1990 indicated at 63 LPS. Not critical at present. 1,247 B-8

L.E. (000) Table

2.	<u>Primary Sewer Network</u>		
	Vast expansion required to meet needs of present and prospective population and to make effective use of water treatment and sewage treatment facilities to be available under existing programs	2,563	B-9
3.	<u>Other Waste Water Requirements</u>		
	Provide for additional drying beds and for booster pump stations and force mains	1,200	B-10
	Total Waste Water System	<u>5,010</u>	
C.	<u>STREET PAVING</u>		
1.	Provide for paving of all presently unpaved streets	2,000	B-11
2.	provide for paving of estimated addition of 25 percent to street network by 1990	1,040	
	Total Streets	<u>3,040</u>	
	TOTAL CAPITAL EXPENDITURE FOR BENI SUEF CITY	<u><u>12,365</u></u>	

EXECUTIVE SUMMARY FOR THE
CITY OF FAYOUM

EXECUTIVE SUMMARY FOR THE

CITY OF FAYOUM

The survey has sought to identify the major infrastructure needs of the City of Fayoum required to meet the population estimated to be resident in the City in 1990.

Generally the report concluded that Fayoum will require a substantial increase in the water treatment facilities to meet the requirements of the 1980s and to free the GOPW plant of the requirement to allocate a substantial portion of its capacity to the City. Moreover substantial outlays will be required for other elements of the water supply system, estimated in the order of magnitude of the amounts set forth below:

	<u>L.E.</u>
- Additional filtration facilities	5,109,000
- Expansion of filtered water storage	2,607,000
- Extension of the primary network and provision for supporting and reinforcing mains	1,898,000
- Extension of the water metering system	717,000
- Other elements of water system improvement	700,000
	<hr/>
	11,031,000
	<hr/>

Concerning waste water, the treatment plant now approved for Fayoum should adequately serve community needs through most of the 1980s although there may be a need for some modest increase in capacity toward the end of the decade if all premises are connected to the sewer network. In addition the waste water system will require an expansion for other elements. Projected order of magnitude requirements for waste water may be summarized as follows :

- Expansion of the sewage treatment plant in late 1980s	405,000
- Improvement in the primary sewer network	3,541,000
- Other improvements	2,325,000
	<hr/>
	6,271,000
	<hr/>

L.E.

The third component of infrastructure costs would be the paving of streets not now paved and providing for an increase in total streets by about 25 per cent to service the projected 34 per cent increase in population by 1990.

The amount involved would be about	<u>3,292,000</u>
This brings the projected total needs to	<u>20,594,000</u>

A somewhat more detailed listing of these requirements is attached.

In addition to the direct costs relating to physical improvements, the report recommends that a sum of about 8 percent of the capital costs be available for systems analysis, for plan preparation, and supervision of construction.

The amount involved would be about	1,647,000
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As a part of the overall program for improvement in these operations, especially in relation to water and waste water, the report recommends that the following amounts be set aside for Fayoum for these purposes:

- Provision of equipment and operating improvements in the water and waste water operations	600,000
- Improving management systems associated with water and waste water systems	600,000
- In service training of personnel associated with water and waste water systems	750,000
	<u>1,950,000</u>

Total for engineering, equipment and operating elements, management systems and personnel training	3,597,000
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In the aggregate therefore, the report states that the sum of approximately L.E. 24,191,000 would be required to enable the city to bring its physical plants and related operations in these fields to level sufficient to meet the needs of the projected 1990 population of about 253,000.

It is the finding of that report that within the physical and monetary resources available to Fayoum, the city appears to be carrying on an excellent program of operations in providing potable water for the people of the city. On the other hand, the waste water operations require substantial investment and upgrading of operations to produce an acceptable level. This requires resources that apparently have not been available to the city.

DEVELOPMENT OF A SOUND CAPITAL PROGRAM

In order to help assure that the funds made available will produce the greatest degree of improvements for the people of the City, it is suggested that upon award of funds by A.I.D. in whatever amount it finds appropriate that the Elected Council be encouraged to identify objectives with the highest priority in these areas; that they may be charged with responsibility of development of long-term operating program for the functions, including the manner. The functions will be carried out over a period of years under a systems analysis approach. Consultants may be engaged to assist in the final definition of projects needed and to prepare plans, specifications, and cost estimates as well as to supervise construction. The Mayor would be responsible for award of contracts and the Elected Council for oversight and follow-up.

A SELF-SUFFICIENT WATER AND WASTE WATER PROGRAM

In the long run the residents of Fayoum will be obliged to assume responsibility for financing and operation of their own water and waste water systems if decentralization is to function effectively. However, in the interim it will be doubtless necessary to continue the practice of providing for portions of the costs of furnishing these services from the Central Government treasury.

To provide for a transition to full self-sufficiency, it is recommended that a separate Utilities Fund be established and managed by a water and waste water department, subject to the supervision of the Mayor and to appropriations by the Elected Council. Such a fund could be within the Special Account for services and development.

The objective would be to pay all capital and operating costs for water and waste water from this fund, including depreciation on existing facilities and interest on the depreciated value of the total plants and facilities involved. It is suggested for purposes of examination that a minimum amount of water and associated waste water/e.g. 50 Liters per capita per day activities be billed at quite low rates to the user, with the remainder of such costs billed to the Central Government. All excess usage would be billed to the customer at full costs of provision of services.

Some such system is essential to enable Fayoum to become basically independent in the operation of its water and waste water systems, subject only to such supervisory or oversight responsibilities as prove necessary for the Governor to exercise.

RECOMMENDED CAPITAL EXPENDITURES
CITY OF FAYOUM

City of Fayoum

Recommended Capital Expenditure

	<u>L.E. (000)</u>	<u>PBS Report Table</u>
A. <u>WATER</u>		
1. <u>Filtration</u>		
Provide new 393 LPS water treatment plant	5,109	B-2
Upgrade Kohafa Plant	100	B-7
2. <u>Filtered Water Storage</u>		
Provide for huge increase in filtered water storage by installing 3,682 M ³ in elevated storage and 6,569 M ³ in underground storage. Essential to make system function effectively.	2,607	B-3
3. <u>Primary Water Network</u>		
Expand existing water primary network to serve all developed areas within city and provide for increase in projected population to 1990	1,518	B-4
4. <u>Trunk and Reinforcing Mains</u>		
Expand trunk system to facilitate delivery of water to network in all sections of city install reinforcing mains as detailed survey yet to be made will indicate.	380	B-5
5. <u>Water Metering</u>		
Expand metering service to all premises to be served by system	717	B-6
6. <u>Other Improvements</u>		
Provide for additional pumping capacity as required	100	B-7
Provide for network rehabilitation as required	500	B-7
Total for Water Systems	11,031	
B. <u>WASTE WATER</u>		
1. <u>Treatment Plant</u>		
Provision for modest expansion, late in decade for expansion of sewage treatment plant	405	B-8

	<u>L.E. (000)</u>	<u>PBS Report Table</u>
2. <u>Primary Network Extension</u>		
Extend primary sewage network to provide for all premises in city through 1990	3,541	B-9
3. <u>Other Improvements</u>		
Upgrade Lotfalla booster station	75	B-10
Refurbish old sewage treatment plant	250	B-10
Provide for new waste water pumping station	2,000	B-10
Total Waste Water Systems	<u>6,271</u>	
C. <u>STREETS</u>		
1. Pave existing unpaved streets	2,200	B-11
2. Pave streets in anticipation of population growth to 1990	<u>1,092</u>	B-11
Total for streets	<u>3,292</u>	
TOTAL CAPITAL EXPENDITURS FOR FAYOUM CITY	<u><u>20,594</u></u>	B-1

EXECUTIVE SUMMARY FOR THE
CITY OF MENIA

EXECUTIVE SUMMARY FOR THE

CITY OF MINIA

This survey has sought to identify the major infrastructure needs of the City of Minia required to meet the population estimated for 1990 within the limits of the City on the west bank of the Nile River. It has not extended to the requirements that will be of concern on the east bank of the Nile following completion of the new bridge.

Generally the report has concluded that Minia has substantial requirements for filtered water supply and distribution and in the associated collection and treatment of waste water. Those requirements can be summarized as follows in order of magnitude estimates :

<u>WATER</u>	<u>L.E.</u>
- Expansion of filtration plant	3,198,000
- Improvements in filtered water storage	2,223,000
- Extension of the primary distribution network and supporting trunk and reinforcing water mains	2,608,000
- Improvements and extension of the water metering system	771,000
- Other water system improvements, including pumping	800,000
TOTAL	9,600,000

<u>WASTE WATER</u>	
- Sewage treatment plant expansion	4,871,000
- Improvements in primary sewer network	3,112,000
- Other waste water improvements	1,560,000
TOTAL	9,543,000

STREETS

The third component of infrastructure costs would be paving of streets not now paved and providing for an increase of 25 percent in the number of kilometers of streets to accommodate projected development to 1990 :	2,536,000
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TOTAL FOR THE THREE PHYSICAL DEVELOPMENT ITEMS 21,679,000

A somewhat more detailed listing of these requirements is attached.

L.E.

In addition to the direct costs relating to physical improvements, the report recommends that a sum of about 8 percent of the capital costs i.e. L.E. 1,734,000 be available for system analysis and engineering for the preparation of construction development plans and supervision of construction of the various elements of the proposed program.

1,734,000

Beyond these, the report also recommends that the following amounts be set aside for Minia for the shown purposes :

- | | |
|--|---------|
| 1. Provision of equipment and operating improvements in the water and waste water operations | 600,000 |
| 2. Improving management systems associated with water and waste water systems | 600,000 |
| 3. In service training of personnel associated with water and waste water systems | 750,000 |

TOTAL ENGINEERING, EQUIPMENT AND OPERATING ELEMENTS, MANAGEMENT SYSTEM AND PERSONNEL TRAINING 3,684,000

In the aggregate, therefore, the report states that the sum of approximately about L.E. 25,363,000 would be required to enable the City of Minia to bring its physical plants, its operations, management and personnel training associated with these programs to a level sufficient to meet the needs of a projected 1990 population of about 220,000.

It is the finding that within the physical and monetary resources available, Minia appears to be carrying out a good program of operations in providing potable water and waste water facilities for the people of the City. On the other hand, it is believed that with proper funds technical and assistance in a number of areas even better results are obtainable in a number of aspects of the system.

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DEVELOPMENT OF A SOUND CAPITAL PROGRAM

In order to help assure that the funds made available will produce the greatest degree of improvements for the people of the City, it is suggested that upon award of funds by A.I.D. in whatever amount it finds appropriate, that the Elected Council be encouraged to identify objectives with the highest priority in these areas; that it may be charged with responsibility of development of long-term operating programs for the functions, including the manner. The functions will be carried out over a period of years under a systems analysis approach. Consultants may be engaged to assist in the final definition of projects needed and to prepare plans, specifications, and cost estimates as well as to supervise construction. The mayor would be responsible for award of contracts and the elected council for oversight and follow-up.

A SELF-SUFFICIENT WATER AND WASTE WATER PROGRAM

In the long run the residents of Minia will be obliged to assume responsibility for financing and operation of their own water and waste water systems if decentralization is to function effectively. However, in the interim, it will be doubtless necessary to continue the practice of providing for portions of the costs of furnishing these services from the Central Government treasury.

To provide for a transition to full self-sufficiency, it is recommended that a separate Utilities Fund be established and managed by a water and waste water department, subject to the supervision of the Mayor and to appropriations by the Elected Council. Such a fund could be within the Special Account for services and development.

The objective would be to pay all capital and operating costs for water and waste water from this fund, including depreciation on existing facilities and interest on the depreciated value of the total plants and facilities involved. It is suggested for purpose of examination that a minimum amount of water and associated waste water/e.g. 50 Litres per capita per day activities be billed at quite low rates to the user, with the remainder of such costs billed to the Central Government. All excess usage would be billed to the customer at full costs of providing of services.

Some such system is essential to enable Minia to become basically independent in the operation of its water and waste water systems, subject only to such supervisory or oversight responsibilities as prove necessary for the Governor to exercise.

RECOMMENDED CAPITAL EXPENDITURES
MENIA

MINIA

Recommended Capital Expenditures

	<u>L.E. (000)</u>	<u>PBS REPORT Table</u>
A. <u>WATER</u>		
1. <u>Treatment Facilities</u>		
Construct new water treatment plant with 246 LPS capacity and associated facilities.	3,198	B-2
2. <u>Filtered Water Storage</u>		
Vastly expand filtered water storage facilities by installation of 2,853 M ³ elevated storage and 6,412 M ³ underground storage.	2,223	B-3
3. <u>Primary Distribution Network</u>		
Expand primary network to provide for presently unserved premises and for additional premises through 1990	1,858	B-4
4. <u>Trunk and Reinforcing Mains</u>		
Significantly improve trunk and reinforcing mains to assure delivery of water to primary network	750	B-5
5. <u>Water Metering</u>		
Provide for expansion of water metering to all premises not now serviced and additional projected premises to 1990, preferably on a separate meter for each dwelling unit.	771	B-6
6. <u>Other Water Supply System Items</u>		
Rehabilitate 1967 treatment plant to secure full 200 LPS designed capacity	200	B-7
Provide additional pumping capacity as required	100	B-7
Provide for rehabilitation of existing primary network	500	B-7
Total Water System.....	9,600	B-1
B. <u>WASTE WATER</u>		
1. <u>Treatment</u>		
Install additional 246 LPS waste water treatment plant and associated facilities	4,871	B-8
Rehabilitate existing waste water plant.	350	B-10
2. <u>Waste Water Network</u>		
Expand to meet requirements of present and prospective population	3,112	B-9
3. <u>Other Waste Water Requirements</u>		
Increase booster pumping and force main capacity.	1,000	B-10
Rebuild access road to existing treatment plant	210	B-10
Total for Waste Water.....	9,543	B-1

	L.E. (000)	PBS REPORT Table
C. <u>STREETS</u>		
1. Pave existing unpaved streets	1,600	B-11
2. Pave additional streets needed for 1990 population	936	B-11
Total for Streets.....	2,536	B-1
TOTAL CAPITAL EXPENDITURES FOR MENIA CITY	21,679	

I. INFRASTRUCTURE NEEDS TO 1990

I. INFRASTRUCTURE NEEDS TO 1990

This part of this report undertakes to provide a general overview of selected aspects of infrastructure needs in the provincial cities of Beni-Suef, Fayoum, and Menia to accommodate the population projected to be resident in those cities in 1990. Specific attention is paid to the water and sewerage functions within these cities. Attention is also focused upon street paving programs as a means not only of improving the amenities of life within the cities for present population but also of providing that essential element of infrastructure in areas to be newly developed for urban living during the 1980s. These needs are summarized in Table 1 (which is repeated in Appendix B as Table B-1)

The emphasis upon water and sewer facility needs echoes the repeated statement of preferences by the municipal and governorate officials interviewed in the course of the field work. The emphasis upon street paving was not so great, however, there is a recognition of the needs for improvements in this area as soon as they can be financed.

A. POTABLE WATER SUPPLY

Each of the three provincial cities has a filtered water system. In each case the system provides service to a majority of the developed area and to a majority of the population within the town. In Beni Suef and Menia the systems are operated by the towns; in Fayoum the town operates one filtration plant which provides less than half the water and GOPW operates the other plant which supplies the remainder of the water for the town and also supplies water to much of the remainder of the governorate.

Each of the cities has reported that the present filtration systems are adequate in terms of their ability to :

1. Serve the entire developed area of the town.
2. Provide a level of service to customers that are ordinarily expects from a well-functioning urban water supply system.

The officials ascribe the insufficiencies to one, or a combination, of the following factors :

- a. Insufficiency of capacity of the existing filtration systems.
- b. Antiquated elements of the filtration plants and/or inadequacy of past maintenance.
- c. Insufficient capacity of the water mains.
- d. Lack of sufficient pumping capacity.

Summary of Projected Costs for Selected Infrastructure Requirements
to 1990
Provincial Cities of Beni Suef, Fayoum, and Menia
(monetary amounts in thousands of Egyptian pounds)

Item	Projected Financial Requirements			
	Beni-Suef	Fayoum	Menia	Total
	(1)	(2)	(3)	(4)
I. POTABLE WATER SUPPLY				
A. Filtration plants	170*	5,109*	3,198*	8,477*
B. Filtered water storage	974	2,607	2,223	5,804
C. Primary distribution network	1,238	1,518	1,848	4,614
D. Trunk distribution and reinforcing mains	506	380	750	1,636
E. Water metering system and program	616	717	771	2,104
F. Other water system items	811	700	800	2,311
TOTAL FOR POTABLE WATER	<u>4,315</u>	<u>11,031</u>	<u>9,600</u>	<u>24,946</u>
II. WASTE WATER				
A. Sewage treatment plants	1,247	405	4,871	6,523
B. Primary sewer network	2,563	3,541	3,112	9,216
C. Other sewerage and sewage treatment items	1,200	2,325	1,560	5,085
TOTAL FOR SEWERAGE AND SEWAGE TREATMENT	<u>5,010</u>	<u>6,271</u>	<u>9,543</u>	<u>20,824</u>
III. STREET				
A. General paving	3,040	3,292	2,536	8,868
TOTALS, excluding provision for engineering; systems design; training; installation of new planning, financing, budgeting and related systems.	12,365	20,594	21,679	54,638

*See Table Appendix Table B-2 for comment concerning impact of use of somewhat higher standards of water supply.

- e. Failure to extend the grid for water distribution to the full areas of urban development within the town.

To these factors one may add :

- f. Inadequate filtered water storage facilities -- both above ground and at ground level.
- g. Weakness in the distribution system especially the condition of many of the water pipes and their history of frequent leaks and breaks.
- h. Absence of programs designed to discourage the waste of filtered water.

Field observations confirm the general correctness of local assessments of the problems in providing a higher level of service through the existing potable water systems. It might be appropriate in this connection to add the following observations :

1. Absence of Basic Records

There is a general absence of basic records, deemed appropriate in most developed nations, with respect to the control of the quality of potable water and the levels of service being provided. Thus no automatic recording systems were observed that were producing reliable management records on any aspect of operations of the plants. As a result the managers of the systems are obliged to rely heavily upon day to day observation and recollections, rather than upon a comprehensive system of management information ordinarily required in such operations.

2. Quality Control

Each of the systems has facilities for chlorination; however, relatively little in the way of continuous systematic analysis of either the raw water or the filtered water was observed. In two of the cities responses to questions concerning the levels of residual chlorination both at the plant and at the point of delivery tended to produce a recitation of standards set by the General Organization for Potable Water (GOPW) rather than evidence of actual frequent testing. Relatively little testing is apparently done and few procedures are in force concerning the control of minerals or bacteria in the potable water supply.

3. Filtered Water Storage

The systems of delivery are reported to have a wide range between peak and low demands for water. Although filtered water storage (especially elevated storage) has improved markedly over the years, it seems that no comprehensive work has been done on the interaction between filtration capacity, water demand, filtered water storage, and pumping capacity exists. As it is reflected in Appendix Table B-3, large investments are indicated in this area.

4. Water Pipe Condition

Observations concerning the condition of water pipes was limited to examination of some of the pipes that has been removed from the ground in the repairs of leaks and breaks. From this examination it was concluded that many of the breaks have been due to inadequate installation procedures, especially in terms of failure to provide proper bedding for the pipes at the time of installation. Electrolysis and quality of the pipes themselves have also been major contributors to the frequency of leaks and breaks, which in some cities are reported at a level of as many as 20 or more per day.

5. Grid Analysis

No effective continuing analysis of the actual operation of the grids with a view to determining more precisely the variations in pressure at different places, at different times and under different conditions was observed. Moreover the causes of low pressure in selected areas, and the high leak and break history are not adequately documented. Thus there has been little attention paid to the internal encrustations of pipes in terms of impact of distribution problems.

The grid in some cases (both actual and planned) provides for the use of pipe of less than 6 inches in diameter, which constitutes a minimal acceptable size. The absence of effective grid analysis has resulted in an insufficient attention to the need for reinforcing mains to assist in maintenance of adequate pressure and volume of water delivered.

6. Loss of Water through Waste

Water use studies have generally indicated that unless there is an effective penalty for misuse of water -- especially through leaky utilization facilities within homes and other structures -- that substantial amounts of water is lost each day. Moreover, where public taps are free without automatic valves there is a tendency to allow them to remain open at times when water is not actually being taken for domestic use. There are no data to enable one to reach a meaningful conclusion as to the amount of water now wasted.*

* In this connection it is of interest that the Provincial Water Supplies Project, Final Report (vol 3, p.127) estimate that two thirds of domestic water meters in service should be replaced.

Indicated Requirements for Improvements in the Potable Water System

Appendix B contains summary information concerning the projected needs of the potable water systems in the three cities. As summarized in Appendix Table B-1, the indicated requirements for each of the cities are :

	millions of L.E.
Beni Suef	4.3
Fayoum	11.0
Menia	9.6
	<hr/>
Total	24.9

For Fayoum and Menia, the largest components of requirements for improvement in potable water supply lie in the filtration requirements themselves, although in Fayoum this is largely to provide facilities needed to enable the City to relinquish its current heavy reliance upon a GOPW plant whose full capacity is greatly needed to serve other areas in Fayoum Governorate and a small portion of the Beni Suef Governorate. In Menia city there is a definite shortage that warrants very early attention.

Surprisingly the second most important component, looking at the three cities in concert, is for increased filtered water storage. Early attention paid to this element of the potable water supply (coupled with installation of suitable pumping support facilities -- including the use of booster pumps somewhat remote from the filtration plants) can do much to overcome current shortages during the peak demand hours of each day.

Such data as is available concerning the primary distribution network makes it clear that the networks do not serve all of the urban population within any of these three cities. Again, it appears that this is a major area of need both to serve currently developed areas of the cities and to provide for expansion of housing necessary to serve present and indicated increased population.

Attention is called to the importance of full and accurate metering of all water users and to the benefits that may be gained in discouraging water waste through a comprehensive meter maintenance and replacement program. This is most effective when meters can be installed to measure water consumption for each household, rather than only for the entire structure in the case of multi-family housing.

It was noted that the current systems apparently have not given sufficient attention to the trunk water distribution system, especially of well planned and installed reinforcing mains. Finally, there are a number of lesser items needed to bring the three systems up to fully adequate levels of supply and service.

B. WASTE WATER

Each of the three cities have waste water collection and treatment facilities.

The treatment plant in Fayoum is in such a deteriorated condition that a fully new plant is being currently installed. The one in Menia, due to lack of sufficient electric power facilities and low levels of operating efficiency, fails to do an adequate job of treatment of sewage before releasing it from the plant.

The indicated needs for waste water in the three cities is summarized in Appendix Table B-1 as follows :

	millions of L.E.
Beni Suef	5.0
Fayoum	6.3
Menia	9.5
	<hr/>
	20.8

Insofar as sewage treatment plants are concerned, when the plant recently bid in Fayoum is completed, and when certain rehabilitation is carried out in Fayoum and Menia, the only major requirement for an additional sewage treatment plant appears to be in Menia (L.E. 4.5 million).

The greatest need is for extension of the primary sewer network or collecting of the sewage, in order to provide universally available service to current and projected 1990 population. Unfortunately difficulties were encountered in securing data that were considered reliable about the number of unsewered premises at this time. As a result, the estimate of L.E.9.2 million for extension of the primary networks in the cities may prove significantly faulty -- on either the low or high side (see comment in notes to Appendix Table B-9). Due to the deterioration of sewage treatment plants in both Fayoum and Menia, the amounts shown in Appendix Table B-9 constitute not so much of an accurate projection for these purposes as an indication of the urgency of the need for early rehabilitation of these plants and installation of associated pumping and force main facilities.

C. STREET PAVING

Our projection of the requirements for paving all of the presently unpaved streets and those anticipated to be needed by 1990 is as follows for the three cities :

	millions of L.E.
Beni Suef	3.1
Fayoum	3.3
Menia	2.5
	<hr/>
Total	8.9

These estimates are based upon the data provided in the three cities, coupled with indicated additional requirements of 25 percent to cover the projected population increase of about 34 percent during the 1980s. (See Appendix Table B-11).

D. ELECTRICITY

Early in the contacts with the provincial cities, the team was advised by each of the provincial cities that they did not want us to explore with them the matter of additional electrical services.

Beni Suef : In the case of Beni Suef, it was stated that the city had been included in electrical projects to be executed from an American loan; that the Ministry of Electricity in association with an American consulting firm had made extensive studies of the electrical needs of the city - that a contract had been awarded and signed for supply of the necessary electrical equipment for the project; and that the only remaining requirement was to find land to be used for storage yards for such equipment.

Menia : In Menia it was stated that in 1973 the rural electrification authority in association with the electricity department of the Menia Governorate had made studies and designs for total reinforcement of the electrical systems of the city based upon changing the network voltage from 3.3/220 Kv to 11/380 Kv. The study showed :

- a. The existing situation and facilities in the city including switching equipment and electrical feeding systems.
- b. Future expansions in electrical loads for the city area.
- c. Future electrical loads from water, sewerage, and other public facilities.
- d. The growth of population well into the 1980s.
- e. Improvements in the existing electrical network needed and the plotting of the locations of transformers, switchgear, and similar requirements.

In the implementation of the plan, the following steps have been taken :

1. In 1978 a work order was issued to the General Company for Projects for execution of Phase I of the planned program and this has been completed.
2. In 1979 a work order was issued in the same manner for the execution of Phase II of the program and this has been completed.

3. In 1980 a work order has been issued to the General Company for Projects for the execution of the remainder of the work required to reach the final reinforcement and improvement of the electrical situation within the city. Completion of the work was expected by the end of 1980.*

For future needs, Menia listed a 33/11 Kv substation to secure electricity supply to the city through either the Samalut substation or the Makousa substation and also a connection of such substation to the existing switchboard.

Fayoum : The Mayor of the city said that the matter of electricity was so low in his system of priorities that he did not want to use the time of his staff in making information available on this matter.

Early in this study the staff made an approach to the Regional Electricity Company in Menia which has responsibility, commencing in 1979, for taking over the electrical functions within the three governorates that were formerly lodged with the cities. The officials contacted were courteous but made it clear that they did not wish to participate in certain aspects of the study as then projected -- especially concerning personnel evaluation and management.

In the light of the foregoing reactions, it was not fruitful to attempt to proceed with the collection and analysis of information concerning the residual needs of the three provincial cities in the field of electricity.

E. HOUSING

The requirements for additional housing in Egypt, including the needs in these three provincial cities, have been so well documented in numerous reviews of this problem that we have opted resources available under this study for analysis of other aspects of the infrastructure problem.

* Components of the entire reinforcing and improvement project were summarized as follows :

Item	Quantity	Completed	1980 Project
Transformer (complete)	112	33	79
11 KV cable 3 x 150 mm (kms)	47	18	29
Secondary cable	35	15	20
Street lighting poles	2,550	1,050	1,500
Main feeders	2	2	-
Switchboard	1	1	-
Cable 3 x 240 mm ²	2	2	-

On the other hand, the proposals contained herein for improvement of streets, both by paving of existing unpaved streets and by opening of new streets as well as the improvement and extension of the water and sewage treatment and network systems are all designed to facilitate the development of housing -- especially of housing that will be paid for by private owners.

Although housing officials were interviewed in each of the three cities, it is not deemed appropriate to attempt to cover this subject in this report because most of the comments related to subsidized housing. No attention was given to at least partial solution through private housing efforts.

Finally, it is clear that the level of moneys likely to be made available under this current A.I.D. program cannot make any significant contribution to coping with this problem beyond that of making utilities and streets available to service housing to be constructed under other programs.

On the other hand if water and waste water services along with paved streets are provided under this program for the land where housing will be developed when needed, the expansion of housing can be more easily accomplished by private developers or by the government.

F. STREET CLEANING AND REFUSE DISPOSAL

In Menia and Beni Suef officials were interviewed concerning the problems of street cleaning and refuse disposal. In Fayoum the mayor said his other priorities foreclosed consideration of this topic at this time.

The results of inquiries make it apparent that street cleaning (including garbage and other refuse collection) is a labor intensive activity. The quantities of refuse being delivered to the municipal disposal sites are extremely low, both on a per capita and composite basis. Thus Menia reported delivery by municipal forces of only about 30 tons per day.

Although some interest was expressed in the potential for organization of municipal reclamation activities from refuse, it seems that until and unless the amounts to be processed greatly exceed those reported to us that the problem should continue to be handled through means short of installation of incinerators and other more sophisticated equipment. At the reported production levels the use of a few large compactor trucks to transport the refuse to desert sites would offer a more appropriate response to the problem in its present dimensions than other alternatives -- unless public policy warrants some extension of present dump site. Moreover, even the present sites are probably adequate for continued use through judicious use of land-fill to heights much higher than the general surrounding areas -- the concept of refuse "mountains" is rarely pursued to its logical potential in any nation.

Under any circumstances, present allocations of funds for the street cleaning and refuse disposal problems appear to evoke low priority ratings among the officials interviewed.

ECONOMIC AND SOCIAL IMPLICATIONS
OF RECOMMENDED PROGRAM

ECONOMIC AND SOCIAL IMPLICATIONS
OF RECOMMENDED PROGRAM

It is evident from the foregoing that the primary needs of the three cities lie in the water and waste water field.

Presently large portions of the population in each of the cities are able to secure potable water only from public taps. Moreover during periods of peak demand even some of these are not operable to meet demands due to the low pressure conditions. Generally the areas not served by the water networks appear to be those in which the poorer housing, and therefore presumably the most needy persons are living -- albeit this observation arises from windshield observations, rather than from collection and analysis of economic data.

To an even greater degree it appears that the areas not served by public sewers lie in areas in which the housing is informal or in a state of advanced deterioration. Again, it is assumed that there is a high degree of positive correlation between unavailability of sewers and low income of families living in such areas.

This survey has sought to produce data which provides an "order of magnitude" cost of extending water, waste water and paved streets to every section of the three towns. If it is feasible either under A.I.D. grants or a combination of A.I.D. and other sources to provide for these needs, it is obvious that those likely to benefit to the greatest degree will be the segment of the population represented by the lower and the lowest incomes within the community.

The report emphasizes the desirability of application of a "systems analysis" approach to defining the work program to be undertaken in order that a balanced system be provided. It is idle to provide water services to every house and then to have no adequate way in which to handle waste water. Likewise it is idle to construct water filtration plants unless the required networks components of the system are provided. The aggregate of the capital costs required in the three cities may exceed the funds available for the capital improvements and the recommended associated improvements in operating practices, management systems and personnel training and development. Should this be the case, criteria will have to be developed as to which areas of the cities will be provided services now and which will be obliged to await developments at some future time. Under such circumstances the problems of selection, including the socio-economic questions will have to come to the forefront. However, except for such data that may be developed in Fayoum and Menia in the preparation of the present long-term physical development planning efforts, there seems to be little, if any, data which would enable one to make the kinds of analysis that are frequently possible where census data are available on a tract or even sub-tract basis.

II. GENERAL PROCEDURES FOR PLANNING, BUDGETING
AND FINANCING OF CAPITAL PROJECTS.

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AND FINANCING OF CAPITAL PROJECTS.

The basic outlines of local government structure under which capital projects are planned and executed in provincial cities consist of interactive arrangements between the respective governorates and their capital cities. The principal officials involved at each of these two levels are the chief executive, the executive council, the elected council, the chief planning officer, the chief financial officer (who represents the Ministry of Finance), the local directors of the individual ministries that maintain directorates within the governorate.

By far the most important official in the group is the governor. He holds a most prestigious position -- the rank of minister insofar as national protocol is concerned. Practically his powers seem to be somewhat constrained by the operation of the executive council and the presence of directors who have a significant allegiance to their respective Cairo ministries. His power is also shared by the elected council of the governorate, composed of quite able persons who have a good comprehension of the political and administrative processes.

Local government in Egypt is still characterized by a very high degree of centralization, apparently due to decades (if not centuries) of heavy concentration of authority and responsibility at the national level. Recently, additional authority has been delegated to the governorates and largely lodged with the governor and the elected councils. However, it appears that many of the lines of responsibility, especially of directorate personnel, are still substantially from local officials to their Cairo counterparts. Even in the exercise of his functions the governor must frequently act through the executive council including the heads of directorates from national ministries. Thus, while one finds various financial officers operative at the municipal and governorate level, many of these are carried directly on the payrolls of the central ministry of finance. In like manner, some officials at the municipal level tend to have a dual responsibility. The city executive council includes the principal directorate officers within the municipality. Each administers his own function while the mayor (chief of the executive council) exercising substantially a low-key and low-power level of coordination. In a sense the mayor thus becomes the first among equals within the executive council. He assuredly does not occupy a position under which he has broad power to appoint, direct, discipline, and, if necessary, dismiss members of the executive council. In line with this pattern; it is not surprising that the organization reflects a tendency for administrative operations to be conducted with a certain degree of independence from the mayor.

The planning of Public Works

One would expect to experience a substantial degree of meaningful planning at the local level and to find that this is integrated with national planning objectives.

Given the recent history of Egypt and its degree of adherence to the concept of a planned economy, one would expect to find in the local government these essential elements of comprehensive planning :

1. A long-term comprehensive operating plan and program for performance of each of the principal functions of local government within each local jurisdiction.
2. A long-term physical development plan under which the community would expect to achieve the needed infrastructure to provide services to the citizens.
3. Participation in the national 5-year planning operations in a meaningful manner.
4. Preparation of annual capital budgets which seek and receive capital budget authorizations generally along the integrated relationships of the local development plans and the national five year plans.

These elements of comprehensive planning have not been found currently to exist to any meaningful extent (1), although the need for them is felt by the Governors.

What is generally referred to as planning or the annual plan consists of little more than the annual preparation of a list of desired projects by each local government, their compilation and approximate pricing by the governorate, approval by governorate executive and elected councils and transmission to the Ministry of Planning in Cairo.

(1) The General Organization for Physical Planning/(GOPP) is attempting to overcome this deficiency through the development of comprehensive physical development plans for selected governorate capital cities (including Menia and Beni Suef). However, it has only recently been authorized to proceed with this program and no completed plans are currently available. The governor in Fayoum (not the municipal officials) has also commissioned an independent preparation of a comprehensive physical development plan until the year 2000 for the City of Fayoum. This long range master plan is being prepared by the "Development, Research and Technological Institute" of the University of Cairo. The governor of Beni Suef has expressed interest in preparing such a master plan. Consideration is being given to extension of the process to the entire governorate.

Generally these operations are carried out by governorate and local officials who seem to have inadequate training in planning processes. Although the local governments prepare other such lists at the time of the initial preparation and revision of 5-year plans, there is no evidence that the approved five-year plans are transmitted back to the local levels nor that the annual processes of planning are conducted in the light of these nationally approved five-year plans (2).

Local participation in the five-year plan preparation seems to be a one-way street.

The Annual Planning Process

The annual planning process for capital facilities derives largely from the request for the filing of proposed capital expenditure requirements. The process is one that reaches far into the local level of government; however, as will be shown shortly, the reach is largely one of form rather than of meaningful substance.

Each local unit (municipality, village-council, and markaz) prepare a list of the projects which it believes should be included in the capital budget (BAB-3) for the subsequent year. In many instances this is merely a list of items wanted, without pricing of the items and with little likelihood of their being financed. Generally the process at the lowest level is carried out without the discipline of any financial guidelines; the aggregates of all such lists far exceed the amount that is available under the national budget for these kinds of expenditures.

The locally prepared lists are approved (in original or amended form) by the locally elected councils and forwarded to the governorate where the lists are priced, collated, and arranged in the basic order required under the Ministry of Planning procedures. The governor, the governorate executive council and the governorate elected council consider the proposed lists, and approve items with few amendments, and forward these to the Ministry of Planning.

Concurrently with these operations, the Ministry of Finance will have developed a target amount within which all BAB-3 expenditures (4) in the nation must be carried out for the coming fiscal year. Steps will have been taken by the Council of Ministers to allocate these amounts among the different ministries and consultations will have proceeded between the Cairo and field representatives of each ministry that may have relevant projects in a given governorate.

(2) In the course of this study, none of the local officials questioned on the matter acknowledged possession of a copy of the 1978-1982 five year plan-- in either the Arabic or English language edition.

(3) See Appendix A, Part B for a comprehensive statement on annual Planning activities.

(4) See Appendix A, Part C for discussion of the BAB definitions.

After receipt of the proposed plans from the governorates, decisions are made through joint action of the ministries and the Planning Minister as to the amounts that will be allowed for the so-called "headquarters budget" for BAB-3 at the governorate level. The Ministry of planning advises each governorate of the amount that will represent its approved headquarters budget for the year, broken down into certain functions. Simultaneously final allocations for BAB-3 are made to each of the ministries and for those which have directorates at the governorate level, the process is initiated of providing for sub-allocations of portions of the ministry BAB-3 to each governorate.

Upon receipt of the funds for headquarters functions, the governor, and his executive and elected councils, act to complete the process of allocation of these amounts among the projects needed by the different municipalities and village-councils. This allocation is thereupon returned to the Planning Ministry where it is reported to be approved more or less automatically. Under the new procedures, it is then forwarded to the National Investment Bank for administration. Moneys are deposited on a quarterly basis to the account of the respective governorates and under procedures being put into effect during the current fiscal year these may be used to finance the capital program approved for headquarters functions. Generally there is some freedom for the governorates to reallocate these headquarters funds among various functions in case it is not feasible to carry out the projects as initially expected at the time of the approval of the BAB-3 headquarters budget.

Commentary on Planning

Despite considerable effort, no determination has been made under this study as the extent of relationship that exists between the annual requests made by the governorates and their local governments and the amounts of allocations they receive -- whether in their headquarters budgets, in the directorate allocations or in projects that are executed outside the framework of headquarters and directorates, (i.e., the projects of the non-directorate ministries and the various independent agencies such as that for electricity).

Of course the aggregate of national allocations for BAB-3 activities, whether carried forward at the Cairo ministry level or at the governorate and sub-governorate levels, must fall within the national available amount. Work under this contract has not included a review of the functioning of the appropriate central ministries to ascertain how seriously the various Cairo officials take into account the local requests.

For present purposes it is assumed that the relationships are tenuous, at best. Various materials presented in Appendix A seem to suggest very little relationship between requests and the approved totals.

There is considerable doubt as to the degree to which accurate pricing of projects is accomplished at the time the planning process goes forward; however, for the minor projects, e.g., paving of streets or roads, the prices are reasonably accurate. On the other hand, pricing for the more complex undertakings, e.g., a new water plant, are likely to have substantial error -- because of unavailability of hard data, the impact of inflation, and the very slow process of development of the facilities once approved.

Accounting

Insofar as the operations of the local governments and the governorate are concerned, all accounting (except for companies) is performed on a cash basis system of accounts. No balance sheet accounting (as expected in commercial accounting or in municipal accounting in the U.S.A.) is used in the operating or infrastructure accounting.

A system of fixed asset accounting for the capital assets required was instituted in 1973. The initial entries contained an inventory of those fixed assets known to be owned by the respective local units and were carried at book value. Since that date, expenditures made under the annual capital authorizations are required to be entered and withdrawals noted as incurred. Examination of some of these accounts and discussions with some of the accounting officers suggest that they are of limited value in general administration. Moreover, the maintenance of effective control over these accounts over a period of years will become very difficult.

Appropriations for personal services and other elements of operations and maintenance not expended within current period are lapsed at the close of the period; outstanding accounts payable are recorded as obligations of the succeeding year. Expenditures for the acquisition of fixed capital assets are made against authorizations that continue to be available for commitment and expenditure in periods subsequent to the current fiscal year (subject to concurrence by the National Investment Bank that the local government is making a valid effort to acquire the assets for which authorization has been made).

Treasury Management

The actual management of cash involved in disbursements involves different procedures for the different BABs. Thus in the case of BAB-1, each city and other unit of local government maintains its own bank accounts from which moneys are paid as accounts become due. For BAB-2 the governorates provide what amounts to a clearing account; through this it advances moneys to the cities and other local units and periodically reimburses them in order to maintain cash the accounts. For BAB-3 all cash accounts are maintained at the governorate level and disbursements made therefrom on vouchers from the officials responsible for execution of the projects.

III. PATTERNS FOR EXECUTION OF THE CAPITAL BUDGET

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Once appropriations are available within the approved and amended annual BAB-3 budget, the opportunity for execution is at hand. Responsibility for execution is allocated to either the local governments or to central agencies, based largely upon the size and complexity of the projects.

1. The Large and More Complex Projects

Except in highway, street and road construction, there appears to be insufficient technical expertise and experience available at either the governorate or municipal level to execute larger and more complex projects. Accordingly, it is not surprising that such responsibilities are assigned to central government agencies, e.g. the GOPW in the case of water filtration plants and the GOSSD in the case of sewage treatment plants and construction of force mains for sewage.

Based on field observations the following comments are warranted :

- a. Slowness in Execution of Projects. Generally, the central agencies are extremely slow in completing designs, entering into contracts, and achieving the execution of large projects of significant importance to local citizens and officials. The most significant example has been the Beni Suef water treatment plant commenced in 1973 and not yet completed; however, inasmuch as a foreign loan is involved, the slowness with which the project has been accomplished may have been due to conditions beyond the control of GOPW.
- b. Failure to Maintain Liaison with Local Technical Personnel. A second area of difficulty appears to be the unwillingness of central agencies to take the initiative in maintenance of liaison with local technical personnel. Thus, again in the case of the development of the Beni Suef water treatment plant there has been no official relationship between the GOPW technical personnel in charge of the supervision of construction and the local personnel that will be obliged to operate the plant -- either at the time of design or in the course of construction (1). In the case of the projected installation of a new force main to the Menia sewage disposal plant, operating personnel is not informed concerning the time table for installation although the pipes were delivered to the site several months ago.

(1) At its own initiative, local personnel has apparently closely observed progress in construction of the plant that will be turned over for operation in 1981.

Special Accounts

Under Law 43 of 1979 the governorate and its local units are required to set up certain special accounts, the revenues of which are clearly defined by the law (5). Any foreign grant, donations or endowments made to those accounts have to be approved by the Council of Governors. The broad guidelines and regulations as to the use and administration of the assets of the accounts are provided by the governor. Specific expenditures are authorized by the executive committee of the local unit of government with the approval of its elected council. There is a requirement for an annual detailed financial report accounting for the revenues, expenditures and balances in these accounts. The revenues and expenditures reporting appears to have been carefully maintained.

At present all special accounts are small (e.g., L.E.148,000 for Fayoum governorate). However in the entire budget of the governorate and its local units, the special accounts are the only accounts in respect to which there is a direct relationship between the income of the account and its expenditures. Moreover these are the only accounts in which the local level has effective fiscal responsibility exercised through the local elected council.

Such special accounts can constitute excellent precedents upon which a much higher degree of decentralization in fund management could be based. The experience gained by the local officials in these operations can be very beneficial. In fact, if a number of the industries now being spawned by local governments prove as profitable as expected, such profits can eventually be allocated to these funds --once the debt incurred in their development has been retired.

For the past several years this pattern of financial involvement by local citizens has been encouraged in Fayoum and even made mandatory by the Governor for any project financed with the help of the central government.

(5) See Page " 27 " of Appendix A and also exhibit A-2 to Appendix A

These kinds of circumstances rob the administrative process of much of the implicit opportunity for on-site training of local personnel in various aspects of project development, especially of the elements of design and construction that will be of major importance in operation and maintenance of completed facilities. Seemingly, failure to consult with operating Personnel at the design phase of such projects may be responsible for certain imbalances in elements of the Beni Suef plant with the result that raw water supply, filtered water storage, booster pump arrangements, and extensions of the distribution system have not been coordinated.

2. The smaller and Recurring Projects

For the smaller projects and for recurring projects of some complexity, officials of the governorate and/or the municipal governments appear to have major responsibility for all aspects of capital budget execution. This is especially true in the case of equipment acquisition but extends to the important elements of street paving at the municipal level, to installation of water and sewer mains (excluding sewage force mains), and to the construction of subsidized housing. These projects are usually quite small, rarely exceeding L.E. 25,000 and never exceeding L.E. 100,000.

The engineering and other technical staff complement at the municipal and (except for highways) at the governorate level is distinctly limited in number. Generally the engineers we have encountered at these levels are able persons, however, they are in short supply and are sometimes obliged to cover a variety of areas of work beyond their expertise.

For housing and for street paving, standard plans and specifications are used to accomplish essentially repetitive jobs. The standards for street paving are adequate. The standards for housing appear to be adequate according to community levels of housing within the cities.

The present staff of the cities seems capable of supervision of construction at current levels; however, any major expansion of these programs would doubtless result in an over-load of the ability of the current organization and staff to assure proper installations. Even within present circumstances, a great deal of additional attention is required to the proper bedding of water and sewer mains at the time of installation. Failure to bed properly such network systems has been responsible for much of the adverse leak and break history that characterizes operation of these systems.

Design Capabilities

There is a dearth of qualified, experienced engineers both in the governorates and the municipalities with design experience. There is no cadre of local consultants upon which to rely for design and preparation of specifications nor for supervision of large-scale undertakings. Reference has been made to availability to individual consultants. However, most of them are teachers from Cairo Universities, without a great deal of practical experience. The new University in Menia is expected to include program for specialization in the training of engineers; over a period of time this should help to overcome some of the personnel shortages.

The present engineering personnel of the governorates and municipalities seem fully occupied in the performance of their recurring duties and could not be expected to undertake the added responsibilities for system design, preparation of specifications, and supervision that would be inherent in a program of the magnitude contemplated under the A.I.D. program.

Local Contracting Capabilities

Inquiries concerning local contracting capabilities produced assertions that under the present magnitude of work contractors in Menia and Fayoum have adequate capabilities to carry forward. On the other hand, Beni Suef reported that there were no local contractors and they were relying upon Fayoum or Cairo contractors.

Should paving programs for city streets suddenly expand to much higher levels (for a relatively brief period of time) it is doubtful that work could be completed in a timely and satisfactory manner unless outside contracting facilities could be brought into the cities. This problem would be more acute if all three of the provincial cities were simultaneously to undertake vastly expanded programs of street pavement.

There is the frequent assertion that opportunities outside Egypt have resulted in a draining of many of the more competent technicians and skilled workmen.

Routines in Contracting and Payment

The current routines for award of contracts appear adequate to provide reasonable protection. The routine systems of payment seem to include the kinds of approvals expected in such undertakings. On the other hand, these municipal governments do not have experience with programs which (either because of the complexity of the facilities or because of sheer magnitude) would require a large increase in administrative capacities. The enforcement of standards called for in plans and specifications presents a continuing problem in all construction.

Under these circumstances, wide use of consulting personnel during both the project planning and execution phases will be required in order to assure good plans and specifications as well as reasonable conformance to the specifications and to avoid chicanery. Special oversight procedures will also be required in the handling of large sums of money by these local governments.

Follow-up

During recent years, and especially during the current fiscal year, there has been great emphasis upon follow-up, i.e., seeing to it that capital projects are executed in a timely manner. Such emphasis was encountered at various points -- especially at the levels of the secretary-general and the elected council presidents.

There seems to be a renewed determination to see to it that the funds placed at the disposal of the municipalities and governorates are committed within the year in which they become available. Quarterly reports are being required not only at the level of the National Investment Bank but also by both administrative and elected council officials. A new sense of responsibility in this regard is clear.

IV. DECENTRALIZATION OF RESPONSIBILITIES

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There is considerable interest in decentralization of governmental operations now carried out largely at the governorate and local unit levels. This is seemingly a well-accepted policy of the central government. On the other hand there is as yet only limited evidence that concrete steps have been taken to produce the results sought in such policies. The conclusion is almost inescapable that traditional centralized control continues for many of the functions performed at the governorate and local unit level. The only evidences of genuine decentralization observed in this study were :

1. The allocation of the recently imposed special motor fuel tax has resulted in distribution of lump-sum amounts to the governorates . The distribution itself is still controlled at the central government level, however, once the relatively large sums have been distributed to the governorates, a high degree of local control and discretion in the use of the funds is reported.
2. The governorates enjoy a fairly broad degree of flexibility in the administration, including allocation, of certain lump-sums made available to them under the "headquarters" portion of the annual BAB-3 budget. This extends to portions of the BAB-2 budget; however, in both cases the evidence gathered was partially contradictory as to the degree of freedom that can be exercised at the governorate level. Freedom at the municipal and other local unit levels appears to be somewhat less.
3. During 1980-81 there was a significant shift in responsibility for administration of the government financed housing program. Heretofore responsibility has been vested in the Ministry of Housing. It is reported that the responsibility has now been shifted to the governorates in the expectation that, given their more direct interest in expediting the program, the number of housing starts will increase significantly.
4. In the Menia Governorate a relatively large sum of money (LE. 2.4 million) was made available in the 1980-81 capital budget for potable water supply as a part of the headquarters budget. Heretofore such allocations were available only as a part of the Housing Directorate's budget within the governorate. (Seemingly there was still some restriction upon the use of this sum-- it being dedicated to the expansion of potable water supply outside the capital city. The extent to which it could be used within the capital city or in other urban areas could not be ascertained).
5. Under legislation adopted in 1975 and modified in 1979, the legal framework has been established for the creation of certain special accounts under the control of the governorate and/or the local units. Although the small size of these accounts indicate minimal importance as yet, they afford a legal precedent and legal framework within which further decentralization could be based.

Moreover, they constitute an illustration of balancing of responsibilities and desires in the fiscal field at the local levels. Under terms of the legislation, local officials are responsible for seeing that there is a balance between resources and expenditures.

From current press and other sources it is clear that there is now under consideration additional delegations of authority and responsibility to the governorates and perhaps to the local units. The details of this prospective legislation are not yet publicly available; however, information now available suggests that there will shortly be significant changes in the law. One of the problems in execution will be to conform practice to the objectives sought in the legislation.

TWO AREAS FOR ACCELERATED DECENTRALIZATION

There are two areas in which de facto decentralization could be significantly and rather quickly achieved should national policy accept the kinds of changes outlined below in respect to (1) the general plan for financing of governorate and local unit programs and (2) self-sustaining operations for the water and sewerage functions of urban local governments.

1. Restructuring the Basic System for Local Financing.

Under the present system for financing general services, there is little relationship between the amounts of revenues generated locally and the levels of approved expenditures for an individual governorate or local unit. So-called local revenues are generally deposited to the credit of the central government and decisions concerning the approved appropriations seem to be made independent of the revenues generated within individual local governmental units.

This practice results in the emphasis by most local officials upon the amounts of grants, i.e., approved appropriations, they can secure. It induces elements of lack of responsibility inasmuch as the income sources required to support the service levels sought are not adjusted at the local level in relation to the levels of such services. It may also result in an undue emphasis upon seeking BAB-3 appropriations for new and replacement capital assets, rather than greater degrees of conservation of assets through better maintenance programs.

A viable alternative to the present practice could be provided as follows :

1. The central government would make determinations as to the amounts of moneys that were to be provided to the governorates and the local units, based upon a combination of national availability of funds and upon the general levels of support deemed appropriate for local government. Allocation as general support grants would be preferable to categorial or functional support grants.

2. Governorates and their local units would be provided broad taxing powers under which they could supplement the levels of services supportable by the general grants from the central government. Those governorates able and willing to provide a high level of services would impose and collect revenues at a higher level. Those governorates and local units unwilling or unable to provide higher levels of supplementation through local taxation would be obliged to work out their own priorities in the allocation of the resources available through the combination of general government subsidies and locally generated revenues.

Under such a program a number of major residual problems would have to be addressed, including the adjustment of subsidies in a manner that was equitable while at the same time placing local officials under strong pressures for responsible local self-government. There would be a major problem concerning the degree of budgetary responsibility that would have to be absorbed by the central government, should it continue its current policy of enforced employment of excess personnel holding certificates of completion from certain educational levels.

At the governorate level, there would be the problems of equitable distribution of central government subsidies among the local units and also problems of equalization among different units of local government with differing capacities to pay.

Each of these groups of problems is significant; however, they are inevitable concomitants of responsible local self-government. They have been dealt with by governments of other nations and doubtless could be adequately handled in Egypt.

2. Financing Public Utility Operations.

Appendix C of this report is concerned with an illustration of the basis for the financing of public utility operations, especially for water and waste water functions, designed to make them self-sufficient financially and also to produce the basis for a much improved operation of these functions. The pattern suggested there may be summarized as follows :

- a. The water and waste water functions would be required to become self-sustaining.
- b. A formal rate structure for these services would be established on a basis sufficient to finance operations, maintenance, amortization of capital expenditures.
- c. In order to provide alleviation of the financial burden upon families at least initially, the central government would agree to pay part of the cost for a stipulated number of liters per day of water and associated sewerage services on a per capita basis for each user. The payment would represent the difference between (a) actual production and distribution costs and (b) the minimum costs payable by the users.

Services used in excess of this minimum would be billed to and paid for by the user. (For example, the central government might accept responsibility for paying the major part of the liev for the first 50 liters per day of water. This would be in lieu of all present operating and capital outlays by the central government in these cities for water and sewerage services).

The sum of the amounts billed to the central government and billed to the customers would be sufficient (after allowances for collection losses) to meet the full cost of providing the services under this plan.*

Such a pattern of operation could result in a substantial net position cash flow inasmuch as there would be current billings for not only for operation and maintenance but also for amortization (through depreciation charges) of the entire plant and other facilities in operation,** as well as interest on the depreciated capital investment (whether or not interest was actually being paid as an element of cost.)

The accumulated reserve and capital funds thus generated would constitute a ready source for extensions to the networks rehabilitation of some elements of the system, other aspects of program expansion, and eventually paying for replacement of the facilities as their useful life is exhausted. In the interim, the rather substantial cash (or security) balances in the accounts would provide a basis for gaining experience in the investment of capital for the public benefit. Among the elements of investment to be considered would be economic projects for the benefit of the local citizens in term of providing gainful employment as well as opportunities for personal investments.

The pursuit of investment programs would, of course, have to be made with full cognizance of timing and amounts of funds required for the proper operations of the utility services, including investments for renewal and expansion of service.

* Emphasis is upon cost. Depreciation on contributed capital assets would be an element of cost.

** Inasmuch as interest on the depreciated capital investment is also an economic cost, consideration could be given to its inclusion as an element of billable cost.

V. ADMINISTRATION OF THE GRANT PROGRAM

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The primary purpose for this study has been to facilitate the execution of a grant to be made by A.I.D. to the government of Egypt for the purpose of strengthening the infrastructure facilities and programs within the three provincial cities of Beni Suef, Fayoum, and Menia. Although this report will provide a basis for the next steps in this understanding, many problems will remain to be resolved.

It is appropriate to comment upon several of these :

1. A.I.D. program definition
2. Capital program development
3. Allocation of funds
4. Administration of grant funds
5. Oversight in execution of the program

1. A.I.D. Program Definition

It is the finding of this report that, generally, plans and specifications do not exist upon which contracts could be let in the immediate future for the wise expenditure of funds to be made available through A.I.D. Although this study has identified the significant elements of infrastructure that appear to be of the highest priority (water, wastewater, and streets) it does not purport to offer a reliable catalogue of the detailed facilities that should be constructed nor the internal priorities which will be involved. The principal requirements identified are stated at "order of magnitude" levels of cost likely to be required to bring these elements of the infrastructure onto an acceptably basis for accomodation of the projected population in the three towns in 1990. In the aggregate, these capital costs plus highly desirable associated costs for development of planning, administration, operations, and financing will doubtless exceed the amounts currently contemplated by A.I.D. for this program.

Under these circumstances, it is recommended that the grant program for the benefit of the three cities be, in general terms, designed to (a) improve the infrastructure, and (b) improve the management, operational, and financial systems associated with these functions within the municipalities. Under this recommendation, the grants would be in lump-sum; however, they would be established in a manner that would assure attention not only to the physical facilities but also the related aspects of operation, management and finance so essential to improved long-term performance of these functions.

This pattern for making the grants is suggested in order to enable the municipalities to :

- a. Strengthen the process of decentralization.
- b. Provide time in which certain of these problems can be attacked on a systems design basis, rather than merely proceeding with construction of elements which it is hoped will enable the system(whether well or poorly designed overall) to function somewhat better.
- c. Cope with the fact that precise amounts of money required for the different functions is not known at present, that the aggregate requirements are likely to exceed the current A.I.D. funds provided, and that a long-term capital program and its requisite financing should be developed and adopted before initial construction contracts are executed.
- d. Enable the municipalities to make efficient use of the funds being expended.

2. Capital Program Development

Although the construction of certain facilities is one of the primary objectives of the contemplated A.I.D. program, it is urged that it is not the only purpose of the program. Elsewhere in this report it is brought out that there are deficiencies in the entire capital program process which need to be corrected as soon as feasible. It is believed that the work to be done in these three cities in the improvement of their infrastructure can provide pilot undertakings which will be of long-term advantage not only to these functions but also to other functions in the cities. Moreover, if the program is successful in these cities, it can serve as a spring-board for adaptation to other cities in Egypt.

At the outset it is urged that formal responsibility for eventual project selection be placed with the locally elected municipal councils in the three cities. As a part of the process of selection, the governors, the mayors, and the executive councils would be encouraged to participate by making recommendations and offering information and assistance; however, ultimate responsibility for project selection and authorization would be firmly fixed with the locally elected municipal councils.

Development of a Sound Capital Program

At present, these municipalities do not have sound capital programs. This is partially due to the methods of financing but is also due to a number of other factors mentioned elsewhere in the report. Actual project selection under this grant by A.I.D. should be made through a comprehensive capital programming process. This does not mean a protracted process; however, it does require a well defined process and the willingness of both elected and executive officials to work constructively in the development and adoption of a long-term capital program for the three functional areas identified as encompassing the greatest priorities within these cities.

These steps are offered as being worthy of consideration :

- a. Upon award of funds by A.I.D. (or earlier if some advance funding can be arranged), the elected councils would be encouraged to identify the objectives which they believe warrant the highest priority for application of the grant funds. Identification at this point can best be in terms of statement of goals, rather than identification of specific projects.
- b. Within such initial priority determinations, the mayors would be charged with responsibility for development of the basic long-term operating programs in respect to these functions. Such programs would involve the definition of the manner in which it is intended that the functions be carried out over a period of years. It would involve, in the capital facility area, a systems analysis approach under which different potential patterns are identified and evaluated as to costs (both operating and capital) and results likely to be obtainable.

The culmination of this stage would be the presentation of findings by the mayor to the elected council, together with his recommendation of a specific capital program under which needed facilities would be developed. The costs in the initial years would be borne primarily from the proceeds of the A.I.D. grants; however, the capital program would also specify the manner in which moneys developed under the financing program (discussed elsewhere in this report for the water and waste water functions) could contribute to the financing of elements of the capital program to be undertaken later in the current decade.

The proposed capital program would provide explicit schedules of proposed projects, definition of costs in current and prospective future values. It would also indicate the impact of such costs upon both the levels of services and the rate structures required to finance them, whether those costs are for operations or capital purposes of the self-sustaining water and waste water programs or of the general revenue supported street programs.

- c. With such information in hand, together with data on the alternatives seriously considered by the mayor, the elected council would adopt a capital program which would constitute authorization for the mayor to commit the amounts of funds for the purposes identified in the program.
- d. The selection of consultants required under this program would be by joint action of the mayor and A.I.D.

- e. The mayors would be responsible for award of contracts and for seeing that execution of the program was in accordance with the actions of the elected council and terms of the contracts.
- f. The elected council would provide general oversight to the operation and would be provided with suitable staff assistance to enable it to perform creditably such oversight and follow-up functions.

The foregoing pattern of project selection would have the advantage of permitting the municipalities to explore alternative methods of achieving the results sought. For example, in Fayoum the question should be raised as to whether the municipality should, in fact, construct a new water treatment plant in order to release to the remainder of the governorate the current filtered water being supplied to the city by GOPW through its plant. Questions of the correct balance between filtration capacity and filtered water storage require very explicit evaluation in order to make the available funds produce to the maximum attainable efficiency. Matters of simultaneous laying of water and sewer mains and street paving require study along with the questions as to the timing of provision of network and street facilities that will not be heavily used until toward the end of the decade. These and many other elements of local government administration can be more effectively handled under the pattern suggested here than under grants of specific amounts of money to construct explicit facilities.

3. Allocations of Funds

Implicit in the foregoing is the right of the local elected councils to make decisions to allocate funds to priorities as they perceive them. On the other hand, allocation of funds by A.I.D. is believed to carry with it a requirement that such funds be used as fruitfully as feasible.

In the case of the facilities for water and waste water functions, reasonable success involves not only elements of physical plant improvements but also four other factors, to wit :

- a. Responsible evaluation of elements of systems design.
- b. Improved operating procedures.
- c. Improved systems of management and finance
- d. Training of personnel.

In the light of these considerations, it is recommended that A.I.D. require that a significant portion of the funds made available under this program for water and/or waste water functions be set aside for the above four factors, with respect to which the following comments can be made.

a. System Design

Usually there are a number of ways in which any given objective or set of objectives can be accomplished. This is true in the provision of potable water services as well as some aspects of handling of waste water. Unless the problem is viewed comprehensively, alternative solutions may not be vigorously explored. There is a likelihood that well-worn paths will be followed for design of individual elements of the system without a search for the most effective and economic solutions to the problems confronted.

An illustration is afforded by the relationship between patterns of water consumption, filtration capacity, filtered water storage, the primary distribution network, the location of booster pumps, the patterns of system water losses, and the characteristics of the major mains and reinforcing mains. Each of these is an inter-related element of a complex operation. A judicious increase in filtered water storage may reduce the amount of filtration capacity required (at a net cost savings for both capital and operating budgets); strategically located reinforcement mains can help to produce satisfactory water pressures in area now suffering from low pressure-- perhaps with reductions in pumping costs, as well; a comprehensive, continuing program for the cleaning and relining of existing water mains can frequently be carried out at a fraction of the costs of replacement of installation of supplementary mains; a program for early discovery and repair of leaks and breaks can reduce water losses and costs throughout the system. Observations of the current systems suggest that attention has been focused perhaps too much upon historic formulae and too little upon a view of the discrete elements as a part of a composite system. It is appropriate that in these circumstances A.I.D. considers insisting that a systems analysis and design approach be applied before plans and specifications are developed for individual elements of the system.

In these circumstances, it may be necessary not only to train the principal officials of the town but also to cause engineers and others to take a more comprehensive approach to systems design.

If this proves true, its accomplishment will require significantly larger allocations of funds to engineering and associated activities that would be required merely to execute the design of specific elements of the system. It will mean, among other things, the selection of the consulting engineers with a view to their systems design capacity as well as their facility design capacity. It will also doubtless mean a challenging of the appropriateness of a continuation of certain historical (and largely formulae) relationships between elements of the system. Thus in Egypt where rainfall is so insignificant, exploration of relationships of sewage impounding facilities during hours of maximum flow vis-a-vis expansions of sewage treatment facilities to accommodate peak flow may warrant evaluation.

b. Improvement of Operating Practices

Many of the existing operating practices found in the cities are good. In fact, a number of them are exceptionally good given the antiquated equipment and plant and the absence of various types of automatic recording and monitoring equipment ordinarily found in fully up-to-date systems. In order to bring the operating practices onto a higher level of operation it will be necessary to take a number of steps beyond the training of personnel which is discussed shortly.

Among the kinds of actions required will be the following:

Installation of automatic recording and monitoring equipment and systems.

Acquisition of equipment required and development of associated systems to assure effective detection of leaks and breaks.

Development of standards under which water and sewer mains shall be replaced.

Development and initiation of a program for cleaning and relining of water mains where required.

Development and installation of a program of water meter maintenance, repair, and replacement.

Provision of required equipment and installation of procedures for testing of filtered water to assure compliance with appropriate health standards.

The degree to which this type of operating improvement is required varies among the cities; however, without a detailed inventory it is not feasible to provide a price estimate. It is recommended that the amount of L.E. 500,000/600,000 per city be set aside for use in acquisition and installation of these improved elements of equipment and procedures. The training of personnel in their use be a part of the general training program recommended below; however the costs required to work with the local employees in diagnosis of the problems and identification of equipment and methodology would be charged to this activity.

It will probably require a period of several years to bring about the kinds of change that will best serve the municipalities in these areas. The process is an expensive one; the use of canned programs should generally be eschewed although adaption from both Egyptian and other experience can be useful.

For the administration improvements it is urged that a sum of about L.E. 600,000 be budgeted for each city. This sum should be expended over a period of about four or five years. In the field of planning this could commence at an early date after the grants are made; in other areas it would commence as circumstances suggested but would generally parallel the period during which the improvements to the systems are being put in place.

There should be a leader of this management improvement program that would direct and coordinate the activities within the three cities and seek to facilitate cross-fertilization of pattern of growth among personnel of the three cities. Specialists in the various components of the management system would be available to each of the three cities; a project manager in each of the three cities would have direct responsibility for bringing along the program there--especially of developing rapport with municipal personnel and encouraging their development. The proposed budget would average L.E.150,000/year if spread over a period of four years. Although this may appear a significant amount, the costs involved could easily rise significantly above this level for some years. This is especially true when one realizes that most of the elements of comprehensive management systems are now either absent or at a level which affords only a limited base upon which to build.

c. Improvement of Management Practices

The foregoing work element would be concerned with the physical operations in the water and waste water systems. Closely allied to these improvements is the need for improvement in the management practices associated with water and waste water operations. These relate to such matters as :

- Organization
- Planning
- Management information systems
- Utilization of manpower
- Procurement
- Establishment and revision of use charges
- Methods of financial management
- Personnel Administration (excluding training)

The mere importation and imposition of management systems developed elsewhere and found successful under other circumstances is not an adequate response to the problems likely to be encountered in Egypt. Therefore, it is necessary to provide for detailed analysis of the problems of management by management personnel of each city.

If the management system is to function it must be a product of internal conviction developed by local management personnel that (a) there are correctable deficiencies in the present systems; (b) that there are alternative ways in which to make improvements, each with its assets and liabilities; and (c) that the design adoption, and installation of improved elements of management will make meaningful contributions to the welfare of the community.

The development of this type of process is necessarily a very slow and costly operation. Success is likely to occur only when those seeking to assist are both technically capable but more importantly possessed of personal attributes of patience and of gaining a sense of their own rewards by developing skills in others. Long established management practices are not changed unless those involved are convinced that genuine benefits will result from change.

d. Training of Personnel

The final critical element of the comprehensive approach to providing improved water and waste water services lies in improvement in the capabilities of personnel. Some aspects of such improvement should be attainable through the three steps outlined above. However, the training described above is for a rather narrow segments of the operation and directed more toward the supervisors than to the general complement of personnel.

Each year the number of persons employed in the local units of government with certification of completion of educational programs increases. Genuine capability however, arises from successful experience. Education prior to assuming the job helps to facilitate success but assuredly does not guarantee it. Moreover, many of the employees upon which success in water and waste water operations depends, perform tasks which do not require extensive formal education. For example, the proper bedding of a water or sewer pipe arises from experience in doing the job. Willingness to take the time and effort to bed it properly is dependent upon both the skill required to perform the job and the conviction that the effort is worth it. The kind of training necessary to bring about the desired levels of performance is on-the-job training--for which some rewards through recognition or monetary terms is usually necessary.

The design and implementation of a successful job-training program for existing personnel and for new recruits or persons assigned to new responsibilities is a difficult task. There is no such program in force at present. The kind of personnel training envisioned here should be carried out by under supervision of a departmental personnel officer. It is likely that such officer will have to be trained before he or she is able to work effectively with the personnel of the water department. The specialists engaged to work with each of the cities will have to have had successful experience in development and execution of training programs relating to these functions.

One of the more difficult aspects of this program will be the recruitment of such specialists. Another of the very difficult tasks will be identification of personnel engaged in water and waste water operations who have the higher probabilities from profiting from these programs for initial training in order that they may afford a cadre from which the operations can be expanded as the program matures.

It is recommended that the budget for the personnel training operation be initially established at LE750,000 for each city and that it be spread over a period of five years.

The amounts suggested for the foregoing elements of this program may at the outset be viewed as excessive; however, when spread over a number of years the amounts are relatively meagre. Beyond these amounts it is recommended that a contingency fund of about I.E. 500,000 be established for these activities in each of the three cities. If not required for these activities, it may subsequently be lapsed or assigned to supplement the physical development funds identified as being needed in other portions of this report.

Failure to make adequate provision for the management and training aspects of the program will not negate substantial physical improvements; however, the utility of these capital expenditures will be substantially reduced if the operations of the systems are not significantly improved.

4. Administration of Grant Funds

Under law 43 of 1979 the popular council of the city is permitted, if not directed, to establish a special account for Services and Development. Section 54 of that act stipulates that this fund shall be operated under regulations established by the governor. However, it is not known whether these regulations are of a procedural character (e.g., the manner of deposit and accounting for moneys) or whether they may also control the purposes for which such funds are used.

Under Section 51, paragraph 10, of Law 43 of 1979, acceptance of donations, grants or endowments offered by foreign persons or agencies to the local units are required to be approved by the Council of Governors. The local council of the recipient unit may then allocate such grants or portion thereof to the Services and Development account.

With these exceptions, it appears that the local governments may expend such grants without resort to the standard procedures for expenditure of moneys under BAB-1, BAB-2, and BAB-3. Such expenditures would, of course, be subject to the conditions imposed by the donor--assuming that these were acceptable to the recipient and the Governor and the Council of Governors.

In this regard, it is recommended that A.I.D. consider seeking to establish a system under which the moneys are handled through the National Investment Bank, which would have responsibility for release of the funds only for the purposes of the grants and would also have responsibility for at least quarterly audit of the expenditures. Thereupon report would be made to A.I.D. which would retain the right to interrupt the flow of funds

should it become apparent that expenditures were not being handled in the manner provided for under the grant.

5. Oversight of Execution of the Program

Although A.I.D. will wish to provide very wide latitude to the municipalities in the development and execution of these plans, it is believed that provision should be made for general oversight of the program.

It is not clear at this point what types of such oversight would be most appropriate. Given the new National Investment Bank, it is possible that this organization would be the appropriate one to which oversight responsibilities should be entrusted. Alternatively, the Ministry of Planning might be an appropriate agency.

Inasmuch as no opportunity has been present in the course of this study to observe the operation of these two units of government, no recommendation is made here other than that A.I.D. should retain oversight options, with the right to interrupt the flow of funds to the projects if conditions of the grant are not reasonably observed.

APPENDIX - A
ORGANIZATION AND BASIC PROCEDURES
FOR PLANNING AND EXECUTION OF
SELECTED BASIC SERVICES

APPENDIX-A
ORGANIZATION AND BASIC PROCEDURES
FOR PLANNING AND EXECUTION OF
SELECTED BASIC SERVICES

Introduction

The function of this Appendix is to outline the study team's understanding of the organization and basic procedures involved in the planning, budgeting, and related financial procedures under which capital facilities are produced.

Under terms of the contract, the study was required to be carried out almost exclusively in the field, with the objective of observing organization and procedures as they appear to exist within the headquarters of the governorates and within the provincial cities. This method is in sharp contrast to that which might have been pursued, namely, of relying heavily upon work with the various central offices of the ministries of the central government.

The procedure used has produced original field impressions that have been useful in determining how various functions seem to be performed. It has produced highly variable degrees of understanding by the study team as to the situation in the different governorates and their provincial cities. These differences in understanding have been in large degree a reflection of two circumstances :

1. The availability and willingness of local governmental personnel to discuss their operations.¹
2. Limitations of knowledge and expertise of some of the persons interviewed.

It has not been feasible to submit the descriptions of fact to local officials for review and criticism. Accordingly the study team may have failed, in some instances, to report accurately practices in effect. Apologies are presented for errors both to the officials concerned and to the readers of this report. Moreover, there were the inevitable problems of communication with the inability of the non-Arabic speaking portions of the study team to achieve a full degree of understanding of the nuances (and, on some occasions, of the substance) of conversations.

¹ Generally full cooperation was received from both governorate and provincial city personnel. However, on several occasions there were misunderstandings which resulted in temporary blackouts in the sense that for a time there was no information flow. In some other cases, e.g., Fayoum, the high priority placed by the Mayor on the water and sewerage functions for closed access to information concerning other functions, except for housing. Unfortunately these interruptions came at times of maximum PBS personnel commitment with consequent inability to secure information when it would have been most useful.

Despite these limitations it is believed that the more important aspects of the processes have been comprehended and the descriptions herein are therefore substantially accurate.

The topics covered in this appendix of the report are :

- A. Local Governmental Organization
- B. The Planning Process for Capital Outlays
- C. Budgeting
 - 1. For Revenues
 - 2. For expenditures
- D. Execution of the Approved Capital Budget (BAB-3)
- E. Accounting and Reporting

These topics are discussed in the order listed.

PART A
LOCAL GOVERNMENTAL ORGANIZATION

PART A

LOCAL GOVERNMENTAL ORGANIZATION

It would be of interest here to present comprehensive descriptions of internal organization relying largely upon diagrammatic relationships normally reflected in organization charts and associated manning tables. Unfortunately, it has not been possible to secure reliable detailed charts and little data has been available concerning manning tables for different organizational units. 2

Lines of responsibility reflected on those organization charts available as well as lines of authority have proved to be quite inaccurate. Therefore, in lieu of examination of such charts in this report, the following description is presented to convey the general configurations of local government as understood by the study team.

The Formal Organization

The formal levels of organization within the three governorates under study are :

The Governorate Headquarters	This organization has general responsibility for supervision and/or oversight of performance of local government responsibilities.
Markaz	Districts into which the governorates are divided for administrative purposes.
Markaz City	The principal city within the Markaz (frequently the only city therein) is responsible for not only administration of its own affairs but also various aspects of coordination of the municipal and village council governments within the Markaz. The Markaz city in which the headquarters of the governorate are situated is frequently called the <u>provincial city</u> , or the "capital city". In law it apparently has the same status as each other markaz city.
Village-Councils	Organizations of groups of villages for administrative purposes.

2 Even should data concerning personnel have been available, they would have been of limited utility in seeking to arrive at meaningful personnel complement, especially in the administrative offices. This is due to the national policy of job placement guarantees to graduates of secondary, technical and university level institutions of learning. Casual observation suggests substantial overstaffing in relation to work observed to be in process as well as gross overcrowding of staff in relation to available office facilities.

The principal officials and official bodies within these levels are :

At the Governorate Level. The Governor is nominated by the President and has ministerial rank within the government of Egypt. As such he is the most important official within the governorate. He has wide legal power in a number of respects and yet seems somewhat limited in other areas, especially in the budgetary process.³

The governor presides over the governorate Executive Council, composed principally of directors of those ministries that maintain directors at the governorate level.⁴ The executive council is the official administrative coordinating body of the governorate.

An Elected Council provides representation from the various markaz into which the governorate is divided--consisting in some of the larger governorates of more than 60 members. The powers of the elected council appear to be limited to (1) approval of the proposed budget for the governorate, (2) approval of the distribution of moneys, within the "headquarters budget"⁵ of the governorate, among the various units of local government, and (3) certain ill-defined oversight and "follow-up" responsibilities.

The Markaz City. The Executive Council of the markaz city (which is the capital city in the case of the three cities of concern in this study) is presided over by a chief, who is frequently referred to as the Mayor. Again the mayor is the chief executive of the city but his authority is due in part to his political position rather than to his actual executive powers. He is apparently without authority to enforce orders or, except under extreme circumstances, to replace local directors. The mayor is assisted by a deputy who acts as his principal administrative officer.

The Elected Council of the markaz city stands in relation to the city in much the same manner as the elected council at the governorate level stands.

3 Although beyond the scope of this report, it is perhaps appropriate to observe that much of the success of a governorate in securing many kinds of appropriations or allocations of moneys is contingent upon the personal and political position together with acumen of the governor.

4 As of December, 1980, these ministries are reported to maintain directorates at each governorate : Education, Health, Housing, Social Affairs, Supply, Agriculture, Manpower, Roads and Transportation, and Youth. The latter two were established as directorates during the current 1980-81 fiscal year.

5 See Part C for definition of the "headquarters budget."

The Markaz. The officials of the markaz city generally coordinate the work of their counterparts located in the various village councils. As a result, the markaz does not have any separate administrative staff. It does, however, have an Elected Council the responsibilities of which are not entirely clear to the authors of this report.

The Village Council. Inasmuch as the village council activities are beyond the scope of this report, no inquiry was made into the manner in which they conduct their affairs.

From the foregoing it is apparent that there are multiple lines of authority and responsibility flowing throughout the governorate. In many cases, the lines of responsibility of administrative officials serving the governorate (or even within the cities and village-councils) seem to be stronger in relation to their Cairo counterparts than to the chief executives within the jurisdictions in which they serve. Thus, for example, the chief financial officer for each governorate is responsible primarily to the Finance Ministry-- not to the governor. Several of budgeting and accounting officers within the governorate headquarters, as well as within the individual local government units, reported that they are more responsible to the chief financial official of the governorate than to any other officer. Organization charts fail to reflect these de-facto relationships.

In like manner, other ministries with major responsibilities at the local level that are represented by directorates sit upon the governorate Executive Council and have their counterparts throughout the system of local government units within the governorate.

The directors prepare their own proposed operating budgets, taking much of their instruction from their Cairo counterparts. They usually have a better and more accurate knowledge of what is possible to secure and realistic to expect in terms of both operating and capital budget authorizations within their departmental areas than do the chief executives and elected councils at the different levels of local government. Although they transmit budget requests through the finance officer and these must be approved by the executive and elected councils of the governorate the prime chain of relationships seems to be with their Cairo counterparts.

These representatives of the Cairo ministries at the municipal level are theoretically answerable to the chairman of their respective executive councils; however, inasmuch as they can only be removed or transferred with great difficulty (including special action by the governor), the possibility of effective administrative discipline by the mayors is meager. Generally they are the final authority (and source of information) about their respective areas in the governorate-- not only for the executive branch but also in relationships with the elected councils of the jurisdiction to whom they report on a regular basis during the budget cycle. The role of the governor and, to a lesser extent, the mayor is that of one seeking to produce coordination by cooperation. The coordinative role is, therefore, largely one of persuasion-- not of authority. Except for the governor, the other principal executive officials tend to be the first among equals, rather than being a position of chief executive officer of either a municipal or profit corporation as known in the United States.

The Elected Councils

An important element of local government is the elected city council. This aspect is one which may well offer significant potential for more careful attention in the future, particularly if the process of decentralization goes forward in a realistic manner.

Of the membership of the elected councils observed, a high proportion works for different ministries of the government within the area served by the council (e.g. about 60 percent in the case of the elected governorate councils in Beni Suef and Menia). These governmental employees come from the ranks of teachers, health technicians, engineers for agriculture, and other vocations. On the elected councils they are frequently the "experts" in their specialities. They could contribute significantly to the planning and budgeting processes if these processes were organized in a manner that made them meaningful.

Many members of the elected councils appear to have good personal capabilities-- in some cases superior to those of administrative personnel who were contacted. They are knowledgeable concerning the needs of the community as perceived by the citizens. They insist upon incorporation of the statement of those needs for their areas in the budgetary process, especially in BAB-3. They are mindful of the conflicts imposed by limitations of resources but take the position that inasmuch as they are neither responsible for nor have authority to establish the levels of resources to be used, they will seek to satisfy their constituencies by including all of the needs in the budgetary statements.

The ability of the elected councils to perform the responsibility imposed upon them for "follow-up" (i.e. general oversight) on the execution of the budget is limited by two considerations :

1. The absence of a good system of management information that produces needed information on a timely basis.
2. The absence of any direct staff services for the elected councils.

It appears the council members serve without compensation for their duties as council members. Although they are doubtless excused from performance of their duties in their other government positions to attend to responsibilities as councilmen this places the "non-governmental members" as a disadvantage from an economic point of view. Separate compensation for service may be in order and might well encourage continued participation of highly able members that otherwise may become discouraged because of time demands. (They report that frequently they have to spend several hours per day on council affairs).

Another factor inhibiting the successful operation of the elected council is the absence of long-term programmatic and physical development plans. (See Part B). Lacking an officially approved statement of such basic long-term objectives, all other planning must be largely upon an ad hoc basis. As a result, annual budgets-- both proposed and approved -- reflect contemporary pressures rather than steps toward fulfillment of master plans.

The lack of long-term basic operating plans (under which priorities have been determined among alternative means for the attainment of stated service objectives) is critical. Thus, while the objective of more effective housing programs is doubtless accepted both nationally and locally, there is little or no evidence that steps taken on an annual basis are in pursuit of defined elements of a comprehensive program for achievement of the longer term objectives. Absent these kinds of plans, the opportunity for development of infrastructure on an integrated, economical, and efficient basis is not present.

These conditions are unfortunate especially in view of the favourable impression we received of the members of the elected councils that we had an opportunity to meet.

In Conclusion

The current pattern of distribution of power among local officials makes it extremely difficult for the chief executive to perform with full effectiveness. The duality of responsibilities within each directorate places these officials in a tenuous position-- being obliged to satisfy both their Cairo counterparts while attempting to maintain effective relationships with the governors, mayors, and other chief executives.

The position of the elected councils seems to be in a state of flux. A point may be reached in the not too distant future in which a more definitive resolution of their roles in the planning and oversight processes will have been worked out. This is especially true in view of the seemingly increasing political awareness of the membership.

To the extent that genuine decentralization is to be accomplished, a great deal more than paper assignment of personnel and responsibilities to the field is required. The hard decisions are still downstream-- revolving around the extent to which national leadership finds it appropriate to transfer genuine authority from the ministries to the governorates and their subordinate local units. A more workable definition of the division of responsibilities between the chief executives and the elected councils and between the chief executives and the department heads is needed.

PART B
THE PLANNING PROCESS

PART B

THE PLANNING PROCESS

Attention has been focused upon the processes relating to the development of the budget for capital outlays (BAB-3)⁷ in the three governorate capital cities but it has necessarily been concerned very heavily with the governorate itself. A number of responses were received which are seemingly contradictory. Reconciliation of these views would require an amount of input not feasible within the time available for this study. Therefore, the consensus that was developed within the study team as a result of the inquiry is presented but without the degree of confidence that it would be desirable to have in this regard.

The Five Year Plan, 1978-1982

In 1977 Egypt prepared a five year national plan covering the years 1978-1982, both inclusive. The process included an input by the local governmental units and the governorates themselves. After consideration the national five year plan was published (in both Arabic and English language editions); however, planning officers at the governorate and local levels are apparently uninformed of the contents of that plan for their respective governorates. A review of Table A-1 will show that in the case of Beni Suef governorate there have been vast differences between the amounts contained in the 1978-1982 five-year plan and the amounts shown in the annual proposals for the years 1978,1979, and 1980. Pretermittting the 1978 large amount for electrical expense, it is obvious that the annual plans have little relationship-- even for the initial year of 1978-- to the information provided in the five-year plan.

For a number of reasons (including the appointment of a new Minister of Economy) a new five-year plan is being prepared covering the five years commencing in 1980. Although some data are available (for Menia governorate) relating to elements of this new five year plan as proposed by the governorate, no information was given as to the date contemplated for release of the new-five-year plan on a national basis.

The failure to bring the five-year plan and the annual planning processes into meaningful relationship arises, in substantial degree, from these considerations :

1. The five year plan(s) are expressed at current prices (in LE) of the year in which prepared. No method of up-dating to reflect the prevailing high rates of inflation is in force.

⁷ For a discussion of the budgetary classifications (BAB-1,BAB-2,BAB-3, and BAB-4) see Part C-2 of this Appendix.

Table A-1
Proposed Expenditures Under the 1978-82
Five-Year and Annual Plans for BAB-3 for
Years 1978, 1979, and 1980

Beni Suef Governorate

(amounts in L.E. 000)

Activity	1978	1979	1980
Electricity			
5 Year Plan	250,000	609	331
Annual Proposals	241	270	412
Transportation			
5 Year Plan	374	901	1,007
Annual Proposals	710	1,071	2,262
Utilities			
5 Year Plan	347	2,185	2,486
Annual Proposals	3,217	4,327	7,389
Social Services			
5 Year Plan	842	4,242	4,066
Annual Proposals	270	717	1,259
Housing			
5 Year Plan	1,450	4,770	3,390
Annual Proposals	990	750	2,900
Totals			
5 Year Plan	253,013	12,707	11,280
Annual Proposals	5,427	7,134	13,021
Exhibit: Approved Totals			
in BAB-3 Annual Budgets	240	474	740

Source: Beni Suef Governorate, Planning Department.

2. The central government makes major changes in its own priorities with considerable frequency. Thus, the emphasis in 1978 was on industrialization; in 1979 on communications and transportation; and in 1980 on food sufficiency, housing and land reclamation. Such shifts in emphasis from year to year make it difficult to carry out the various elements of the original plan.
3. There is an absence of a meaningful planning process and a dearth of well-trained planning personnel at both the governorate and local unit levels. The personnel deficiency appears to be very acute in terms of useful experience and training-- but not necessarily in terms of numbers.
4. The annual "plans" are generally not plans within any formal sense. Rather they are largely lists of perceived requirements principally by local elective councils that seek to reflect need. This is done without any knowledge of, or responsibility for, the levels at which moneys are likely to be available.

The Annual Capital Planning Process

Early in the calendar year governors (all of whom are members of the Council of Ministers) advise all the local units in the governorates about general policy and national priorities and provide them with a broad outline of the National Investment Budget as recommended by the Council of Ministers that will be submitted to the Parliament for consideration, amendment, and adoption.

Given the total National Investment Budget (e.g. the LE 3,100 million in 1980 shown in Table A-2), the Minister of Planning will prepare a general breakdown of this budget (see Table A-3). After discussion with other Ministers he proposes how much should be allocated to each ministry and to the headquarters of the governorates-- subject to the approval of the Council of Ministers. In turn, each minister, with the assistance of the Minister of Planning will tentatively distribute a portion of his budget for investment (BAB-3) to the governorates. This tentative distribution is discussed at length with the Council of Governors. The budget for BAB-3 headquarter expenditures will also be divided between the governorates taking into consideration some of the high priority programs.⁸

In March/April of each year, the governors know approximately how much each is likely to receive in BAB-3 funds for headquarters functions. The ministers have a rather general idea of their budget and how much will be allocated to each of the governorates and they reportedly advise their local directors of those amounts which can be used as guidelines in the preparation of budget proposals.

⁸ For example for the budget year 1980-81 top priority was given to Food Sufficiency and to Housing. The headquarters budget will then include large funding for these items that would have otherwise been handled by the Ministries of Supply, Agriculture, or Housing.

While this is happening in Cairo, each of the local units of each governorate is trying to put together its proposed investment budget. For each local unit (such as a city) this is the responsibility of the planning officer for the headquarters functions and of the local representatives of the various Cairo ministries (who usually work with and report to a Director of that function at the governorate level.) They prepare the list of proposed expenditures for their respective sectors. At the city, markaz and village-council level, capital budget preparation is usually initiated by the elected council and coordinated by the administrative officers mentioned above so that all the needs for projects as perceived and expressed by the people can be properly recorded in the BAB-3 "plan". Although some priorities may be expressed, no attempt is made at making accurate costing of the requests because of a lack of available expertise at that level of government and also because this is perceived by the elected council as a would-be interference in the administrative branch of the government. In other words, this process of listing all the proposed investments is a prerogative of the elected councils at the local level and they seem really neither willing nor interested in getting too deeply involved in a real budgeting exercise.

As the president of the elected council in one city said :

As long as we have no power to levy local taxes as we see fit, as long as we have no hierarchy to help us become better informed, as long as we have a 100 percent grant financed budget, why should we try to do serious budgeting?

We simply ask for anything we need, as much as we can think of and wait, without too many illusions, for Cairo to provide it. When Cairo decides we are ready and mature, then we will be ready to show them. Meanwhile we will state our needs and do no more. Right now we are giving Cairo the benefit of the doubt that they are doing their best to solve enormous national problems. But if we ever discover that we are being dealt with in an unfair way, then we will do something about it.

In any event, the requests for capital expenditures of the city are compiled by the city executive council and sent to the governorate. These are assembled by the chief planning officer who presents them to the executive council. Since the council includes all the directors who have received their guidelines from Cairo, it would be possible to make adjustments at this level to make it conform more closely with the amounts that are likely to be approved in Cairo. However, such changes in the proposed budget are subject to acceptance by the elected council of the governorate. It often insists that the "needs of the people" should go all the way to Cairo and be at least seen there-- even though the likelihood of acceptance is remote.

Table A-2
Approved BAB-3 Budget for Egypt
1980

(amounts in millions of LE)

Central Government Ministries	421
Local Government Headquarters	247
Service Organizations	359
Economic Organizations	1,086
Public Sector Companies	987
<hr/>	
TOTAL	3,100

Source: Ministry of Finance

It appears, from examination of the records made available to the study team that although BAB-3 headquarters "approved" budgets reach the governorate on time for the beginning of the fiscal year, the other expenditures of BAB-3 (i.e., those budgeted through the ministries in Cairo) are not made available until sometime after the beginning of the fiscal year. These appear in the records after the beginning of the year as elements of the "adjusted approved" amounts.

In the final accounting for the year, the governorate shows for BAB-3 the original appropriations consisting solely of the headquarters portion. The "amended" appropriations show the adjusted headquarters amounts as well as the amounts eventually allocated from the ministries in Cairo. (No trace is available as to the times at which such ministerial appropriations are provided to the governorate and the extent of adjustments therein during the fiscal year, if any.)

In summary, it seems that the annual capital planning process is marked by major irrationalities :

1. The entire process of project initiation is based upon the perceived needs as stated by the village-councils, the municipalities, the markaz, and the governorate itself. It is complicated by the fact that essentially it is a compilation of requests from these various sources, including the directorates within the governorate, without any meaningful, strong, and effective coordinated planning. The general attitude seems to prevail to the effect that this is an opportunity to participate in an essential political process of assuring everyone that his requests have been properly transmitted to the central government. None is willing to assume responsibility for attempting to bring the list of requests into any basic integrated whole or to provide a comprehensive plan within each markaz and governorate.

Table A-3
 Approved BAB-3 Investment Budgets
 Central Directorates
 Year 1980

(amounts in millions of LE)

Agriculture	99.7
Industry	6.8
Electricity	2.6
Transportation	7.3
Trade and Supply	1.1
Economy and Finance	4.5
Building & Construction (Housing)	109.5
Health, Social Affairs, Religion	32.8
Education, Research, Youth	80.8
Culture, Information	1.3
Tourism	9.6
Internal Security - Justice	26.5
Other Services	29
TOTAL	421

Source: Ministry of Finance

2. It is carried out without the advantage of long-term comprehensive operating programs and program objectives and also without the benefit of comprehensive physical development plans for the urban area. (Recognition of the need for such plans has been forthcoming from two sources -- the General Organization for Physical Planning (GOPP), which is preparing comprehensive physical development plans for Menia and Beni Suef and by the Governor of Fayoum who sponsored a 20-years development plan for the city of Fayoum).
3. Although we have not followed through the actions taken by the Planning Ministry of other affected ministries, it is clear that, except for the relatively small "headquarters" element of the capital plan, there is little evidence of useful interface at the local or national levels between the various projects being pursued.
4. The entire process is accomplished without it being fitted into any framework of fiscal discipline, i.e., within any definition of funds likely to be available. It is also done without the benefit of effective pricing techniques for many items, especially the more complex projects.

The character of the capital outlay requests is illustrated by the requests filed by the Menia governorate for 1980-81 as shown in Exhibit A-1 at the end of this Appendix.

It seems that the examination of the budget by the executive council of the governorate should be the point at which the proposed budget could be made into one integrated planning document for the entire governorate. This could also be made in the light of allocations under the 5-years plan and within budgetary guidelines of the central government. It would optimize the response to the priority needs of the governorate. At the same time, governorates and local units should retain the right to set forth needs that cannot be accommodated within either the five year planned amounts or current fiscal guidelines. Only by such method can such needs be presented to policy-making levels. The reasons why it seems difficult to achieve this result do not include any inability of the local people to manage their own affairs. Our discussions in the field have led to the conclusion that training, appropriate staffing, and the existence of a management information system at the local level would enable elected officials to perform a very credible planning and budgeting function. However, the powerful grip that is held over the processes of budgeting by the Cairo bureaucracy would probably not permit this--except under strong ministerial pressures.

Approved Capital Budgets

The approved capital budget items⁹ for the governorate can be divided into four general categories:

- a. The governorate receives a lump-sum amount for its headquarters capital expenditures with some guidelines as to how it should be distributed among various functions.
- b. The central ministries with directorates at the governorate level receive gross amounts for capital expenditures for their respective functions and make allocations therefrom to the directorates within the governorates.
- c. The other ministries and independent agencies receive gross amounts for capital expenditures for their functions and subsequently make determinations of the amounts to be used for projects to be carried out in the respective governorates.
- d. The governorates are provided with some funds for various economic investments. (In Exhibit A-1 the amounts are shown in the final category of presentation).

For the headquarters, the allocation to the governorate by function (or project categories) is distributed among markaz and local units by the governor and his executive and elected councils. For the directorates in each governorate, allocations are generally made by the ministries, in lump-sum amounts, with distributions being worked out largely by the directorates subject to approval by the Executive Council and the Elected Council. For the economic investment projects, the allocations to each governorate are on a project (line item) basis; they cannot be used for other than the specified projects. For the independent agencies and the ministries not represented by directorates, expenditures within the governorate are determined by them -- frequently after consultation with the governor.

Within this context, it is appropriate to examine Table A-4 which shows the proposed capital appropriations for Fayoum Governorate for the calendar years 1980 and 1981 and the amount approved for fiscal year commencing July 1, 1980. It is noted that the aggregate planned amounts

(Continued on page:A:19)

⁹Certain capital funds by-pass the BAB-3 budgeting process. The most important of these are those derived from the special motor fuel tax for governorate roads outside the cities.

Table A-4

Planned BAB-3 Budgets for the Governorate
of Fayoum for 1980 and 1981 and the
Approved Budget for Fiscal 1980-81

(Amounts in thousands of pounds)

	Planned Amounts		Approved Budget
	<u>1980</u>	<u>1981</u>	<u>1980-81</u>
1. HEADQUARTERS			
o Water ⁽¹⁾	380	85	300
o Sewerage ⁽²⁾	540	450	-
o Electricity ⁽³⁾	600	600	209
o Roads	1,955	2,105	950
City Services	557	181	200
Projects ⁽⁴⁾	3,800	-	2,250
Youth	1,017	1,237	100
* Others ⁽⁵⁾	1,000	525	800
SUB-TOTAL	<u>9,856</u>	<u>5,183</u>	<u>5,109</u>
2. EDUCATION ⁽⁶⁾	5,063	4,034	620
3. HEALTH ⁽⁷⁾	2,058	2,633	55
4. HOUSING ⁽⁸⁾	5,730	6,233	600
5. SOCIAL AFFAIRS ⁽⁹⁾	605	608	53
6. SUPPLY ⁽¹⁰⁾ (Food Sufficiency)	900	400	2,300
7. AGRICULTURE ⁽¹¹⁾	4,806	8,045	838
8. MANPOWER	20	27	23
TOTAL	<u>29,038</u>	<u>27,163</u>	<u>9,598</u>

Source: Orally dictated by the planning director of Fayoum governorate who declined to provide access to or a copy of official documents from which information was provided.

Table A-4 (Cont'd.)

Notes to Table A-4

- (1) This amount concerns the city plant only. Addition to El Azab was undertaken by central government and not shown here. Design and construction handled directly by G.O.P.W.
- (2) This includes only replacement of pipes. They need 5 new pumping stations but these are not included in the budget since local officials could not estimate the costs. Subsequently Cairo provided L.E.1,950,000 for the pumping stations in Fayoum city.
- (3) For electrical distribution in the villages - This is not budgeted through the Ministry of Electricity.
- (4) Projects proposed are: a chicken farm, L.E. 3,000,000; an animal feed project, L.E.250,000; a brick factory, L.E. 550,000. Projects approved were a chicken farm, L.E. 2,000,000; and a brick factory, L.E. 250,000.
- (5) Others include street cleaning and waste disposal, mechanical equipment for sanitation, compensation for land taken to expand city streets, services and repairs of government buildings.
- (6) A new school is included in the plan.
- (7) Plan includes one mobile health unit, L.E. 60,000, for each 5,000 people.
- (8) Plan would cover their estimated requirements for popular housing.
- (9) Includes child care and welfare.
- (10) Under the food sufficiency program, the governorate received a bakery, a mill and a cold storage plant.
- (11) New projects requested to service agriculture are agricultural station, L.E. 433,000 (approved); veterinarian station, L.E.462,000; a fertilizer plant, L.E. 6.630,000, now being discussed with the World Bank; and an earth studies station, L.E. 500,000.

for 1980 and 1981 were L.E. 29,038,000 and L.E. 27,163,000 respectively. The approved amount for 1980-81 fiscal year was L.E. 9,598,000. Approved project or functional amounts varied widely as percentage of planned amounts.

Also of interest in this regard is the information for Fayoum city headquarters budget for BAB-3 for the year 1979, as shown in Table A-5. In that case, the only significant amounts of BAB-3 budget approved were for water, with minor amounts for cleaning and electricity.

Further information concerning the relationships between proposed, approved, and expended BAB-3 appropriations for selected years for the Beni Suef City, Beni-Suef Governorate, and Menia Governorate are shown in Table A-6, A-7 and A-8, respectively. The data are fragmentary in many cases due to unavailability of sufficient information at the local level to present a complete picture. In the case of the Beni Suef governorate the identity of the approved and expended amounts for the headquarters functions arise from the fact that, whereas original appropriations are made, these are adjusted in the course of the year in order to attempt to use all of the moneys available.

Interplay of Headquarters and Directorate Functions

It appears that so long as a function is at the directorate level of the governorate, the director of the function is protected against intrusion upon approved appropriations. In other words, the appropriation must be eventually used solely for the function to which it relates or lapse. On the other hand, appropriations made to the headquarters functions are generally subject to allocation by the governor, the executive council and the elected council among the local units. Therefore, it seems that the shift, in 1980, of highways and transportation and of youth affairs from a headquarters to a directorate category had the effect of enhancing the independence of these functions vis-a-vis the governor. On the other hand, the shifting of funds for new housing and for certain elements of potable water supply from the Ministry of Housing to a headquarters classification at the governorate level might have been designed to accelerate the process of decentralization.

Table A-5
Proposed and Approved BAB-3 Appropriations
City of Fayoum
1979

(amounts in thousands of pounds)

<u>Headquarters</u>	Requested	Approved
Water	390 ¹	198
Sewage	200 ²	-
Streets Enlargement	475 ³	-
Streets paving	148 ⁴	-
Cleaning/Solid Waste Disposal	66.5 ⁵	31
Municipal Buildings	36	-
Electricity	56 ⁶	18
SUB-TOTAL, HEADQUARTERS	1,371.5	247
<u>Directorates</u>	5,316.5	901
<u>TOTAL BAB-3</u> ⁷	6,688	1,148

Notes

- (1) Include water main replacements, expansion of water treatment plant, and request for a new pumping station.
- (2) Request went to MODANC for a new pumping station. The approval came in the budget 1980-1981.
- (3) This amount was not really needed now. It was the estimated amount they would have to pay owners to acquire land necessary to enlarge streets. For this purpose the governorate received only L.E.10,000 which was used elsewhere.
- (4) The governorate requested a total of L.E. 3,000,000 and received L.E.400,000. Fayoum city received nothing.
- (5) The purchase of one garbage truck and two motorcycles for Fayoum and the other four markaz was approved.
- (6) For new lines only, serving the villages.
- (7) Including all the directorates.

Source: Department of Planning, Governorate of Fayoum.

Table A-6

Proposed and Approved BAB-3 Capital Appropriations
 City of Beni Suef
 Headquarters Functions
 1977, 1978, 1979 and 1980-81
 (amounts in thousands of pounds)

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Item	1977		1978		1979		1980-81	
	Proposed	Approved	Proposed	Approved	Proposed	Approved	Proposed	Approved
Public Buildings	151	na	36	-	988	16	-	-
Paving of streets	130	na	20	18	200	80	750	126
Housing Units	900	na	1,210	-	550	-	360	-
Projects	400	na	-	-	-	-	-	-
Electricity	360	na	60	7.5	60	14	175	83
Vehicles/Equipment	80	na	123	13	168	-	396	166
Potable Water	1,154	na	120	-	131	300	2,153	684
Sewerage	430	na	426	-	506	-	1,549	320
Planning/Organization	-	na	15	20	30	20	350	20
Public Cleanliness	-	na	-	16	-	14	30	36
City Services (Civil Defence, Fire, Traffic)	-	na	-	-	-	-	-	40
Youth Activities	-	na	-	-	-	-	-	60
Food Sufficiency	-	na	-	-	-	-	-	800
Industry (Mining)	-	na	-	-	-	-	-	-
Transportation & Equipment	-	na	-	-	-	-	-	-
Total: Headquarters Functions	3,605	na	2,010	74.5	2,633	444	5,763	2,335

Source: City of Beni Suef, Budget Officer.

Table A-7
Proposed, Approved, and Expended Appropriations for Capital Purposes
Governorate of Beni-Suef
Headquarters and Directorate Functions
1977, 1978, 1979, and 1980-81

(amounts in thousands of pounds)

Item	1977			1978			1979			1980-81	
	Prop.	Appvd.	Expend.	Prop.	Appvd.	Expend.	Prop.	Appvd.	Expen.	Prop.	Appvd.
Public Buildings	742	-	-	643	10	10	748	28	28	835	na
Paving City Roads	950	25	25	540	25	25	810	262	262	1940	na
Housing Units	395	-	-	990	-	-	750	-	-	2900	na
Projects	-	-	-	-	-	-	-	-	-	-	na
Electricity	325	50	50	241	25	25	270	252	252	412	na
Vehicles/Equipment	131	30	30	215	54	54	150	53	53	185	na
Potable Water	663	(*)	(*)	1000	(*)	(*)	1980	300	300	3875	(*)
Sewerage	280	-	-	801	-	-	756	-	-	1298	na
Planning/Organization	367	14	14	263	20	20	320	20	20	806	na
Public Cleanliness	223	57	57	294	51	51	373	47	47	390	na
City Services (Civil Defence, Fire, Traffic)	37	15	15	228	50	50	390	98	98	821	na
Youth Activities	185	7.5	7.5	306	14	14	327	50	50	438	na
Food Sufficiency	-	-	-	-	-	-	-	-	-	1550	na
Industry (Mining)	-	-	-	-	-	-	-	-	-	150	na
Transportation & Equipment	493	-	-	170	-	-	261	150	150	207	na
Total: Headquarters	4791	198.5	198.5	5691	249	249	7135	1260	1260	15807	na

(*) New water treatment plant construction expenditures are spent directly by Cairo and not included in the Headquarters budget.

Source: Governorate of Beni-Suef - Accounting Officer.

Table A-7 (Continued)
 Proposed, Approved, and Expended Appropriations for Capital Purposes
 (BAB-3)
 Governorate of Beni-Suef
 Headquarters and Directorate Functions
 1977, 1978, 1979, and 1980-81

(amounts in thousands of pounds)

Item	1977			1978			1979			1980-81	
	Prop.	Appvd.	Expend.	Prop.	Appvd.	Expend.	Prop.	Appvd.	Expen.	Prop.	Appvd.
<u>Directorates</u>											
Agriculture	-	-	-	-	-	-	-	-	-	-	-
Irrigation-Drainage	1981	na	na	2870	na	na	4120	na	na	na	na
Veterinary	148	na	na	288	na	na	429	na	na	na	na
Housing	1173	na	na	1531	na	na	1890	na	na	na	na
Health	-	-	-	-	-	-	-	-	-	-	-
Education	1094	na	na	1721	na	na	2348	na	na	na	na
Social Affairs	131	na	na	307	na	na	484	na	na	na	na
Supply	-	-	-	-	-	-	-	-	-	-	-
Manpower	-	-	-	-	-	-	-	-	-	-	-
TOTAL FOR BAB-3	9,318	na	na	12,408	na	na	16,406	na	na	na	na

Table A-8

Proposed and Approved Appropriations for BAB-3
Headquarters Functions, Menia Governorate
1980-81

(amounts in thousands of pounds)

	Planned	Approved
ELECTRICAL		
To complete consolidation of networks	400	213
To replace and renew portions of system	150	350
To extend public lighting	300	50
	<u>850</u>	<u>613</u>
TRANSPORTATION		
Pavement of Regional Roads	2,322	700
Pavement of local streets	840	293
Bridge rehabilitation	100	50
Ferries	200	200
Menia Bridge	3,000	-
Equipment	200	-
TOTAL	<u>6,662</u>	<u>1,243</u>
HOUSING	-	600
UTILITIES		
Public Cleanliness	385	130
Planning Organization	290	140
Vehicles	101	80
Public Buildings	374	100
Potable Water Supply	-	2,430
	<u>1,200 *</u>	<u>2,880</u>
SECURITY AND SERVICES		
Fire Protection	207	235
Youth	164	65
	<u>371</u>	<u>300</u>
FOOD SUFFICIENCY (AGRICULTURE)		
Livestock	694	55
Poultry	2,206	265
Fisheries	65	15
Other	389	-
	<u>3,354</u>	<u>335</u>
TOTAL	12,387	5,371

* In many cases the details do not add to totals in the original sheets presented to the study team. No attempt was made to modify it.

In general, however, for public utilities such as water and waste water, it appears that only expenditures for replacement or upgrading of extension of the networks are expected to be included in the headquarters budget.

It was stated that the decision to include these projects in the headquarters budget instead of having them handled entirely by the Ministry will depend upon the judgment made in Cairo as to the ability (in terms of engineering and management expertise) of the local unit where the project is to be implemented. For example, in the case of the approved BAB-3 budget for Menia in 1980-1981, a large appropriation of L.E. 2,430,000 was included in the headquarters budget for water works although an amount of L.E. 5,000,000 was requested for that purpose by the directorate of housing.

Concerning roads, only repairs and upgrading of city streets would be ordinarily included in the headquarters budget (however, it is noted that in the case of the 1980-1981 BAB-3 proposed budget for Menia Governorate funds were requested for a section of the alternate Cairo/Aswan Highway on the east side of the Nile as well as funds for the high bridge at Menia over the Nile). Beyond the regularly budgeted BAB-3 funds for roads within the governorate, a special fund is maintained at the national level from proceeds of the 2 piaster/liter gasoline tax. Moneys from this fund are distributed among the governorates for the expressed purpose of building of new roads between villages that have elected council and the nearest main road. The fund is managed in a general sense by the Ministry of Transportation-- however, the transportation officials of the governorate appear to have a wide latitude in the application of the funds within the governorate. The Transport Authority is responsible for the main Cairo/Aswan Highway.

Electricity is controlled by a regional organization that purchases power wholesale from the national government at its substations. From these substations, the regional electrical organization (economic organization) distributes power to local units, provides maintenance and installation of services and in some instances it makes arrangements with the local governmental units to collect fees for electricity.

The other public services within the governorate and/or local units, e.g. street cleaning and solid waste disposal, equipment and vehicles, social welfare, maintenance of public buildings, fire protection and traffic control, are provided from a national pool which is distributed by the governors among themselves.

Conclusions

Many of these deficiencies in planning arise from the absence of management information systems at the local level, so essential to the proper planning and administration of the functions of local government that are dependent upon physical infrastructure. Most of the complex elements of design are assigned to the central ministries or specialized agencies in Cairo. Operating officials are frequently amazingly able to keep the system in good operating condition; however, their expertise is likely to be more mechanical than in the planning evaluation aspects of administration. Even so, this expertise seems to be little utilized in the planning and design process.

With a good management information system, the local jurisdiction would be able to develop a long-term comprehensive operating plan and program for the performance of the required services as well as a long-term physical development program under which the community would expect to build and/or complete the needed infrastructure. The GOPP is attempting to develop comprehensive physical development plans for Menia and Beni Suef.¹⁰ In Fayoum a comprehensive plan is being developed under contract with the University of Cairo. These are useful services; however, there is little evidence that a local capability is being developed to help work out the means of execution of the proposed comprehensive physical development plan or to make adjustments in the schedules for execution due to unforeseen developments.*

Until and unless a new approach to planning is achieved at the local level and the planning officers are appropriately qualified for the tasks implicit in their job titles, it is likely that both the five-year planning and the annual planning processes will be little more than unproductive paper exercises--of limited utility at decision-making levels in Cairo.

A more fundamental problem arises in connection with the duality of the process of planning at the governorate and local unit levels. With the officials responsible for delivery of most local services having heavy responsibilities to their counterparts in the Cairo ministries, the ability of any local planning process to coordinate these largely independent operations is limited. It happens only when the governor is very powerful politically and is able by the force of his personality and political position to enforce coordination.¹¹ Within the present framework, there is insufficient reward for him to risk the full use of his authority upon this course.

¹⁰General Organization for physical planning, a unit of the Ministry of Housing and Reconstruction.

* Experience in cities of this size in the United States has generally shown that plans performed by senior governments or consultants achieve viability only when there is a local staff participating in a genuine manner in the preparation of the plan and with competence to maintain it on an up dated basis, moreover, the deeper the political and community commitment, the greater the likelihood it will become a reality. Otherwise it is a flash-in-the-pan and quickly become a dusty bookshelf items.

¹¹ It is axiomatic that coordination can occur in two ways: (1) through the exercise of power by a superior over subordinates or (2) by cooperation. In the first case the superior must have broad power and be willing to use it. Either the absence of the power or failure to use it continuously, brings one to coordination through cooperation. In government one can rely upon cooperation only to the extent of the lowest common denominator of the Agencies involved (and often of the principal personnel of those agencies) assigned to working out a common plan and program. In as much as that level produces only unsatisfactory levels of coordination in planning, the availability and constructive use of power is a sine-qua-non of meaningful planning.

PART C
BUDGETING FOR REVENUES AND EXPENDITURES

PART C
BUDGETING FOR REVENUES AND EXPENDITURES

The operating budget system of the governorates and the subsidiary local governmental units consist of two wholly uncoordinated elements: (1) revenues and (2) expenditures. Each of these is discussed below.

C-1. THE BUDGET OF REVENUES

The revenues of the governorate and its local units are collected at the local level, under laws and directives that have been enacted by the central government (e.g. Law 43 of 1979) and are presented in Exhibit A-2 of this Appendix. Some of the revenues are credited to the village councils, some to the markaz, some to the cities and some to the governorate.

For reasons not clearly stated in the law, some of these revenues are credited to BAB-1 (personal services category) and some to BAB-2 (operating expense category) of the governorate and its local units, and some minimal amounts for BAB-3 (capital outlays). None of these aspects of revenue allocation and accounting have any logical reason for existence at the local level inasmuch as all of the moneys collected are deposited in the revenue accounts of the central government and there appears to be no direct relationship between (a) the proposed revenue and the proposed expenditures or (b) the approved revenues and the approved expenditure authorizations or actual minimum and actual expenditures at the various local governments.¹² Even though some records show revenues as a part of the system of financing expenditures, this appears to be strictly on an accounting entry basis--not an element of de-facto budgeting. Revenue collection is by employees of the governorate or its local units but is closely supervised by the chief financial officer of the governorate, representing the Ministry of Finance in Cairo.

The system followed here is not one of deficit financing, i.e., of supplying subsidies which will be taken together with revenues locally generated to finance the expenditures for the year. Rather, expenditures are financed for BAB-1, BAB-2, and BAB-3 by full (100percent) grants from the central government.

By law there is no way for the local governments to change the structure of the tax-based revenues or to find a way in which they may independently increase the amount of money available to them for financing of local needs.

¹² At the national level there is, of course, a significant relationship between (a) the revenues generated through the locally collected taxes and other revenues for BAB-1, BAB-2 and BAB-3, and (b) the aggregate amounts of moneys to be made available to all local governments in Egypt. Obviously money not produced from these locally administered sources of revenue must come from other sources upon which there is always greater demands than resources. Doubtless the net demand by local governments upon the non-local revenues helps to influence the aggregate amounts of appropriations for local governments. On the other hand, we have found no evidence that there is any substantive relationship between the revenues produced from these accounts within a governorate and its local units and the approved expenditure authorizations for such governorate and its local units.

The only exception to this generalization is in the case of the "Special Accounts" of the local units of the government and for the governorate itself (See page A-33 of this Appendix)

A few kinds of special fees may be imposed at the discription of the elected councils of all units of the governorate and are credited to these accounts which are managed by the executive councils with a varying accounts of flexibility in the use of the funds. These special accounts are the only elements of the budget where the right to incur expenditures is contingent upon the local revenues generated. They constitute the only source of funds that would allow local units to execute projects of their own and to have full responsibility for planning, execution and management.

For some "governorate" revenues, there is a responsibility for local collection but they do not have the primary incentive for the local units to collect taxes and other income efficiently, i.e. direct financing of their own budgets. During the budget cycle, the local units offer preliminary estimates of the amounts to be raised and the Ministry of Finance responds by establishing an approved target for collection. The method of determining these targets is unclear; however, it is reported that lively arguments are frequent between the local unit collection departments and the finance officers, as to what amount should be expected to be collected. From different explanations, the following scenario seems to operate :

Assume that the maximum amount of taxes levied under a given law for the year is 1,000,000 LE. Experience over the years may have indicated that the average amount of collection feasible within the year, when due, is 97 percent, or 970,000 LE.

In addition, experience of the past years indicate that total collections of delinquent taxes in the category will average 2 percent of the current levy. Therefore the total estimated collection for the year from this tax source would amount to 990,000 LE. 13

Table A-9 shows the budgeted and collected revenues for BAB-1 for Menia for the years 1977 and 1978. In this case, the amount approved for 1978 (LE. 2,381,000) is about 10 percent greater than the amount collected in 1977 (LE 2,155,000). However, the actual amount collected in 1978 was in fact 6 percent greater than the finance ministry approval, probably due to the larger than expected amount received from delinquent accounts. Table A-10 shows a comparison between the proposed, the approved and the actual collections for BAB-1 and BAB-2 for the City of Beni Suef for the year 1977, 1978 and 1979 and the 1980-81 estimated amounts.

13 It is possible that there is an incentive scheme for tax collections of 3% of excess collection over the amount approved by the Ministry of Finance. This incentive may be shared between the tax collector and the local unit. This was mentioned in Beni Suef but could not be verified. Also Law 43 of 1979 mentions that 50% of the excess amount of collected taxes over approved taxes goes to the special account of the Governorate.

Table A-9

Governorate of Menia
BAB-1 Revenue Receipts
Actual 1977 and 1978 and Official Estimate for 1978
(amounts in thousands of pounds)

Item	Actual Collect- ions 1977	Ministry Finance Approval for 1978	Actual Collect- ions 1978	Collections as a Percent of Finance Ministry Approval
Land tax	1,127	1,035	1,140	110
Building tax	21	27	23	85
Entertainment tax	13	13	14	107
Motor License tax	321	330	371	112
Share of common revenue	3	20	26	130
Share of common pool*	670	956	956	100
TOTAL	2,155	2,381	2,530	106

Source: Governorate of Menia, Finance Officer.

A review of Table A-10 shows that for BAB-1 revenues there have been some considerable differences between the approved and the collected amounts, however, these differences were within the range of normal expectations. On the other hand, the differences between the proposed amounts, the approved amounts and the actual amounts in BAB-2 are so great that they are difficult to understand. Thus, in the case of water revenues for 1978 proposed amounts were LE. 61,000 but receipts proved to be about LE. 94,000. somewhat similar differences are observed in other years in relation to water revenues. In like manner in the case of electricity receipts for 1977 and 1978 exceeded estimates. (For 1979 responsibility was shifted away from the city and the collections apparently represent only the final clearance of accounts receivable). In other areas experience varies, however, it seems that the process of estimating of revenues falls substantially below the level that would be necessary in tightly managed affairs. From Table A-10, Beni Suef with a population of about 129,000 in 1979 had tax revenues of only 18 piasters per capita, representing 1/10th of 1 percent of an estimated LE. income per capita. Total revenues, tax and non-tax (excluding electric revenues) were 1.73 LE./capita.

* Primarily selected customs duties.

Table A-10
Proposed, Approved, and Actual Revenue Collections
Beni Suef City
1977, 1978, 1979 and 1980-81

(Amounts in pounds)

Item	1977			1978			1979			1980-81	
	Prop.	Approved	Actual	Prop.	Approved	Actual	Prop.	Approved	Actual	Prop.	Approved
BAB-1											
1- Taxes on Agriculture land	na	6000	5198	na	6375	5699	na	6375	7279	na	6750
2- Taxes on Houses	na	12000	15834	na	15000	13087	na	17200	15630	na	17000
3- Taxes on Cinemas, Theatres	na	2000	500	na	1400	275	na	1500	797	na	500
TOTAL BAB (1)		20000	21532		22775	19061		25075	23706		24250
BAB-2											
1- Water Revenues	56500	61000	79639	61000	66500	84272	52000	82700	95489	65000	91035
2- Electricity Revenues	115000	128000	155335	130000	154500	194540	130000	na	23340	na	na
3- Sewerage, Sanitary, Drainage Rev.	1300	1300	1643	1300	1300	950	1300	1825	1584	1050	2210
4- Economy Housing Revenues	53000	53500	56157	55436	60600	71347	60600	na	47622	na	57170
5- Industrial Shops Fees	1600	1510	4319	2000	2700	5018	2000	3360	4873	4000	4200
6- Commercial Shops Fees	5100	5200	8413	5500	6800	8120	4500	8510	7672	8000	9070
7- Cars, Bicycles, Dragging Animal Fees	270	290	1854	400	1500	1953	1500	1500	1439	1500	3215
8- Boats, Ferry Boats Fees	660	1800	2060	1800	2000	1101	1500	2000	970	1200	1428
9- Slaughter house fees	3500	3900	2845	3900	3900	2993	3000	4500	3452	3000	3300
10- Building Permits fees	7300	7900	9307	7900	8000	11129	6000	10200	7306	10500	10655
11- Miscellaneous fees (seeds, etc.)	26000	26000	7020	26000	26000	21921	27000	26000	9347	26000	20445
12- Public Market fees.	5025	5025	4225	5025	5025	6134	6825	6840	6875	7500	7300
13- Scrap fees.	16000	26000	19659	30000	35500	59232	25000	31400	25036	32000	26700
14- Sold land prices.	2500	5000	5457	4000	5000	5232	4000	5000	na	5000	na
15- Quarries Revenues	3300	3300	4896	3000	3300	4997	3300	5300	9188	5000	7000
16- Birth, Death, Certificates fees.	900	900	341	900	900	565	1000	900	2368	600	1120
TOTAL BAB (2)	297955	330725	363170	338161	382525	479504	329525	190035	246563	170350	244848
TOTAL BAB (1)+(2)		350725	384702		405300	498565		215110	270269		269098

Note 1 "Proposed" amounts are estimates by the city officials.
"Approved" amounts are estimates by the Ministry of Finance.

Note 2 A major decrease in BAB-2 actual revenues between 1978 and 1979 may be accounted by the fact that in 1979, a regional Company for Electricity was created and became responsible for the collection of electricity revenues.

Source: Beni-Suef City, Accounting Officer.

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Conclusion

Insofar as the revenues collected at the local level for BAB-1 and BAB-2 are concerned, the present system makes little contribution to effective understanding of the finances of local governments in Egypt.

These act as revenues of the central government. For purposes of convenience their collection is assigned to the individual local governments, except for the shared revenues.

The revenues collected apparently have no relationship to the amounts of expenditure authorizations for individual governorates or their local units--except that a small portion of the excess revenues may be assigned to one of the "special accounts" if collections exceed the official goals established by the Ministry of Finance.

Should Egypt pursue the concept of decentralization in a meaningful manner, it would be appropriate to evaluate the possibility of a comprehensive overhaul of the system under which the central government would provide given levels of subsidies as general support grants, rather than as functional or categorial grants for different types of services or functions, leaving to the local governments power to establish the types of taxation, the kinds of their revenues, and the rates to be imposed for revenues to be available to the local governments from their own sources. In this manner, the local governments could engage in a meaningful degree of local self-government.

This does not constitute a recommendation for action but rather an observation of a potential for more effective decentralization should this be the goal of the Egyptian national government.

C-2 THE BUDGET OF EXPENDITURES

At the outset of this discussion it is appropriate to indicate that budgeting for expenditures for local government is carried out through the use of four "categories" of expense, each which is locally known as a "BAB". The following helps to identify these elements:

BAB-1 Personnel Costs. It includes all payments for base wages as well as increments available as incentive pay (which can run to as much as 100 percent of base pay for some employees). It also includes costs of pensions and other fringe benefits of the workers and seemingly includes limited amounts of travel costs for attendance at professional or other official meetings.

The number of positions in each job category for each unit of government (governorate, down to the last position in each city, markaz, and village council) is controlled through the Ministry of Manpower. No person may be employed except to fill a specifically authorized position.

Given the national policy of providing employment for all graduates of secondary, technical, and university level institutions of learning and the inability to determine the numbers to be available and their allocation it is customary for new assignees to be paid from central government appropriations during the remainders of the fiscal year in which they are employed. As of July 1 of the succeeding fiscal year, their positions are added to the approved list for the government to which they are assigned and adjustments are made in the budget for this category.

BAB-2 Non-Personnel Costs. This portion of the budget is used to pay the non-personnel service elements of the operating cost of the government. These include materials and supplies, contractual services of almost all types for current service and seem also to include some elements of contractual service for repair of streets and other facilities.

It does not include provision for renewal of equipment. In fact the renewal of the inventory of equipment is not actually recognized at any point in the process. Rather, replacement equipment is charged as a capital expense and is included in BAB-3.

BAB-3 Capital Outlays. This category of expense comprehends capital outlays of all types except those financed through BAB-4 (primarily loans and grants) and very small amounts financed from the special accounts of the governorates and subsidiary local government units.

BAB-4 Loans. When the local government is able to develop loans either directly from the central bank or from a foreign source under guarantee from the central bank, the funds are handled through BAB-4.

Beyond the regular accounts, three special accounts are operative in the different local governmental units as follows:

	Gov.	City	Village	Markaz
a. Local Services and Development Account	X	X	X	X
b. Proceeds of Disposed Arable and Reclaimed Land Account	X	-	-	-
c. Financing Economical Housing Projects Account	X	-	-	-

These special accounts are managed solely within local government to which they belong, subject, in the case of the subsidiary local units, to the guidelines provided by the governor as to the proposed expenditure plans.

Headquarters and Ministerial Expenditures

The proposed budget (plan) for expenditures within the governorate are presented in several parts:

1. The Headquarters Budget

For each of the BAB-s there is a series of account relating to the combination of:

- a. The cost of portions of personnel, operating expenses, and capital expenses to be administered by the headquarters staff.
- b. The cost of these kinds of functions carried out within the markaz, cities and village-councils.

The funds relating to the headquarters budget are allocated directly to the governorate in the national accounts. The governor, the executive council and the governorate elected council have significant authority within the line item appropriations to make allocations among the cities, markaz, and village councils from the total amounts available.

2. Directorate Allocations

The following ministries usually have directorates within each governorate:

- a. Education
- b. Health
- c. Housing and Reconstruction
- d. Social Affairs
- e. Supply
- f. Agriculture
- g. Manpower
- h. Roads and Transportation (14)
- i. Youth and Sports (14)

The proposed budget for the governorate includes amounts for each of these directorates. When the budget is approved for their respective ministries and for the headquarters functions of the governorate, the amounts to be allocated to each of the governorates from each of the ministries is not immediately known.

(14) The budget as submitted up to fiscal year 1980-81 included amounts for these two functions as a part of the headquarters group; however, they were changed to the directorate classification following the completion of the budget process for 1980-81

At a date subsequent to the initial notification, the ministries make allocations to the governorates and these are in turn allocated to the headquarters, the cities, markaz, and village councils by the Executive Council. The elected council at the governorate also participates in the allocation process.

3. The Other Ministries and Agencies

The proposed budget normally carries requests for BAB-3 that relate to areas other than those carried by the headquarters and directorates portions of the budget. Thus, in the case of Menia (see Exhibit A-1) for 1980, there were requests for the governorate for capital expenditures for those areas that fell outside the headquarters and directorate groups:

- a. Trade
- b. Electricity
- c. Veterinary
- d. Agriculture reform
- e. Land Reclamation
- f. Irrigation (East and West)
- g. Agricultural Cooperation
- h. Awkaf
- i. El Azhar Institutes
- j. Management Training
- k. Culture
- l. Information
- m. Tourism
- n. Telecommunications
- o. Mines and Quarries
- p. Menia University

A review of these requests shows the relative importance of the three groups as follows:

	LE. 000	Percent
1. For the headquarters group	4,084	2.4
2. For the directorate group	127,297	74.7
3. For the other groups	38,939	22.9
TOTAL	170,321	100.0

This helps to illustrate again the fact that the regular channels of planning and budgeting are effectively touching only a quite small portion of the moneys because so much is budgeted through the ministries and special agencies.

Another view of this situation is afforded by the results observed in the Fayoum Governorate for the years 1978, 1979 and 1980/81, as presented in Table A-11 showing the requested and approved requests for expenditures of all BABs. An examination of this table shows that the approved amounts as a percentage of the proposed amounts vary widely. For BAB-1 a wide disparity exist between proposal and approved amounts among the directorate as well as from year to year in the same directorate. It is difficult to understand how the approved amounts are so low in relation to the requested amounts for headquarters and for the educational functions for 1980-81.

In respect to BAB-2, the relationships are somewhat more difficult to understand in the sense that one would not expect shifts in the magnitude indicated, especially for the headquarters functions. (Some of this may be explained by movement of functions to and from this category).

For BAB-3 the variations for the headquarters group is exceedingly great between the amounts requested and the amounts granted.*

* The absence of any approved authorizations, in the case of the Education Directorate, must be an error in the data reported as must be the entire entry for BAB-3 in the case of housing and for the approved line for agriculture.

Table A-11
Requested and Approved Appropriations for Expenditures

Fayoum Governorate
1978, 1979, and 1980-81

(amounts in thousands of pounds)

Items	BAB-1			BAB-2			BAB-3			BAB-4		
	1978	1979	1980-81	1978	1979	1980-81	1978	1979	1980-81	1978	1979	1980-81
HEADQUARTERS AND LOCAL												
Proposed	2,560	3,205	3,990	1,434	1,421	1,153	6,055	6,688	7,346	86	94	105
Approved	4,007	3,397	2,496	1,007	760	969	518	1,478	4,423	86	78	105
Approved as % of proposed	156.5	106.0	62.6	70.2	53.5	84.0	8.6	24.4	60.2	100.0	76.5	100.0
EDUCATION												
Proposed	6,240	7,411	13,470	900	1,065	1,240	806	2,000	5,063	-	-	-
Approved	6,318	8,011	8,487	572	662	835	368	-	-	-	-	-
Approved as % of proposed	101.3	108.1	63.0	63.6	62.3	67.3	45.7	0	0	-	-	-
HEALTH												
Proposed	2,896	3,270	4,155	1,018	930	328	780	1,450	2,058	-	-	-
Approved	2,604	3,607	4,102	710	813	977	149	228	-	-	-	-
Approved as % of proposed	89.9	110.3	98.7	69.7	87.4	297.9	19.1	15.7	0	-	-	-
HOUSING												
Proposed	181	213	300	20	21	22	-	-	-	-	-	-
Approved	194	210	280	11	12	14	-	-	-	-	-	-
Approved as % of proposed	107.2	98.6	93.3	55.0	57.1	63.6	-	-	-	-	-	-
SOCIAL AFFAIRS												
Proposed	292	315	451	134	114	118	316	126	406	-	-	-
Approved	255	330	460	74	91	127	43	137	-	-	-	-
Approved as % of proposed	87.3	104.8	102.0	55.2	79.8	107.6	13.6	108.7	0	-	-	-
SUPPLY												
Proposed	111	120	150	8	10	18	-	-	-	-	-	-
Approved	212	121	143	5	7	14	-	-	-	-	-	-
Approved as % of proposed	191.0	100.8	95.3	62.5	70.0	77.7	-	-	-	-	-	-

Continued p. A:43

Table A-11 (Continued)
 Requested and Approved Appropriations for Expenditures
 Fayoum Governorate
 1978, 1979, and 1980-81
 (amounts in thousands of pounds)

Items	BAB-1			BAB-2			BAB-3			BAB-4		
	1978	1979	1980-81	1978	1979	1980-81	1978	1979	1980-81	1978	1979	1980-81
AGRICULTURE												
Proposed	1,469	1,896	1,906	100	120	110	1,969	2,220	1,547	-	-	-
Approved	1,480	1,799	1,856	42	49	57	-	-	-	-	-	-
Approved as % of proposed	100.7	94.9	97.4	42.0	42.0	51.8						
MANPOWER												
Proposed	68	57	102	6	7	6	-	-	-	-	-	-
Approved	44	61	71	3.6	4	5	-	27	-	-	-	-
Approved as % of proposed	64.7	107.0	69.6	60.0	57.1	83.3						

Source: Fayoum Governorate, Budget Officer.

PART D
EXECUTION OF BAB - 3

PART D - EXECUTION OF BAB-3

Part B of this Appendix has considered the capital budgeting process through the point at which the BAB-3 budget is approved. This Part D is concerned with the execution of the approved capital budget. 15

The governorates present detailed capital investment plans covering the functions of headquarters, all directorates and the other ministries and independent agencies (not represented in the governorate). 16 The approved budget for the headquarters BAB-3 budget sent to the governor relates only to the headquarters functions. This is communicated to the governor at about the time of the commencement of the fiscal year. The approved amount is largely in lump-sum.

Upon receipt of this allocation the governor works first with governorate officials in determining priorities in the allocation of these funds. Once there is agreement within the administration, the proposed allocation is presented to the governorate elected council which may accept the proposed distribution or may amend it to reflect its own priorities.

The approved distribution is thereupon submitted to the Ministry of Planning. Although the Ministry of Planning has authority to make further adjustments this is not usually done--in recognition of the greater degree of understanding of local priorities by local officials.

This degree of freedom represents one of the most significant step towards decentralization that we have observed in the course of our work on BAB-3. It may, however, produce problems arising from the struggle of central ministries to secure directorate status (rather than headquarters status) within the governorates. By that process, the authority of the governorate to transfer funds from one function to another in the course of the year is lost. Moreover, under the directorate status the central ministries have a greater ability to determine the specific projects to which the BAB-3 moneys shall be allocated.

Upon approval in Cairo of the investment budget allocation made in the governorate, the National Investment Bank directs the Central Bank to deposit one quarter of the total amount approved for the year to the BAB-3 account of the governorate. Thereafter all payments are made by check on that account, signed by the finance officer of the governorate.

¹⁵ Most of this section is based upon a lengthy conversation with the former Director of Investments (BAB-3) of the Ministry of Finance. This official recently transferred to the National Investment Bank with responsibilities for overseeing the elements of project administration assume by that bank under arrangements which began to become effective July 1, 1980.

¹⁶ See Exhibit A at the end of this Appendix.

A quarterly report of expenditures is sent by the governorate to the National Investment Bank and the funds for the next quarter will be released. At any time prior to the end of the fiscal year funds that are not likely to be committed may be transferred to any other BAB-3 item with the authorization of the Ministry of Finance and the National Investment Bank. Any amount not spent at the end of the year can be used in the next fiscal year upon projects already initiated, subject to the approval of the Ministry of Finance and the National Investment Bank.

The National Investment Bank is new. Very little is known at this time about the mode of operations it will eventually install, especially concerning the approval of projects and project follow-up. At this time it is reported to have developed new forms and associated procedures with respect to several aspects of the work although, they seem to be little different from pre-existing processes. It was explained that the National Investment Bank will seek to make the governorates cognizant of the need for having detailed feasibility studies for each project undertaken, however, it is not the plan of the Bank to review each of these feasibility studies.

At this time, the Bank intends to allow a great deal of flexibility at the local level in the administration of the headquarters projects of the governorates. This is confirmed by the report of the president of the elected council in Menia who has initiated a quarterly reporting system from the governorate department of planning and follow-up to help assure that the funds made available are promptly committed for the work included in the approved BAB-3 budget both for headquarters and directorates functions. He stated that he did not want to allow any funds to lapse.

The ability of the governorate officials to monitor the progress in execution of the capital budget is hampered by two factors: (1) the absence of a suitable accounting and management information system which would bring all pertinent factors into bold relief for management, and (2) the degree of reliance which the governorates must place upon central agencies for the execution of the larger and complex capital projects.

Recent years have been characterized by a number of important changes that affect the degree of authority of the governor and elected council in BAB-3 operations, the principal of which are :

1. The shifting of certain potable water supply and new housing from the Ministry of Housing and Reconstruction directorate budget to the Headquarters budget.
2. The shift of the functions of Youth and Transportation from Headquarters to Directorate status.
3. The institution of the new National Investment Bank and the working out of its function and procedures.

These are discussed in the body of the report.

Project Plans and Specifications

Once the fiscal aspects of capital outlay programs have been worked out, one proceeds to the development of plans and specifications for the work to be carried out.

In many of the more routine projects, e.g., the paving of roads, the matter of plans and specifications are of nominal importance. The general patterns of development are well understood by both local government personnel and by such contractors as are assigned work in execution. This observation extends also to housing of the type described elsewhere in this report.

In the case of water and sewer network extensions the central government agencies have developed standard specifications as to types of pipe to be used. Local engineers appear to have ability to plan networks using these standard specifications.

No local consultants who regularly supply architectural and engineering services in the development of plans and specifications have been identified.

PART E
THE ACCOUNTING AND REPORTING SYSTEMS

PART E
THE ACCOUNTING AND REPORTING SYSTEMS

The accounting system for financial operations of the governorate and local units is maintained under the supervision of the chief finance officer of the governorate. He is appointed through joint action of the Ministry of Finance and the governor but is deemed to be a Finance Ministry officer.

1. The General System

The general system of accounting was apparently worked out a number of years ago, with the principal features described in a comprehensive accounting manual prepared by the Ministry of Finance. This manual is in Arabic; only limited portions were translated during this study.

Interviews failed to reflect the availability and use of copies of the accounting manual in the offices of either the governorate or the local units. Moreover, basic changes in the manual are not recorded through amendments widely distributed, e.g. the new cash and accrual systems for BABs 1, 2, and 3.

From information provided, it appears that the accounting system is carried out on a cash basis except in the case of the economic companies in which the governorates and their local units have a financial interest which use accrual and depreciation. The accounting for BAB-1 and BAB-2 expenditures are (commencing in 1980-81) on a cash basis; for BAB-3 same elements of accrual accounting is now being used.

The budgeting and subsequent reporting of finances appears to be carried out by means of fairly widely used standardized forms; however, in a number of instances it was noted that the financial reporting is done through original manuscript of both the form and content of the report.

2. Revenue Accounting

As has been explained in Part C there is a complete separation in BAB-1, BAB-2, and BAB-3 between the revenues collected at the local level and the financing of the expenditures in these BABs. The revenues are for the account of the central government. Local tax collectors and other personnel collect the funds, allocate them to the BABs according to law (Law No. 43 of 1979); and make deposits to appropriate accounts in the local branch of the Central Bank of Egypt to the credit of the central government.

Some reports show the grants from the central government on a net, rather than gross, basis by showing an amount for local revenues credited to the BAB and an amount for grant equal to the difference between the sum of these locally collected revenues and the total expenditures being financed. This, however, is misleading in the sense that there is no relationship between the amounts collected and the amounts available for expenditure.

To refer to these locally collected amounts (and to certain allocations of customs and other common pool revenues to governorates and local units) as "local" revenue is a misnomer. The expenditures in BAB-1, BAB-2, and BAB-3 by grants are financed from the central government. Of course, the net demand on the national treasury is the difference between money expended for governorate and local unit purposes less the aggregate money collected and remitted by all governorates and local units. The extent to which the gross amounts of these revenues from all local governments influences the gross amounts available for all local expenses is not known.

3. Expenditure Accounting

It is stated that the central government quarterly provides advances of funds to the governorates and local units with the amounts being one-fourth of the annual approved appropriations.

Disbursements for payroll are by cash and other disbursements are generally by check. The central bank keeps the local governments informed as to checks that have cleared the bank by providing daily computer printed statements showing the clearances and the balance available.

In the case of BAB-3 expenditures, a new system was enacted into law as of July 1, 1980. The system is not yet fully in effect; however, the basic outlines are now well understood. These involves deposit in the account of the governorate and local units on a quarterly basis of one-fourth of the approved amounts for headquarters and directorate funds. Expenditures are made against these funds in pursuit of the approved BAB-3 budgets. Funds which are not expended within the fiscal year may be carried over for use for the same projects in the succeeding year, provided that the unit of government has set forth satisfactory reasons for not spending the money and evidence that the causes of delay have been overcome. Otherwise, the National Investment Bank can cancel the appropriations at the end of the fiscal year.

In the handling of cash, reconciliations between bank statements and books of account are done manually on a monthly basis by the accounting departments of the governorate or its local units.

4. Reporting

No evidence of financial reports issued to the Public by local governorate has been found. A rather voluminous report is sent to the Ministry of Finance setting forth the results of financial operations on a monthly basis--both as to revenues collected locally and as to expenditures. Comparisons are made with the approved budget (i.e., the originally approved budget adjusted for any amendments made to the end of the reporting period). Final accounts are also prepared after the close of the fiscal year. These summarize the financial operations against the budgetary allotments and also make provision for a statement of unpaid obligations which are to be paid from the appropriations of the succeeding fiscal year.¹⁷

In table A-12 comparisons are made between the proposed, approved, and expended appropriations for BAB-1 for Beni Suef governorate for the years 1977, 1978 and 1979. Table A-13 makes a similar comparison for BAB-2.

¹⁷ Copies of the actual reports reflecting monthly operations could not be obtained nor was it possible to test fully the timeliness of their submission. Copies of some annual reports were obtained. Generally the accounting officers reported that these accounting data are "confidential" and not available for examination by outsiders. For every governorate, these reports are filed at the Ministry of Finance.

Table A-12
Proposed, Approved, and Actual BAB-1 Expenditures
Beni Suef Governorate
1977, 1978, and 1979

(Amounts in pounds)

Item	1977			1978			1979		
	Proposed	Approved	Spent	Proposed	Approved	Spent	Proposed	Approved	Spent
1- Headquarter and Local Council									
A- Headquarters	1669593	1430614	1564200	2100153	1487669	2366476	2582729	1630889	2029301
B- Youth Directorate	58400	34380	*	38640	40175	*	40550	52245	*
C- Real Estate Tax Collection	15875	11240	*	15625	14070	*	16080	14270	*
D- Local Elected Council	88880	40832	*	111952	41007	*	84042	38812	*
E- Organization, Administration Directorate	69300		*	56000	5275	*	56000	3635	*
SUB-TOTAL	1902048	1517066	1564200	2322370	1588196	2366476	2779401	1739851	2029301
2- Education.	1182245	487270	467546	1312440	556480	535531	1397260	644180	625634
3- Health.	700000	577000	638062	800000	756000	732626	921600	881000	897088
4- Housing and Reconstruction	38025	25820	23582	59435	26660	23082	62895	26963	24310
5- Social Affairs.	932400	105552	105334	1410558	86852	85999	134240	97555	96339
6- Supply.	8360	4930	5581	9180	5810	5252	7850	6480	6312
7- Agriculture.	44098	30170	30048	98890	37082	34046	75915	45278	43726
8- Manpower	5210	3065	2912	4315	3470	3205	4630	5614	5498
TOTAL	4812386	2750872	2837265	6017188	3060550	3786217	5383791	3441092	3728208

* Reporting of expenditures is on a consolidated basis entered under "headquarters."

Source: Beni Suef Governorate, Accounting Officer.

Table A-13

Proposed and Approved Budgets and Actual Expenditures for BAB-2
Beni Suef Governorate
1977, 1978, and 1979

(Amounts in pounds)

Items	1977			1978			1979		
	Proposed	Approved	Spent	Proposed	Approved	Spent	Proposed	Approved	Spent
1- Headquarter & Local Council									
A- Headquarters	2109915	1946205	2205498	2302299	2233408	2654560	2639153	3027344	3416107
B- Youth Directorate	96317	82200	*	97709	91029	*	123631	141913	*
C- Real Estate Tax Collections	258259	249700	*	288432	28706	*	328426	339837	*
D- Local Elected Councils	39070	7895	*	16798	17895	*	11595	8110	*
E- Organization, Administration Directorate	95123		*	120066	500	*	119704	500	*
SUB-Total	2598684	2286000	2205498	2825304	2371538	2654560	3222509	3517704	3416107
2- Education.	7024536	5805000	5300400	6955452	6498000	6555810	7992252	8584000	8715517
3- Health.	2370067	2052000	1940372	2950000	2657000	2296495	319000	341000	311143
4- Housing and Reconstruction	250000	249100	204904	282492	302432	242612	3400000	3511000	2782490
5- Social Affairs	254911	266000	255301	344613	325000	293440	449576	429000	404917
6- Supply	97895	95000	76998	119000	121000	104312	142000	170000	143955
7- Agriculture	225615	784000	748305	1154542	1208500	1208864	1760000	1550000	1674316
8- Manpower	70773	65000	60611	110363	68000	71003	100933	96584	87755
TOTAL	12892481	11602100	10792389	14741766	13551470	13427096	17386270	18199288	17536200

* Reporting of expenditures is on a consolidated basis entered under "headquarters."

Source: Beni Suef Governorate, Accounting Officer.

In respect to BAB-1 as reflected in Table A-12, expenditures for the headquarters group were substantially greater than the approved budget in each of the three years. For 1978, the over-expenditure was almost one-fifth greater than the approved authorizations. A somewhat similar pattern is evident for 1979. In like manner, but to much lesser degree, some of the directorates also over-expended their approved budgets.

A study of Table A-13 shows substantial differences at the headquarters level between the approved and expended amounts for BAB-2. Similar kinds of differences are noted in other elements of the BAB-1 expenditures. It is noted that in the aggregate for 1977 the expenditures was LE. 10.8 million compared to approved budget of LE. 11.6 million but in 1978 expenditures exceeded appropriations by more than 10 percent. Again in 1979 total expenses were significantly greater than approved amount. It is not known the extent to which expenditures in excess of authorizations for the directorates require formal budgetary amendment.

Such patterns of actual expense in relation to the originally approved budgets raise serious questions as to the degree of effectiveness of the budgetary process, especially the capacity of the budget to control expenditures. (It was not within the scope of this undertaking to pursue this topic further. However, effective budgetary operations would require a very careful evaluation of these control procedures).

5. Capital Asset Accounting.

Until 1973 no effort was made to maintain any comprehensive continuing record of capital assets. At that time a system was introduced¹⁸ which required the recording of capital assets owned as of the commencement of the program and adjustments to the account for subsequent acquisitions and dispositions since its inauguration. Conversation with local accounting officers suggest that there has been substantial difficulty in maintaining a complete record, due in part to failure to report the retirement of certain types of movable assets.¹⁹

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The principal rules issued in 1974 in the Accounting Manual relating to capital asset accounting may be summarized as follows :

- a. Assets are classified into 5 general accounts :
 - Land
 - Buildings, Constructions, and Utilities
 - Machinery and Equipment
 - Means of Transport.
 - Furniture and Office Equipment

- b. The actual acquisition cost of each asset is debited in the accounting books of the governmental units to the class of asset acquired, and credited to the General Account entitled: "Public Fund Represented by Fixed Assets." Every entry is required to be supported by the proper documents.

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See note p. A:46

- c. In addition to the above mentioned classes of fixed assets, an account for "Projects under Implementation" is to be maintained in the books of each governmental unit for fixed assets under construction. Advance payments for the construction of such assets are debited to this account and credited to "Public Funds represented by Fixed Assets." On the date of completion, the costs thus charged are allocated to the five classes of fixed assets. The allocated cost is debited to each class of assets respectively, and the total is credited to the account for "Projects under Implementation."
- d. Balances of fixed assets accounts are reported in the monthly statements (No. 75). End-of-Year balances are reported in the annual report to the Department of Final Account (Ministry of Finance).
- e. End-of-Year balances are carried forward to the following year so that the cost of such assets may be followed continuously.
- f. Accounting rules indicated in "Financial Instructions" are applied in cases of disposal of a fixed asset through sale, transfer, retirement, or scrapping. An entry in the accounting books is made whereby the account "Public Funds Represented by Fixed Assets " is debited and the class of fixed assets is credited.
- g. Capital expenditures are distinguished from current expenditures pertaining to these assets. The former are debited to the fixed asset account since they increase the value of the asset. The latter are treated as current expenses since they only aim at maintaining the productive capacity of these assets.

In neither Egypt nor the U.S.A. do local governments ordinarily make provision for depreciation of capital assets acquired from the general funds of the government. (See, for example, National Council on Governmental Accounting, Governmental Accounting, Auditing, and Financial Reporting, 1968, and the new edition being released early in 1971 in the United States.)

Egypt does not yet utilize the concept of "fund accounting" that is prevalent in local governments in the United States. Under that concept, governmental enterprises are increasingly taking depreciation into account as an element of expense and reflecting net asset values of capital assets in the balance sheets of such utility and other enterprise operations. In Egypt, depreciation is being taken into account in some of the economic development undertakings of the governorates and municipalities; however, these operations have been outside the scope of this undertaking and we have made no attempt to become well informed concerning such operations.

6. Auditing

No evidence has been observed indicating any independent auditing of the accounts of the governorate or local units.

7. Cost and Performance Accounting

There appears no cost accounting system. For example, it is not possible to determine the cost of providing water services in those communities having public potable water supply. None of the elements of accounting procedures required to achieve such a result are in force. The expenses for manpower are recorded under BAB-1 but they are recorded in a manner that one would have to study many of the individual accounts in order to identify personnel costs associated with potable water supply. In like manner, the costs of power and for supplies are recorded in headquarters BAB-2 but the amounts used for water treatment are not separately identified.

Given the absence of depreciation accounting and the fact that many replacement items are now recorded as additional capital assets seemingly without the proper system of retirement of assets, it is also not feasible to ascertain the capital component of annual costs of providing water. Under these circumstances, there is no effort to attempt to balance water charges with costs of providing water. No attempt is made to increase efficiency through well maintained metering of water use; through the stoppage of leaks and breaks; or through the search for a better balance between installed filtration capacity, filtered water storage, pumping capacity, and demands for potable water.

Conclusions as to Accounting

The present accounting system is probably sufficient to control or reveal speculation. It provides a part of the base required to relate expenditures to approved budget authorizations.

The absence of cost accounting and the failure to use governmental enterprise accounts for public utilities and other revenue producing operations of the government (except for economic enterprises) deprives managers and other interested persons of much potential financial information.

It is axiomatic that the maintenance of accounts on a manual basis greatly limits the degree of flexibility needed in order to offer accounting and related information as effective parts of management information systems. Moreover, the use of information for management purposes is usually closely associated with its timeliness, i.e., unless the information is available both frequently and promptly after the close of the accounting period, it serves little purpose beyond providing an historical record.

Finally, if there is to be a high degree of responsible decentralization of governmental operations to the local governments, it is a concomitant fact that an informed electorate is a requisite. Among the matters upon which the electorate needs to be informed are those of public finance and the results of financial operations. Inasmuch as there is apparently no current system in effect for such reporting at the local level to the citizens of the community, a considerable change in both practice and viewpoints is required--especially in view of the attitude frequently encountered in our field work to the effect that routine financial records are somehow "confidential".

EXHIBIT A-1

Exhibit A-1

BAB-3 Capital Outlay Authorizations Requested for 1980
Menia Governorate

Summary

	Amounts ⁽¹⁾ LE 000	Percentage
1. <u>The Headquarters Budget</u>		
Food Sufficiency	3,354	
Electricity	850	
Public Utilities	1,200	
Services (2)	380	
Research and Studies for Investment	<u>300</u>	
	4,084	2.4
2. <u>The Directorates</u>		
Education	4,226.1	
Health	5,853	
Housing	101,711	
Social Affairs	630	
Supply	600	
Agriculture	7,041	
Manpower	70.5	
Roads and Transportation (3)	7,002	
Youth (2)	<u>164</u>	
	127,297.6	74.7
3. <u>Other Ministries and Independent Agencies</u>		
Electricity	1,750	
Trade	270	
Veternary	2,254	
Agricultural Reform	439	
Land Reclamation	8,000	
Irrigation (East and West)	1,008	
Drainage of Agricultural Lands	13,050	
Agricultural Cooperation	86.5	
Awkaf	213	
El Azhar Institutes	1,763	
Management Training	162	
Culture	1,194	
Information	330	
Tourism	2,135	
Telecommunications	490	
Mines and Quarries	500	
Menia University	<u>5,295</u>	
	38,939.5	22.9
TOTAL	<u>170,321.1</u>	100.0

- (1) In many cases the details do not add to totals. The difference are generally insignificant; they are due to illegible copy in some instances.
- (2) The Youth services item was originally budgeted under Headquarters; however, it has not been transferred to a directorate status.
- (3) The Roads and Transportation item was also originally budgeted under Headquarters but it has been transferred to directorate status.
- (4) In addition to these requests, the Governorate requested LE. 6,977,000 for the Sugar Company equipment and for Bus transportation in Minia.

BAB-3 Capital Outlay Authorizations Requested for 1980
Minia Governorate

Summary

	Amounts ⁽¹⁾ LE 000	Percentage
<u>1. The Headquarters Budget</u>		
Food Sufficiency	3,354	
Electricity	850	
Public Utilities	1,200	
Services (2)	380	
Research and Studies for Investment	<u>300</u>	
	4,084	2.4
<u>2. The Directorates</u>		
Education	4,226.1	
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Veterinary	2,254	
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El Azhar Institutes	1,763	
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Telecommunications	490	
Mines and Quarries	500	
Minia University	<u>5,295</u>	
	38,939.5	22.9
TOTAL	<u>170,321.1</u> ⁽⁴⁾	100.0

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(4) In addition to these requests, the Governorate requested LE. 6,977,000 for the Sugar Company equipment and for Bus transportation in Minia.

Exhibit A-1

BAB-3 Capital Outlay Authorizations Requested for 1980
Menia Governorate

Part 1: Details for Headquarters.

Food Sufficiency

Livestock fattening	694	
Poultry breeding	2,256	
Hatcheries for carp	65	
Agricultural mechanization	219	
10 minibuses	70	
5 blocks for village workers	<u>100</u>	3,354

Electricity

Consolidation of nets in governorate towns	400	
Replacement and renewal of nets and equipment	155	
Extend light networks to deprived areas and new housing expansions in the governorate towns	<u>300</u>	850

Public Utilities

Planning and Organization

Complete mapping of Mowas Mutai	80	
Compensation for property taken in nine towns	150	
Parks and beautification of governorate towns	60	

Municipal Establishments

Erect rooms and stores for staff in towns	60	
16 headquarters for local units in villages	90	
Governorate local council building	50	
3 markets in governorate towns	60	
Expansion and renewal of slaughter houses	60	
3 water closets in towns	24	
10 water closets in non-governmental mosques	30	

Vehicles

7 pickup cars for traffic headquarters	35	
Dump truck lorries for towns	60	
2 cars for meat transport	20	
2 minibuses for headquarters and real estate tax collectors	16	
20 motorcycles for towns, villages and governorate	10	

Public Cleanliness

5 suction pumps for towns	80	
6 tractors for water tanks and sprinkling	40	
6 liter trucks	80	
12 agricultural tractors for sewage and litter collection in towns	60	
60 suction units for picking up sewage in towns	<u>120</u>	1,200

Exhibit A-1

BAB-3 Capital Outlay Authorizations Requested for 1980
Menia Governorate

Part 1: Details for Headquarters (Cont'd)

Social Services Sector

Fire Protection

Erection of 2 extinguishing substations north and south Menia	40
Erection of 2 substations in governorate towns	30
Fire engines	100
Purchase equipment for river rescue	5
Erect 80 fire stations in towns and villages	13

Traffic

Erect new traffic building in Menia	30
Renew two traffic cabins Aswan Road	10
Purchase middle range wireless sets	20
Light signals for Menia and Malawi	2
Supply cars and motorcycles	5
Erect high towers in Menia	1

Urban Development

Complete urban development projects	50
Erect kindergarden for 100 children Menia	15
Erect private Islamic school north of Menia	20
Erect girls working place in Tato El Saba	20

Total Social Services Sector	380
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<u>Research and Studies for Investment</u>	300
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TOTAL FOR HEADQUARTERS	4,084
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Exhibit A-1

BAB-3 Capital Outlay Authorizations Requested for 1980
Menia Governorate

Details for Directorate Requests

Education

Replacement projects

480 classrooms, elementary	1,440
60 classrooms, preparatory education	170

New Projects

603 classrooms, elementary	1,356
170 preparatory classrooms	508.5
208 secondary classrooms	620.6

New Educational Projects

Purchase educational aids for educational directors in province	20
Purchase language laboratory sets for 20 secondary schools	20
Purchase transport means for department and directorate	91
	<hr/>
	4,226.1

Health

Public Replacement Projects

Hospital at Menia	3,100
Equip 5 Malaria stations	30
Complete Betharan project hospital	170
Erect pavillion at Samalout central hospital	150
Equip dental clinic and laboratory in Marghaeha hospital	5
Erect and equip the Dir Muas chest hospital	50
Equip head the group for dental units	3
Equip cardiovascular intensive care unit in public hospitals	200
55 health group to village hospitals	550
Erect and equip 136 health units	953
Erect houses for countryside doctors in 25 groups	100
Erect 3 doctors centers in Mati Meni Mazar	150
??	392
	<hr/>
	5,853

Exhibit A-1

Housing and Reconstruction

<u>Housing Projects</u>		
To erect 50 blocs of housing in governorate each with 26 units consisting of 2 rooms and hall	4,300	
<u>Sanitary Sewers</u>		
To complete Menia sewerage projects	560	
To erect sewage and sanitary drainage in El Federia town	2,000	
<u>Portable Water</u>		
Projects in towns to replace and renew potable water supply in 9 towns, variously priced	2,415	
Countryside potable water projects: Separate projects for each of 9 districts	2,726	
<u>Government buildings and equipment</u>		
Erect comples for governmental departments	500	
Erect 2 centers for maintenance in Samalout and El Federia	60	
Pickup trucks, lorry, and crane	50	
<u>Industrial Development</u>		
Erect cement factory in Beni Khaled/Samalout	80,000	
Erect sand brick factory	600	
<u>New East Menia City</u>		
Erect new city for residential purposes east of Nile	8,500	
	<hr/>	101,711
<u>Social Affairs</u>		
Complete children dwelling building	100	
Repair and maintain village unit buildings	60	
Erect social unit buildings to replace rented buildings	220	
Consolidate vocational formation in Taba	20	
Consolidate vocational training centers	30	
Various smaller projects for kindergardens, social village facilities, vocational formation centers, offices for family size, furnish social departments, and purchase vehicles	200	
	<hr/>	630
<u>Supply</u>		
Storing and cooling frigid capacity	500	
Ice factories in the governorate	100	
	<hr/>	600

Exhibit A-1

Agriculture

To complete buildings for agriculture in separate directorates	96	
To complete maintenance workshops	48	
To consolidate transportation means through purchase of motorcycles	316	
To construct 66 agricultural buildings	1,308	
To establish fish farms	65	
To establish shops and equipment therefor	141	
To establish hatchery stations	162	
To establishing supply stations	122	
To equip incubators and transport means	1,059	
To equip buildings and workshops	3,046	
To establish agricultural service centers	278	
TOTAL		7,041

Manpower

To complete vocational training project to save technical manpower for local and nation market	34,5	
To purchase 15 motorcycles	12	
To provide for completion of industrial safety unit	21	
To furnish labor zone offices recently completed	3	
TOTAL		70,5

Exhibit A-1

Roads and Transportation

To complete projects underway

Paving of the dusty way between Dir Mwas and Badrman 3 Km length	100
Paving of the dusty way 257 : 3 Kms	100
Paving of the way from Towa to Tahk Council	150
Connect Simalouh and village council 5 kms	122
Complete paving of 242 way	150
Complete 740 way	100
Complete paving dusty way El Adwa and Atef Heider village	100

New Projects

Pave ways 267 and 268	65
Pave way Beni-Mogar to Semel village council	100
Repair and repave Ibrahemia way 28 Km	1,000

Repair and Repave Ways

Melwa to Tona El Babel 4 kms	125
Repair and repave Klesona-Kedakof way 6 Km	100
Repair and repave the Semalout-Shousha way 15 Km	100

Bridges

Rehabilitate 10 bridges in governorate	150
New high bridge over Nile at Menia	3,000

Miscellaneous

To expand and cover the narrow dusty way 20 Kms	300
To pave the governorate towns inner streets 28 Kms	840
To purchase mechanical equipment for maintaining ways	200
To establish two boars and erection of two wharfs in the nearest towns of governorate	200

 7,002
Youth

Rural Youth Centres already started	9
Youth house Menia	77
Menia swimming pool and closed hall	5
Replace rural youth center	32
2 rural youth centers	33
Microbus for youth department	8

 164

TOTAL FOR THE DIRECTORATES

 127,297,6

Exhibit A - 1

BAB-3 Capital Outlay Authorizations Requested for 1980-81

Details for Other Ministries and
Independent AgenciesElectricity

Consolidate the lighted villages	250	
Complete electrification of 60 villages	1,500	
		<u>1,750</u>

Trade

New store to serve Beni Mazar consumers	20	
Sudinaur branch in Mehwa	50	
Branch of wood company	100	
Petroleum warehouse	100	
		<u>270</u>

Veterinary

Completion of establishment of 10 units	20	
Replacement of trucks	48	
Replacement of tools and machines	180	
Erection of 50 veterinary units	1,400	
Center for artificial insemination	500	
Rations for directorate centers	50	
Incubators	16	
Special directorate buildings	40	
		<u>2,254</u>

Agricultural Reform

Completion of hen fattening stations	70	
Behives	10	
Lorries (2)	20	
Buses	5	
Temendi Corporation hatchery	15	
Behives - new	3	
5 lorries	30	
7 buses	16	
Directorate building in Menia and El Molok	125	
5 garages	20	
Cattle fattening station in El Walk	100	
Poultry station	25	
		<u>439</u>

Land Reclamation

(No details provided)		8,000
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Exhibit A-1

Irrigation

Western Menia

To change two bridge coffer	40
To change Sawaki public channels	15
To establish reservoirs	35
To purchase means of transport	15
To supply workshop tools	3
To purchase printing machine	5
To establish a bloc for engineers	85
To establish houses for sailors	15

Eastern Menia

To complete directorate's buildings	28
To establish managers block	46
To complete maintenance workshop and equipment	21
To complete stone heads	20
Replace bridges	60
New gates for channels	25
Buses and lorries	15
Directorates for El Menia Behri Irrigation	50
To establish torrent paths in Dir Moas	526
To divert El Sefsafa channel	10
To establish 35 new bridges	40
To change private sohias	70
To change public channels	32
To change channels in Meliva	25
To establish Melva irrigation engineering building	40
Minor items	80
	<hr/>
	1,088

Drainage of Agricultural Lands

Irrigation projects to complete the change of basic irrigation to permanent one	1,155
Open drains	5,295
Drainage pump stations	800
Tiled drains	5,700
To complete the accomodation building	100
	<hr/>
	13,050

Agricultural Cooperation

To purchase pickup trucks	54
To purchase Volkswagons	10
To purchase 56 motorcycles	22.5
	<hr/>
	86.5

Exhibit A-1

Awkaf

Establish occasion hals in principal mosque	16	
Establish libraries in towns	14	
Increase cars of garage to increase service rates of caravans	13	
Increase number of religious meetings (towns)	4	
Governmental mosques renewal	120	
Renewal of 6 water closets in governmental mosques	46	
	<hr/>	213

El Azhar Institutes

Complete establishment of three institutes	150	
10 elementary institutes for capital and villages	500	
Azhar preparatory institutes	133	
2 secondary institutes for girls in Menia	200	
Azhar secondary institute	100	
Institute for decisions in Menia	100	
Azhar teachers institute (boys) Menia	150	
Boost El Koran keeping officers and generalize them in villages	250	
Establish building for El Azhar education in Menia	180	
	<hr/>	1,763

Management Training

To establish annex to building for survey and properties register in Menia	30	
Survey	10	
To purchase 3 pickup trucks	6	
Management Training center	100	
Cards system for workers	16	
	<hr/>	162

Culture Directorate

Completion of cultural directorate and palace in Menia town	220	
Replacement of cultural houses in several towns	222	
Establish cultural houses (2)	87	
Establish 38 cultural sites to serve 9 villages	600	
Establish specialist center for child culture Menia Boudar	50	
Establish general unprivileged library for perioles culture in Menia Southern	15	
	<hr/>	1,194

Exhibit A-1

Menia Information

Establish information center	160	
Establish information center Mebwa	40	
Establish local broadcasting station for the governmental broadcasting transmission.	100	
Purchase 6 projectors for film showings in capitals of local village units	30	
	<hr/>	330

Tourism

Establish touristic town in Menia	1,200	
Establish motels	700	
Equip Nefertiti Hotel	100	
Establish harbor equipped with benzine, water, electricity station in Menia	5	
Purchase airconditioned bus	30	
Establish harbor equipped with equipment Melwa	50	
Complete El Gabel rest house	50	
	<hr/>	2,135

Telecommunications Authority

Replace 12 Km of consumed cables	100	
Replace columns, wires and others of 10 Km	30	
Installments for the waiting calls	200	
Land cables to increase the governmental capacity with 10 km length	100	
Change nongovernmental offices to governmental centra's besides the scheduled in the Authority plan yearly	4	
To purchase transport means to control work in government centers and to repair defects	32	
To form project team for implement the replacement works and the new lines establishment	24	
	<hr/>	490

Mines and Quarries: To establish factory for marble and limestone 500

Menia University

Completion of educational building, management building, classes unit, amphitheatre unit, laboratory unit	225	
Completion laboratories classes, build 2 blocks for boys and girls	1,230	
Completion of establishment of amphitheatre, laboratories of industries for dairy products, library, and society development	2,240	
Purchase special equipment of students laboratory, central research and educational hospital.	1,300	
Feed the new university with electricity, water sanitary drainage and telephones and also to pave ways	300	5,295
	<hr/>	<hr/>

TOTAL FOR OTHER MINISTRIES AND INDEPENDENT AGENCIES 38,939.5

MENIA GOVERNORATE
BAB-3 1980-81 Proposed

SUGAR COMPANY

Menia cylinders miller	400	
Spare parts for cars and millers	200	
Establish modern factory	1,000	
Mewda miller in Beni-Mazar	60	
Central workshop	70	
Stores for - - and ordinary flour	350	
Silo for wheat	200	
Stone miller in Menia 100 ton/day		
Bakeries	1,600	
Sugar company replacement projects		
Erect steam boiler 50 to-/hour capacity	610	
-----	700	
Replacement of DC with AC	120	
3 tractors for sugar cane transport	270	
Steam boiler with 3000 tons/daily	200	
	<u> </u>	5,780

BUS TRANSPORTATION IN MENIA

Complete workshop and stations Meyhagha	20	
Purchase 33 buses Menia	300	
Purchase 12 buses for Mahwa	70	
8 buses for Beni Mazar	40	
Replace workshop in 3 branches	163	
Purchase 66 buses for 3 branches, Menia, Mehva, Beni-Mazar	624	
	<u> </u>	1,217
		<u> </u>
		6,997

EXHIBIT A-2

Exhibit A-2

Summary Translation of Provisions of Law 43 of 1979,
Relating to Revenues Collected by Local Governments

Article 35

Revenues of governorates consist of the following:

First: Revenues shared by all governorates. These include:

- (a) The share of the Governorate in the tax-supplement imposed on customs duties on imports and exports within its jurisdiction.

The prime minister determines the rate of such tax-supplement within a ceiling of 5% of customs duties.

The Governorate collecting this tax-supplement is entitled to 50% of its proceeds. The remaining 50% is to be deposited in a pool designated "Common Fund."

- (b) The share of the Governorate in the tax-supplements imposed on the original taxes on commercial and industrial profits, and taxes on interest and dividend distribution.

The governor determines the rates of these tax supplements within a ceiling of 5% of the original tax, with the approval of the popular council of the governorate. Rates exceeding 5% should be determined by the council of governors.

The Governorate collecting these tax-supplements is entitled to 50% of its proceeds. The remaining 50% is to be deposited in the pool designated "Common Fund."

The Minister of Local Government distributes the proceeds of the "Common Fund" to the various governorates.

Second: Specific resources of the Governorate which include the following:

- (a) 25% of the original land tax in the Governorate, plus 25% of the tax-supplement which the popular council may impose on the original land tax within its jurisdiction.

The rate of such tax-supplement is to be determined by the governor - after the approval of the popular council-within the ceiling of 5% of the original tax.

The Rates exceeding 5% with a ceiling of 15% are to be determined by the governor after the approval of the council of governors.

- (b) Taxes and fees on car licences, motor-cycles, carriages, bicycles, and other vehicles licensed by the Governorate.

- (c) Return on the investments of the Governorate, and revenues of the utilities administered by the Governorate.
- (d) Other local taxes and fees levied for the benefit of the Governorate.
- (e) Subsidies from the central government.
- (f) Donations, grants, and endowments. Acceptance of such donations, grants, or endowments offered by foreign persons or agencies must be approved by the council of governors.

The popular council of the Governorate distributes a portion of the revenues indicated under "Second"- (a) and (b) to municipalities (cities, markazes, or villages) within the jurisdiction of the governorate in the light of the needs and circumstances of each municipality.

Article 36

The Governorate should establish a special account for the proceeds of arable and reclaimed land disposed of in accordance with Article 28 of this Law. Such proceeds should be allotted to land reclamation throughout the Governorate.

The Governorate should establish another special account for financing economical housing projects throughout the Governorate. This account draws its revenues from the following sources:

- 1) Proceeds of building sites disposed of in accordance with Article 28 of this Law.
- 2) Proceeds from the sale of housing bonds referred to in Articles 4,5, and 6 of Law No. 107-1976 concerning the establishment of "Economical Housing Fund."
- 3) Proceeds in lieu of exemption from the provisions of the building Act No. 106-1976.
- 4) Funds allotted to "economic housing in Governorates" in the agreements approved by the State.
- 5) Loans.
- 6) Donations, grants and endowments.
- 7) Return on the investment of the funds of this special account.
- 8) Fines collected for the violation of Article 21 of the Building Act throughout the Governorate.

Revenues of these two special accounts should be considered as specific resources for the Governorate. The surplus of each account - at the end of each fiscal year - should be carried forward to the following year's budget.

The council of governors sets the rules of administration and the procedures for expenditures of each account. The same council - in collaboration with the minister of insurance - determines the obligation of insurance companies to subscribe toward the housing bonds.

Article 37

The popular council of the Governorate should establish a special account for local services and development.

Resources of this account consist of:-

- 1) Fees imposed by the popular council of the Governorate for the benefit of this account.
- 2) Profits of productive enterprises financed by this account.
- 3) Donations, grants, and endowments which the popular council approves its allotment to this account.
- 4) 50% of the Governorate's local revenues realized in excess of the budget estimate.

Article 38

The resources of the special account for local services and development should be used - in accordance with the decisions of the popular council - for the following purposes:

- 1) Financing local production and service enterprises - according to a local plan - within the framework of the general plan of the State.
- 2) Completion of projects - set forth in the general plan - which the appropriations of the Governorate's budget fall short of completion. This applies to self-initiated projects.
- 3) Raising the standard of local services.
- 4) Financing vital, urgent services.

The governor sets the regulations pertaining to this special account. Funds of this account should be treated as "Public Funds", particularly with respect to the application of the Criminal Law, and in connection with: collection, expenditure, and control.

The surplus of this account should not be transferred to the Treasury (Ministry of Finance).

FINANCIAL RESOURCES OF THE CITY

FINANCIAL RESOURCES OF THE CITY

Article 51

Resources of the city consist of the following:

- First: Original tax on buildings within the jurisdiction of the city, plus the tax - supplements imposed thereon.
- Second: Taxes on entertainment and betting within the jurisdiction of the city.
- Third: 75% of the original land tax within the jurisdiction of the city, plus 75% of the tax-supplement imposed thereon.
- Fourth: Portion of governorate resources allocated to the city by the popular council of the governorate.
- Fifth: Taxes or betterment levies on real-estate which benefitted from area improvement due to development projects and activities, in accordance with the provisions of the appropriate law.
- Sixth: Fees imposed by the popular council of the city - within the frameworks of legislation - on the following:
- 1) Applications for copies of birth certificates.
 - 2) Licenses for the exploration of mines, quarries, and hunting licenses.
 - 3) Fees on the occupation of streets (with building materials, etc..) fees on sanitation and sewerage facilities, and public parks.
 - 4) Fees imposed on recreation places, clubs, commercial and industrial enterprises.
 - 5) Licenses of dogs, vehicle-drawing animals, etc.
 - 6) Licenses of sailing ships, fishing boats, ferries, cruisers, and floating boats.
 - 7) Slaughter houses or areas used for this purpose.
 - 8) Markets administered by private individuals.
 - 9) Consumption of water, electricity, and gas within the ceiling of 1% of the bill, where the popular council of the city does not administer these utilities.
 - 10) Fees on the use or exploration of river banks and sea-beaches.
 - 11) 4% of the rentals of apartment buildings in accordance with the law governing the relationship between tenants and landlords. (See article 52)

- Seventh: Fees imposed by the city council for the exploration or use of the city utilities or public property.
- Eighth : Rents of buildings and building-sites owned by the government within the jurisdiction of the city.
- Nineth : Return of the investment of the city funds, revenues, of utilities administered by the city, and revenues of public markets within the jurisdiction of the city.
- Tenth : Government subsidies, donations, grants, and endowments, acceptance of such donations, grants, or endowments offered by foreign persons or agencies must be approved by the council of governors.
- Eleventh: Loans available to the city council.

Article 52

The following real-estate are exempted from the tax indicated in item (11) of the foregoing article:

- property occupied by ministries, government departments, public organizations, local popular councils, and private associations acknowledged by the law.
- property exempted from tax on buildings.
- property owned by foreign countries, provided mutual treatment.

Article 53

Decisions by the popular council of the city concerning the fees indicated under Article 51 must be approved by the popular council of the Markaz and by the governor.

The governor may suggest to the popular council of the city that it should establish or adjust a certain local fee which would enable the council to perform its functions in the interest of the general public.

The governor may also suggest that the popular council should cancel, adjust, or curtail the application of a certain local fee if he considers that such a fee is incompatible with the fiscal or economic policy of the State.

If the city council rejects any of these proposals, the governor may submit his suggestion to the popular council of the governorate.

Should disagreement persists the suggestion should be submitted to the council of governors whose decisions should be final.

Article 54

The popular council of the city should establish an account for the city services and development. The governor sets the regulations pertaining to this account.

The funds of this account should be treated as "public funds", particularly with respect to the application of the Criminal Law, and in connection with: collection, expenditure, and control. The surplus of this account should not be transferred to the Treasury (Ministry of Finance).

FINANCIAL RESOURCES OF THE MARKAZ

Article 43

The financial resources of the Markaz consists of:

1. The portion of governorate resources allocated by its popular council to the Markaz.
2. Return on investment of the funds, and revenues of utilities administered by the Markaz.
3. Subsidies from the government.
4. Donations, grants, and endowments. Acceptance of donations, grants, and endowments by foreign persons or agencies must be approved by the council of governors.
5. Loans available to the popular council of the Markaz.

The popular council of the Markaz should establish an account for the Markaz services and development.

The governor sets the regulations pertaining to this account. Funds of this account should be treated as "Public Funds", particularly with respect to the application of the Criminal Law, and in connection with: collection expenditure, and control. Its surplus should not be transferred to the Treasury (Ministry of Finance).

FINANCIAL RESOURCES OF THE VILLAGE

FINANCIAL RESOURCES OF THE VILLAGE

Article 69

The financial resources of the village consists of the following:-

1. 75% of the original land tax within its jurisdiction, together with 75% of the tax-supplement imposed thereon.
2. Local taxes and fees levied by the popular council of the village in accordance with the rules and procedures applicable by the city councils.
3. Taxes on entertainment and betting within the jurisdiction of the village.
4. Return on the investment of the village funds and the revenues of utilities administered by the village.
5. The portion of governorate's resources allocated to the village by the popular council of the governorate.
6. Subsidies from the government.
7. Donations, grants, and endowments. Acceptance of those offered by foreign persons or agencies must be approved by the council of governors.
8. Loans available to the council.

Article 70

The popular council of each village should establish a specific account for local services and development. Resources of this account consists of:-

1. 75% of the fees imposed in accordance with article 37 of this law (pertaining to the resources of governorates) and collected within the jurisdiction of the village.
2. Revolving-fund-projects administered within its jurisdiction.
3. Proceeds from the sale of buildings constructed by this account within the village jurisdiction.
4. Rent of apartment-buildings and utilities constructed by the same account.
5. Portion of profits of agricultural co-operative allocated to social services within the village jurisdiction.

Article 71

Resources of this account should be used in accordance with the decisions of the popular council of the village for the following purposes:-

1. Financing production and service projects according to a local plan approved by the governorate popular council, within the framework of the general plan of the State.
2. Completion of the projects set forth in the general plan of the State for which the appropriations of the village budget are inadequate. This applies to self-initiated projects according to the priorities proposed by the village popular council and approved by the governorate popular council.
3. Raising the standard of local services.

The governor sets the regulations pertaining to this account. Funds of this account should be treated as "Public Funds", particularly with respect to the application of the Criminal Law, and in connection with collection, expenditure, and control. Its surplus should not be transferred to the Treasury (Ministry of Finance).

APPENDIX B
PROJECTED REQUIREMENTS FOR SELECTED
INFRASTRUCTURE CAPITAL OUTLAYS TO
1990 FOR THE PROVINCIAL CITIES OF
BENI SUEF, FAYOUM AND MENIA.

APPENDIX B

PROJECTED REQUIREMENTS FOR SELECTED INFRASTRUCTURE CAPITAL
OUTLAYS TO 1990 FOR THE PROVINCIAL CITIES OF BENI SUEF,
FAYOUM AND MENIA.

The function of this Appendix is first to present a description of the water and waste water facilities in the provincial cities, which is done in Parts I and II, respectively for those functions. The final Part III of the Appendix sets forth "order of magnitude" estimates of the cost of bringing these services up to a workable level of performance for all of the residents projected to live in these cities in 1990. Part III also presents order of magnitude estimates of the cost of providing paved streets for those portions of the three cities not served by paved streets at present, together with a 25 percent increase in the Km of streets to accommodate projected population increases of 34 percent to 1990.

PART I: POTABLE WATER SYSTEMS

Each of the three cities have public water systems. In Beni Suf and Menia these are municipally owned and operated plants, utilizing a combination of filtered water and well-water the latter primarily to help meet peak demands. Fayoum is served by an older municipal plant for part of the requirements and by a plant operated by the GOPW for the remainder of the requirements now met. The description below is on a city by city basis. Although some references are made in this section to needs for the systems, the financial projections of the costs are contained in Part III, Appendix Tables B-1 through B-7.

Beni Suf

Source of Supply. Water supplies for Beni Suf are drawn from both a surface source on the Nile River and from wells located at the existing treatment plant and elsewhere in the City. A new treatment plant is under construction, also to be supplied by Nile River Water. Ground water in Beni Suf is of low quality, with high manganese and iron content. The wells are used only at times of peak demand or during power outages or maintenance shutdowns.

Physical Facilities. Water supply, treatment and distribution facilities were developed in Beni Suf in several stages. The original treatment plant with a rated capacity of 60 LPS was constructed in 1907 and is still in operation. In 1949, this plant was expanded by 100 LPS and a second expansion in 1975 added 50 LPS, giving a total capacity of 210 LPS.

Eight wells, five of which are on the grounds of the treatment plant, are rated at a total 140 LPS. Since all components appear well maintained, the capacities noted are probably realistic for the immediate future.

Four pumps with a total installed capacity of 820 LPS draw Nile River water into the treatment plant. These pumps are producing on a rotating basis with down time scheduled for regular maintenance. Raw water is delivered about 1000 meters to the plant through 300 mm and one 500 mm pipes. Emergency power for both the plant and the intake comes from three stationary diesel generating units in the filtration plant.

Prechlorination and alum injection takes place in the clarifiers. Water then passes through three 20 LPS steel tank filters in the 1907 part of the plant, two 50 LPS concrete tank filters in the 1949 portion and two 25 LPS concrete tank filters constructed in 1975. Underground storage is provided in one 300 M³, one 500 M³, and 2000 M³ reservoirs. Water from wells in the plant area, when used, is delivered directly into the underground storage.

The other three wells inject directly into the system. High pressure pumps with adequate standby capacity are installed in the plant. Emergency power under manual control is installed in the plant.

A 500 M³ elevated storage tank with 42 meter head is situated on the plant grounds. Power is insufficient to service the system and fill the tank except at low use periods. Also, the tank is small and is of little value. A 2000 M³ elevated storage tank has been requested by the engineers with no results.

The treatment plant was completely refurbished in 1947, but is again in need of rehabilitation and enlargement. Distribution mains are cast iron and steel of 450 mm, 300 mm, 250 mm, 150 mm, and 100 mm diameter sizes. Because of the small size of some mains, and because of corrosion problems, as many as 5 to 10 breaks per day are experienced. When replaced, asbestos-cement pipe is now used.

Comments on the Physical System. The existing intake pumps are in good condition and have many years of useful life as long as they are well maintained. Some minor rehabilitation is needed to the pumping plant housing due to the age of the 1907 installation.

Filters and underground storage (300 M³ capacity) from the 1907 component of the plant have severe structural deterioration and are at the end of their useful life. Only through a well-planned maintenance program have they lasted as long as they have. This 60 LPS facility should be abandoned and dismantled as soon as the new plant, now under construction, is in operation. Other components of the plant are in good condition and have many years of useful life remaining.

Treatment of well water should be investigated to determine if the objectionable characteristics can be eliminated. Continued mixing with treated water in underground storage, and addition of mains from wells not now tied into this storage, should minimize this difficulty and be adequate for a short term solution.

Eighty percent of the city is served by the network and 20 percent by community taps, according to the engineer.* That area served by community taps has been partially developed and the system will need upgrading. The distribution network suffers from deterioration and excessive pressure loss due to age and corrosion, insufficient grid closure mains and small main sizes. Also, there is virtually no elevated storage in the system. In order to utilize fully available capacity from the old and new plant, a complete refurbishing and expansion of the distribution system is necessary.

Operation and Maintenance. Water is metered in Beni Suef; however, meter repair and maintenance done by the Revenue Department consists of sporadic replacement of defective units. "Averaging" (establishing quantities used by estimation) is used where meters are not in working condition. Probably a larger quantity of unbilled water goes through the system due to this metering problem.

According to the engineer in charge, GOPW standards of 1.5 ppm chlorine at the plant and 0.1 ppm at the tap are maintained. The Health Department takes daily samples and reports any discrepancies. None of these reports were available.

With the exception of the 1907 filters, the intake and filtration plant is in good condition. Pumps and motors are subject to routine inspection, maintenance and rotation. Many have been replaced as they became worn.

Response time to repair breaks is about one day, according to the engineer.

Technical and Management Capabilities. With the exception of a few recent graduates, there are only two engineers employed by Beni Suef. Both the city engineer and the engineer in charge of the Water Department seem to be capable and dedicated to their work. The condition and high level of operation and maintenance in both the water and sewer plants is an indication of the quality of both engineering and technical personnel.

No evidence of private sector capabilities to design or construct water treatment facilities exist in Beni Suef. This must come from Cairo or the international engineering community. These capabilities do exist in the central government; however, input by local governmental engineers is apparently not allowed during the design phase.

Projects Under Construction. A new plant with a 200 LPS rated capacity is now under construction. Completion was scheduled for January 1981 but will probably not be completed until at least the fall of 1981. Sufficient property exists in the plant area to expand to a future capacity of 600 LPS. Installed capacity of both low pressure intake pumps and high pressure delivery pumps are 200 LPS. No elevated storage is included in the plant construction nor any emergency generators available. Therefore, a more realistic plant capacity would be closer to 150 LPS until standby capacities are added.

The new plant on the Nile River will have one 100 LPS and two 50 LPS pumps installed. A base for an additional 100 LPS pump is included. Any further expansion will require an entire new intake installation.

* Quoting the Beni Suef water department engineer.
See P.B.S. estimate elsewhere.

Prechlorination and alum injection takes place in a raw water storage area. Water flows through clarifiers and filters and is chlorinated before it enters two 2000 M³ underground storage reservoirs. From there it will be pumped into the distribution system.

This plant, designed by GOPW, uses Czechoslovakian equipment and controls; however, much of the equipment is outdated and obsolescent. Name plate dates of 1969 were observed on some of the recently installed equipment.

Absence of standby pumping capacity, elevated storage and emergency power precludes this plant from operating at its rated capacity. Correction of these deficiencies will require new buildings, as provisions for expansion were not included in the existing buildings. The city engineer believes that many problems and deficiencies exist in this new plant, and long periods of break-in modifications will be necessary.

With the completion of a Nile River bridge, now under construction, rapid development will take place on the east shore. The total infrastructure must be developed for that area. A new water system would probably not be as economically feasible on that side as expanding the existing plant and carrying the water in pipes on the bridge. Therefore, additional capacity to that recommended for 1990 may become necessary within the next five years. This capability to expand for service on the east side would be easily accomplished.

Probably the greatest need in the entire system is for elevated storage. Erection of these tanks, along with completion of loops with adequate isolation valves, would upgrade the present system to an acceptable level.

The new plant can be operated at its rated capacity by installation of low and high pressure pumps and elevated storage. Its dependability can be increased with adequate emergency power. With this capacity, the new plant could be ready to deliver water to the expanding east side of the Nile.

Use of well water and firming up the new plant capacity will provide sufficient water for requirements well beyond 1986.

Fayoum

Source of Supply. Fayoum water is delivered from two treatment plants, the Kohafa plant with an intake located on the Bahr Youssef canal and the El Azab plant with an intake located on Bahr Hassan Wasef canal. Both canals draw water from the Nile River, upstream of Beni Suef. Fayoum does not use wells as water sources.

Physical Facilities. The Kohafa water treatment plant, owned and operated by the City of Fayoum furnishes 200LPS to the city. The plant was originally constructed in 1927 and was expanded to its present capacity in 1965.

An intake consisting of a one meter by two meter concrete box, with trashracks, and a slide gate is located on the Bahr Youssef canal about 50 meters from the plant. Water is delivered to the plant through five low pressure pumps at a maximum rate of 200 LPS, adequate standby pumping capacity is available to ensure adequate water supply when some of the pumps are being maintained.

Four settling and flocculation tanks, with a total capacity of 200 LPS clarify the water. Alum is added through an antiquated gravity mixing and feed system. Four filters built in 1927 are installed inside the original building, and four uncovered filters built in 1965, are adjacent to the plant buildings. Total filtering capacity of these eight filters is 200 LPS.

Treated water then flows into underground storage tanks where it is chlorinated. Five high pressure pumps deliver the treated water to the water distribution system which includes a 750 M³ elevated storage tank.

Fayoum distribution system was constructed in 1926 and expanded moderately since that time. It is in relatively good condition considering its age but needs to be upgraded to meet present day needs.

According to the mayor, no wells are included in the system nor are any contemplated.

The El Azab Plant, located southeast of Fayoum, is owned and operated by GOPW. This plant has a rated and dependable capacity of 1100 LPS. It serves the entire Governorate area as well as the western part of the Beni Suef Governorate. As Fayoum City's needs increased, part of the El Azab capacity was allocated to Fayoum City, leaving the northwest and southwest corners of the rural Fayoum oasis without potable water supply. At present, the El Azab plant furnishes about 250 LPS per day to Fayoum. The delivery is intermixed with water from the Kohafa plant.

According to the El Azab plant manager, if additional capacity is provided to replace the El Azab plant's contribution to the city of Fayoum, outlying areas in the governorate could be adequately serviced.

Construction of the original portion of the El Azab filtration plant was completed in 1940 with a 480 LPS capacity. The second stage with 620 LPS capacity was completed in 1963. The plant serves 11,000 house connections and 3600 community taps in the governorate.

Preliminary raw water sedimentation takes place in a collector sump fed by gravity. Six low pressure pumps with a total capacity of 1900 LPS deliver water from the Bahr Hasan Wasef Canal to the plant. These pumps provide adequate reserve for this intake system. Water flows through clarifiers, sedimentation basins, and filters to three underground storage basins with a total capacity of 7500 M³.

Water is chlorinated at 1 ppm at the plant, with a planned residual of 0.1 ppm at the tap. According to the engineers, regular tests are scheduled to maintain water quality.

The 1940 portion of the plant is in excellent shape, primarily due to superior design and construction. The 1965 portion has shown signs of deterioration due to a lesser quality of design and construction, but has many years of useful life left. Seven high pressure pumps with 2400 LPS provide ample reserve and deliver treated water into the system. Emergency diesel powered generators are readily available to the entire plant for use in case of power outages.

The El Azab distribution system was originally constructed in 1940 and extended in 1963. The mains are, according to the plant manager, in good condition. However, losses are large because community taps are constantly open. Educational programs and mechanical devices have failed to correct this problem. Small mains, especially at the extreme limits of the service area, result in pressure problems in these areas.

Comments on Physical System. The Kohafa plant is in good operating condition with the exception of a few components. The water intake is located downstream from a sewer force main crossing which is slightly above water level and is under a heavy load caused by heavy water hyacinth growth. If this growth is not periodically removed the stress could result in severing the sewer line, with the resultant pollution of intake waters. Either the force main crossing should be improved or the intake relocated. The alum mixing and injection system is cumbersome and extremely difficult to operate and control. A small investment could improve this system. The settling and flocculation basins constructed in 1927 are still in operable condition. However, the filters need replacement due to corrosion and obsolescence. The 1965 filters are in excellent condition but in need of enclosures. Their exposed condition encourages algae growth, reducing effectiveness and increasing maintenance problems.

An expansion of the Kohafa plant would firm up Fayoum City capacity and would release 250 LPS from the El Azab plant for use elsewhere in the governorates. The distribution system in the Fayoum area can handle this additional capacity since it was originally designed to convey larger flow rates. The El Azab plant would then be adequate for needs in the Fayoum governorate.

If additional tourist areas are developed, a reassessment of the city and governorate needs must be made.

Operation and Maintenance. Operation and maintenance of the Kohafa plant has been satisfactory. Some improvement could result from increased emphasis on basic technical training in these techniques. The El Azab plant is extremely well operated and maintained, when compared to other plants observed, and should serve as an example for these other plant personnel.

Technical and Management Capabilities. The Kohafa plant manager is well versed in the technical aspects of the plant. Technicians and Laborers do a good job. With additional training in plant maintenance and operation, they can be entrusted with increased responsibilities resulting from plant expansion.

The El Azab plant is operating at a high level of efficiency, primarily due to the plant manager and his staff. A well planned preventive maintenance program is apparent and employees in the entire plant were performing their tasks without excessive supervision.

No apparent private sector design exist in the Fayoum area. This expertise must come from the private sector in Cairo, the international engineering community, or the GOPW.

Needs. A combination of upgrading of existing facilities and the addition of a new plant for Fayoum are proposed to achieve 1990 needs, including:-

- a) Provision of a new intake above the sewer force main.
- b) Development of a new alum mixing and injection system.
- c) Provision of covers for the 1965 plant filters and replacement of the 1926 filters.
- d) Development of additional elevated storage.
- e) Expansion of the total water treatment capacity.
- f) Upgrading and expansion of the distribution system to include all areas.

City of Minia

Source of Supply. Water supply for Minia comes from three sources: the Nile River to the North (downstream) of the city, about 200 meters from the treatment plant; the Ibrahimia Canal, about 500 meters from the plant; and four wells located throughout the city. Water from the wells is of rather poor quality, having high concentrations of manganese and iron and is used only at times of peak demand or when power outages or maintenance shut-downs occur that prevent distribution of treated surface water.

Physical Facilities. Minia's water supply was originally developed in three stages. In about 1927 the original system with a rated capacity of 120 LPS was constructed. This plant was expanded in 1964 by adding 200 LPS capacity on a contiguous site. Four wells at locations throughout the city were added in 1970 and 1975 with a peak capability of delivering 145 LPS. The available capacity of these wells is somewhat less since, under continuous pumping, quality is poor.

The original 1927 system now consists of a deteriorated intake originally rated at 200 LPS on the Nile River, with an estimated dependable capacity of about 40 LPS. It is a brick and concrete structure containing three raw water pumps, only one of which is operable. Rehabilitation of this intake is not considered feasible.

Water is delivered into three sedimentation basins where alum is added and flocculation occurs. It is then filtered through three 40 LPS sand filters and stored in an underground reservoir of 500 M³ capacity. Two 60 LPS pumps and one 100 LPS pump deliver water to the system. A 500 M³ elevated storage tank with 35 meter head has been abandoned because it has insufficient head to maintain adequate pressure in the distribution system.

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Water from the Ibrahimia Canal is delivered into the treatment system constructed in 1964 by two 50 LPS, two 100 LPS and one 120 LPS pumps. Alum is added and settlement and flocculation occur in two 100 LPS basins. Four 50 LPS sand filters clarify the water before delivery into a 1000 M³ underground storage basin. The water is delivered to the system and a 1000 M³ elevated reservoir at 55 meter head by two 120 LPS, one 100 LPS, one 60 LPS and one 50 LPS high pressure pumps.

Each year, most canals in this part of Egypt are closed for repairs and cleaning. During this time, wells are used as a primary water source. Water from these wells is delivered into the system, without any treatment. Well water is also used when power outages occur, using emergency power, and during peak usage times.

The distribution system was originally installed in 1927 and has been moderately extended since that time. Drawings showing the system coverage and pipe locations are on file in the city water department. The distribution mains are 100 mm to 200 diameter asbestos-cement pipes and 100 mm to 500 mm diameter cast iron and welded steel pipe. About 80 percent of the population is now serviced with water by either house connections or community taps. Those not served use untreated canal water or Nile River water.

Comments on Physical System. Because of its deteriorated conditions, the 1927 Nile River intake is not dependable and should be abandoned. Since the Ibrahimia Canal is closed for cleaning for over one month during the year, a new source at the Nile River is needed. This source could serve both a projected new plant and the old, rehabilitated plant by interconnecting the raw water mains, or it could be independent with separate intakes for both the existing and projected plants.

The 1927 filtration plant is close to the end of its useful life. Exposed electrical switching facilities and other inadequacies are severe safety hazards. Openings into the underground storage tanks are pollution sources and structural and mechanical deterioration precludes rehabilitation of these tanks. Most components of this system should be abandoned and removed. However, the 500 M³ elevated storage tank should be considered for emergency storage even though it operates at a 35 meter head.

Most components of the 1964 plants are in good operating condition and, with some minor modifications and rehabilitation, can serve for many years. Steps should be taken to eliminate pollution of underground storage by closing openings in the tanks. The volume of elevated storage is not adequate and should be increased.

Direct pumping of well water into the system results in high manganese and iron contents at the tap, causing complaints of poor taste and quality. Additionally, lack of treatment could be a problem since pollution of wells from surrounding conditions is possible and probable. This could be corrected by providing delivery mains directly into the treatment plant where the water would be treated with other water or into elevated storage to be mixed with treated water and diluted to acceptable levels.

The distribution system does not have a satisfactory grid of mains, resulting in high pressures near the plant and low pressure problems at the extremities of the system and in taller buildings. A new plant now planned for the opposite end of town plus inclusion of additional mains and carefully located elevated storage would alleviate these problems. Pipe sizes throughout the system, especially the 100 mm sizes appear to be inadequate to deliver flow at desired pressures. As a result, breaks are frequent. Corrosion of cast iron pipes, probably due to electrolysis also contribute to the many breaks. Unfortunately, insufficient records other than experiences related by the engineers were available to make meaningful analysis of break history. Moreover, there has been no apparent systematic survey of pressure differentials to locate unseen leaks which are suspected to exist in the system.

Before any rehabilitation or extension of the distribution system a comprehensive analysis of operation of the system, pressure and leakages should be made. The total system should then be designed prior to expansion and rehabilitation.

Theoretically, water is metered, but because of inadequate meter maintenance it is probably not effective. Thus there is inadequate control on the volume of water delivered, and leakage or waste is difficult to determine.

Open community taps are a constant source of water loss. Control of these open taps has been a problem and a resolution has not been developed by the local water officials to provide more positive controls on community taps.

Operations and Maintenance. Despite many problems, water service is dependable with surprisingly few general or localized outages. Adequate reserve pumps at the Ibrahimia canal intake, coupled with properly maintained well pumps and reserve stationary and portable emergency power supplies keep the system in operation. The General Organization for Potable Water (GOPW) standards are maintained according to the Water Department engineers. However, because of open access to underground storage, localized breaks and other problems it is questionable if the 0.1 ppm at the tap is consistently maintained.

Pumps at the 1964 intake and plant are apparently kept in working condition by scheduled maintenance. Other maintenance seemed to be done only when break-downs occur. The many line breaks are probably due in part to inadequate bedding and insufficient trench compaction, both upon initial installation and when repairs are made.

Both the interior and exterior of the 1964 and 1927 plans are littered with debris, spare parts and discarded materials. Animal wastes in the unpaved areas, clinging to shoes of maintenance personnel, often end up in the treated underground reservoirs. A regular maintenance program, concentrating on plant cleanliness, would improve service and tend to decrease long term maintenance.

Technical and Management Capabilities. Engineering at the top level in the water department appeared adequate. However, insufficient well qualified technical back-up personnel was apparent. Day-to-day problems seem to occupy most available time, leaving insufficient time for planning and implementing maintenance programs. Reasonable planning on longer range needs appears to have been done, probably by the city engineering personnel. Fundamental training in the basics of operation and maintenance would doubtless improve effectiveness of both engineers and technicians.

No private sector design capabilities are apparent in Menia. They must come from the Egyptian or international engineering community or from GOPW.

Projects Implemented in 1978-1980. In 1980, LE. 100,000 was budgeted for work on improvements to the water system. This was allocated for two new 120 LPS high pressure pumps and a 120 LPS low pressure pump, (LE 26,000) for improving the distribution system (LE 40,000) and for changing diesel drive motors at the wells to electric drive motors (LE 34,000). No other capital outlay projects were discussed by water personnel.

Needs. Because of the deteriorated condition of the Nile intake and most components of the 1927 plant abandonment and removal would appear reasonable. A new treatment plant located south of Minia is in the preliminary planning stage. A new intake for the 1964 plant either at the present site or as a component of the new plant would be advisable. Since the Ibrahimia canal is out of service over 10 percent of the time, abandoning or mothballing this intake after construction of a new Nile River intake would appear reasonable.

New mains from the wells to the new treatment plant south of town and/or the 1964 plant would be advisable. Thus, the rather unacceptable well water would be intermixed with treated Nile River water, making it more palatable.

Additional elevated storage is essential to maintain system pressure during high demand periods. Additional mains are required to complete the existing grid and proposed extensions and to reduce the pressure loss through critical access to provide better service. Total abandonment of the 1927 plant is recommended. The wells would be considered a stand-by source.

PART II: WASTE WATER SYSTEMS

Each of the three cities has sewerage and sewage treatment facilities; however, in none of them do the present facilities serve the entire population of the city. This section provides a brief description of the facilities in place as well as some comments upon the needs for additional facilities. As in the case of Part I, order of magnitude estimates of cost for indicated needs are contained in Part III, rather than being given here.

Beni Suef

Sewage disposal facilities were first built in Beni Suef in 1958, and they have been extended in small increments several times. Sewer pipe within the network is primarily vitrified clay pipe. Five pumping stations, four having three pumps at 60 LPS each and one having three pumps at 20 LPS each, move sewage through 250 mm, 300 mm, 400 mm, and 500 mm cast iron force mains. One 550 mm force main conveys the sewage to the treatment plant which has a 300 LPS capacity. The discharge from the force main at the treatment plant flows by gravity into a receiving tank and two settling basins. Settled sludge is transferred by gravity to the drying beds. The settled sewage flows into four trickling filters. After final sedimentation, the effluent is chlorinated and discharged into a canal for disposal into a main drainage canal.

Potable water for use at the sewage treatment plant is provided from a well located in the vicinity of the plant and from a water main which is part of the Beni Suef Water System.

A chemistry lab staffed with a chemist and a technician is in operation at the plant. Biological oxygen demand, alkalinity and other tests are taken twice a day; process control is maintained as a result of these tests.

According to the City Engineer very few breakdowns are experienced throughout the system. This may be the result of an excellent maintenance program. Engineers and technicians appear to be dedicated to keeping the system in top operating condition. Every component of the plant which was observed showed the results of their efforts.

The labor force at the plant has not been increased during the past ten years, even though the work load has increased. The City Engineer has requested increased staffing in his budget; however, approval has not been granted as yet.

The sewer network and treatment plant is operating as well as can be reasonably expected, primarily due to the efforts of two engineers and several technicians in key positions. The system is meeting demands on it and with modest rehabilitation will continue to do so.

Construction of 40 additional sludge drying beds has been approved and is proceeding. No other projects have been authorized.

Projects Planned : A new Nile River bridge is under construction in Beni Suef. This will permit urban development on the east side of the River, and planning is proceeding for infrastructure to serve that area. A separate sewage collection and disposal system is planned.

The Engineers have justified need for expansion of the Beni Suef system by the addition of a new pumping station and force main. This concept has been included in the budgetary requests, but has not yet been authorized.

The plant has adequate capacity for expansion to these areas through 1986, but collection systems including stations and force mains are required to convey sewage to the plant. The existing pumping plants need rehabilitation.

Even though additional drying beds are under construction, more are needed to carry the load. The force mains and drying beds must be constructed to meet these needs however.

Since expansion on the East Bank has not yet started and is still unpredictable, no project is recommended for that area in the immediate future.

Fayoum:

Existing Facilities: Fayoum's sewer network was originally constructed in 1936, and the treatment plant was completed in 1938. Minimal expansion has taken place since then with the exception of the addition of sludge drying beds. Sewage is collected and pumped to the disposal plant using three primary and two secondary pumping stations. Large areas of the city which are available for development are not serviced by the sewer system.

Two force mains convey the sewage to the plant. At full operating conditions, the sewage flows through primary settling basins, sand and gravel filters, final sedimentation, chlorination and through an outfall to drainage canal. The sludge is conveyed to drying beds by gravity. Data on operations and maintenance were not made available to the project team, and therefore, impressions are based on visual observations.

The two pumping stations appeared to be reasonably well maintained. Maintenance at the plant, however, was almost at a standstill. Mechanical and electrical deterioration and corrosion was so severe that, except for one-fifth of the sewage being filtered, raw sewage was being discharged to the drainage canal. Very few maintenance personnel were observed.

Information on the true condition of the collection system was inadequate. The Mayor stated that this system needed upgrading since it has received little improvement since 1938. One of the pumping stations, the Lotfalla Station, is too high in elevation to drain properly the tributary service area; also excessive sedimentation is taking place causing unacceptable conditions.

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Intake flumes, sludge tanks, filter tanks and outfall of the old plant were well constructed and with limited repair could be almost in original condition. Most of the metal work, pipes, bridges, skimmers and other mechanical components are so deteriorated that they are useless. Of the four filter tanks, only one is operating (at a reduced capacity:) , the second may be usable, the third is totally inoperable and the fourth is dismantled. The entire system could be placed into full operation by a complete refurbishing of all the mechanical and electrical components and some structural repairs. A new treatment plant is being constructed contiguous to the old plant. Thus, with the new plant and major renovation of the existing plant, Fayoum has the potential of meeting long range needs with a relatively small investment.

At present the existing plant is handling about 25000 M³ per day. Only about 5000 M³ is passing through the filters. The remainder has only larger solids removed through sedimentation, and the effluent to the drainage canal is almost raw sewage. The drainage canal flows through the North portion of the Fayoum and empties into Karoon Lake. This lake has no outlet. Maintenance of the existing plant appears to be minimal, perhaps due to dependence on the completion of the new plant.

Technical and managerial capabilities were difficult to assess. Most discussions were with the Mayor or lower level officials. The Mayor indicated water and sewer use were his priorities and was reluctant to discuss other infrastructure problems. Conditions at the disposal plant may indicate a need for better qualified and trained engineering and technical personnel.

There appears to be no local engineering capabilities to design or construct sanitary facilities, either in government or the private sector. This capability must come from the Central Government, the private sector in Cairo or the international engineering community.

Projects Implemented in 1978-1980: A new plant with 40,000 M³ per day capacity, with a flow of 460 LPS has been bid, and site clearing has been completed. The plant, consisting of primary sedimentation, biological treatment with mechanical aerators, final sedimentation, chlorination and sludge drying beds will be in operation within the next few years.

Planned Projects*: A request to furnish a list of projects which would be required to upgrade the sewage and other facilities for service to the year 2000 was made by the Fayoum Mayor. He stated that water and sewer were top priorities and that other requirements were of comparatively low priority. His list, including cost estimate, is as follows:

	<u>L.E. 1000</u>
Upgrade Pumps at Lotfalla Station	75
New Kiman Faris Pump Station	100 lps 5,000
New El Saifia Pump Station	120 lps 6,000
New El Kilani Pump Station	120 lps 6,000
New Monshat El Bakri Pump Station	80 lps 5,000
New Kohafa Pump Station	80 lps 6,000
Reinforce collection system and force mains	1,000
70 km pipe in expanded network	1,140
Rehabilitate old plant to extend life	117

LE 30,332

* See PBS estimate.

All new pump stations include sump, station, pumps, gantry, all mechanical and civil work and force mains.

The new plant will be sufficient for current Fayoum needs. There is, however, virtually no treatment available at the present time. Rapid rehabilitation of the old plant for the interim period, at least until the new plant is in operation, is essential.

Additional force mains are needed along with rehabilitation of the existing sewer network and system expansion to uncovered areas. According to the mayor of Fayoum there is also a need for five new pumping and lift stations.

The listing made by Fayoum's mayor includes facilities required beyond 1990 requirements. Detailed information on requirements to upgrade the system to meet 1990 needs was not available.

Minia

Existing Facilities. Sewage facilities for Minia were constructed in the early 1960's and began operating in 1966. The system includes four pumping stations with a total capacity of 795 LPS, a collection system and force mains. In 1975 a new pumping station with 270 LPS capacity and connection system was constructed in previously unserved areas. New house connections in many areas of the city have since been made.

About 35 percent of the city is served with sewers*. The remainder of the houses are served by septic tanks or are not served by any sewage system. Some of these buildings now served with septic tanks can be connected to the sewer system since they are in close proximity.

There are about 40 km of verified pipe ranging in size from 175 mm, 225 mm and 300 mm. The system also contains 7 km of cast iron and steel force mains*. Along this 40 km collection system, about 3500 building connections have been made.

Sewage is pumped from the lift and booster stations through force mains to the sewage treatment plant about five km southwest of the city. The design flow is 200 LPS (17,000 M³/day); sewage flows through a small primary settling basin, two primary sedimentation tanks and two trickling filters. Sludge flows by gravity to drying beds and the dry sludge is sold to farmers for agriculture purposes.

Operation and Maintenance. Operation, maintenance and repair work for the collection system pump stations and force mains appear to be adequately planned and executed. Pumps and motors are routinely maintained and adequate portable emergency power is available.

Maintenance and repair at the treatment plant, especially on the mechanical and electrical equipment, is virtually non-existent. Substantial improvement must be made if adequate quality of treated sewage is to be attained.

* This estimate is made by the Minia Sewage Department Engineers

The collector system has been, according to the engineer in charge, almost free from breaks and other major problems. Blockages at manholes, probably from debris, are frequently encountered and numerous breaks in the water distribution system cause breaks in the sewer lines, by undermining foundations. Since water lines are not normally flushed completely after this repair, health hazards can exist.

The operating personnel are proud of their ability to properly install and bed pipes and together with the proper installation of the original system, these seem to be the reasons for freedom from sewer line failures.

The only access road to the treatment plant was once a paved, one lane road, with room for vehicles to pass. It is now in such a state of disrepair that, for all practical purposes, it is impassable for all but the smallest vehicles; trucks and most passenger cars cannot negotiate the road. Operating personnel must either walk to work, ride donkeys or cycles. Access points to adjacent canals have been eroded by animals, leaving only a few feet of the original surface of the road.

A powerline to the plant was severed several years ago, and then removed. No power except for an emergency generator serving recirculation pumps is available at the plant.

Sewage is delivered through the force mains to a small and inadequate primary settling basin, then flows through the plant by gravity. The secondary settling tank sludge skimmers are inoperative due to lack of power and mechanical deterioration; sludge is removed by a rope tied to the axis and pulled by a laborer. The sludge flows by gravity to the drying beds.

Holes in the distribution arms on the trickling filter are almost completely clogged. They are built to move by water flow, but seldom move because of clogging. Thus, sewage flows in a stream from the center pipe and through a few open holes in the arms. It is estimated that 75 percent of the sewage does not pass through the trickling filter. Final sedimentation is not provided. Effluent is not chlorinated and the building is inaccessible due to sewage seeped from the drying beds flowing over the ground. The effluent from the plant is of no better quality than raw sewage with some solids removed.

Engineering personnel are not adequately supervising operations at the plant, probably due in part to the lack of access. Technicians at the plant seem to want to properly operate the installation, but they have neither the personnel, equipment nor materials to do so; without access or power, they are further hampered. When these problems are resolved, and with basic technician training on plant operation, the technicians can probably do an adequate job.

Projects Implemented in 1978-1980: A contract for a new force main to the treatment was let recently. The pipes for this force main are on hand and will be installed in the near future.

Projects Planned: The City has estimated their expansion requirements for the next twenty years to expand sewerage service to the entire city by adding collector sewers, pump stations, and force mains; by increasing the capacity of existing pump facilities; and by doubling treatment capabilities. To meet these needs, the present plant needs to be upgraded to correct deficiencies.

Whatever project is selected, the first priority is access to the plant, extension of power to the plant, and a complete rejuvenation of the plant, including installation of final sedimentation and reactivation of the chlorination system. Following that should be a fundamental training program on operations and maintenance of treatment facilities both for engineers and technicians.

When considering plant rehabilitation, emphasis should also be placed on correcting a seepage problem around the plant; sewage could be seeping from the tanks or from the drying beds.

PART III

PROJECTED REQUIREMENTS FOR INFRASTRUCTURE CAPITAL OUTLAY
IN THE PROVINCIAL CITIES.

The principal function of this part is to provide "order of magnitude" projection of the costs of bringing selected aspects to the infrastructure of the three provincial cities to a status that will permit the rendition of a reasonable level of service in the selected functional areas. At the same time, such expansion of physical facilities will be sufficient to provide the basic infrastructure requirements to service the housing needed to accommodate the current and prospective population through 1990.

REQUIREMENTS FOR 1990

Table B-1 sets forth conclusions as to the order of magnitude of projected capital outlay requirements in the three cities during the 1980s for potable water, sewerage, and street components of infrastructure. The projected costs are based upon the assumption that the population of the cities has increased since the 1976 census at a rate of 3.00 percent, compounded annually.

The projects and cost data set forth in Table B-1 and associated supporting tables provide for servicing population in the currently developed areas of these cities and for additional areas of development believed to be necessary to house population increases in the 1980s. Some of this land to be developed is already withdrawn from agriculture; most is not. In the absence of comprehensive physical development information; it has not been feasible to estimate the amounts of additional land required to be diverted to urbanization; however, in both Menia and Fayoum city limits already embrace sufficient agricultural land to permit such expansion as may be required. In Beni Suef, there are also areas not yet developed on an urban basis, i.e., streets and other facilities have not been installed.

Accordingly, the projected costs do not include any costs that may be associated with the acquisition of rights of way for streets and associated urban infrastructure networks for water and sewer. Nor do the projected costs make provision for extension of electrical services which are presumed to be financed from other governmental resources.

The cost projections contained in supporting Tables B-2 through B-11 are developed on the bases shown in the notes to those tables. In each case, an inflation factor of 15 percent compounded for a period of two years is included in the unit costs used. That is, costs which would likely have prevailed these facilities have been contracted for in mid-1980 or late-1980 and have multiplied by $(1.15)^2$.

Table B-1
 Summary of Projected Costs for Selected Infrastructure Requirements
 to 1990
 Provincial Cities of Beni Suef, Fayoum, and Menia
 (monetary amounts in thousands of Egyptian pounds)

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Reference Table Number	Item	Projected Financial Requirements			
		Beni-Suef (1)	Fayoum (2)	Menia (3)	Total (4)
I. POTABLE WATER SUPPLY					
B-2	A. Filtration plants	170*	5,109*	3,198*	8,477*
B-3	B. Filtered water storage	974	2,607	2,223	5,804
B-4	C. Primary distribution network	1,238	1,518	1,848	4,614
B-5	D. Trunk distribution and reinforcing mains	506	380	750	1,636
B-6	E. Water metering system and program	616	717	771	2,104
B-7	F. Other water system items	811	700	800	2,311
TOTAL FOR POTABLE WATER		<u>4,315</u>	<u>11,031</u>	<u>9,600</u>	<u>24,946</u>
II. SEWERAGE					
B-8	A. Sewage treatment plants	1,247	405	4,871	6,523
B-9	B. Primary sewer network	2,563	3,541	3,112	9,216
B-10	C. Other sewerage and sewage treatment items	1,200	2,325	1,560	5,085
TOTAL FOR SEWERAGE AND SEWAGE TREATMENT		<u>5,010</u>	<u>6,271</u>	<u>9,543</u>	<u>20,824</u>
III. STREET					
B-11	A. General paving	3,040	3,292	2,536	8,868
TOTALS, excluding provision for engineering; systems design; training; installation of new planning, financing, budgeting and related systems.		<u>12,365</u>	<u>20,594</u>	<u>21,679</u>	<u>54,638</u>

*See general notes to Tables B-2 and B-8 for explanation of impact of somewhat higher standards of plant design.

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It is emphasized that these are "order of magnitude" costs. In no sense should they be accepted as preliminary engineering estimates of the costs of the facilities required. Such degree of refinement can be accomplished only through preliminary engineering studies which (a) define much more precisely the standards under which the facilities are to be installed, (b) provide a comprehensive analysis of the existing facilities and their condition, and (c) carefully explore alternative means of providing the required services.¹

In the development of these cost projections, it is assumed that the contracts for all facilities would be awarded in mid-1982. Obviously for some elements of the projected program, e.g., certain extensions of streets and networks into new areas, the need for these facilities may not materialize fully until the late 1980s. Therefore, it will probably be appropriate to delay these elements of the program. It was not feasible in this study to attempt such refinements; they must come during the course of the development of the plans required to bring services up to reasonable levels in the near future. Delay in installation of the facilities will ease cash demands in the near future. On the other hand, given inflation rates, the present value costs of the facilities must still be met from some source.

In seeking to provide facilities for 1990 population, a straight mathematical calculation would indicate a requirement for an increase in aggregate street, water, and sewer networks by 34 percent. The projections have been based upon an increase of only about three-fourths this rate, i.e. 25 percent. This seems warranted because it should be feasible through a combination of (a) more effective planning, (b) more intensive use of residential land, (c) moderate upgrading of population density by infill and other methods, and (d) sheer efficiency to hold down the intrusion of development into agricultural areas to a minimum.

Although there has been discussion of potential development East of the Nile at both Beni Suef and Menia, these have not been taken into consideration in the preparation of these projections. Until the bridges have been completed (or at least advanced to the major construction stage and completion dates reasonably estimated), it is not feasible to count upon the Nile East as near-term reservoirs for population accommodation. In like manner, no account has been taken of the use of desert land--except for the possibility of use for disposal of garbage, rubbish, and dirt removed from the streets.

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For example, the projections contained here use specified assumptions concerning the relationships between average daily consumption of water and peak demands during the day and during the year. An examination of actual experience in these cities may show that the patterns of use are vastly different. Moreover, insofar as potable water supply is concerned, it is assumed that the use of well water will be phased out in favor of drawing all normal raw water requirements either from the Nile directly or through canals. Such an assumption may prove unwarranted and the use of well water on a continued basis, together with appropriate treatment and other protections, can provide a more economical and efficient element of raw water supply than that assumed in the projections.

Table B-2

Projected Water Filtration Requirements through 1990
 Provincial Cities of Beni Suef, Fayoum, and Menia*
 (monetary amounts in thousands of Egyptian pounds)

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City	Population Estimated for 1990 (000)	Estimated Daily Use		Filtration Requirements LPS	Present Capacity LPS			Required Capacity LPS	Estimated Costs in LE 000
		Potable Water @ 140 L/Day per capita	LPS		Wells	Filtration			
						No. Liters per day (000,000)	LPS Average		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	
<u>Beni Suef</u>	179	25.06	290	363	140	1907 1949 1975	60 100 50	- 100 50	- - -
Additional capacity required:						1981		200	-
- Under Construction								13	170
- New Construction required									
TOTALS	<u>179</u>	<u>25.06</u>	<u>290</u>	<u>363</u>	<u>(140)</u>		<u>210</u>	<u>363</u>	<u>170</u>
<u>Fayoum</u>	253	35.38	410	513	-	1926 1965	80 120	- 120 393	- - 5,109
Additional capacity required									
TOTALS	<u>253</u>	<u>35.38</u>	<u>410</u>	<u>513</u>	<u>-</u>		<u>200</u>	<u>513</u>	<u>5,109</u>
<u>Menia</u>	220	30.80	357	446	175	1927 1967	40 200	- 200 246	- - 3,198
Additional capacity required									
TOTALS	<u>220</u>	<u>30.80</u>	<u>357</u>	<u>446</u>	<u>(175)</u>		<u>240</u>	<u>446</u>	<u>3,198</u>

Notes: See the following two pages.

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Notes to Table B-2

* The note below to Column 2 indicates allowance for peak day requirements is 125 percent of the average total flow of 140 liters per capita per day. The conventional relationship is 140 percent, rather than 125 percent. However, it is believed that given the long summers in Egypt the peak day requirements should bear a significantly lower percentage relationship to average demand than in other climates where peaks are higher in relation to averages. Two other considerations account for the use of the 125 percentage relationship here : (1) there is relatively little seasonal demand for watering lawns and gardens; and (2) in the case of Menia and Beni Suef the present wells will be retained as emergency sources of supply and could help meet peak demands when required.

On the other hand, should the higher design standard of 140 percent be used, requirements for additional filtration capacity and consequent cost adjustments would be as follows :

	Additional LPS of Filtration Capacity Required for 1990	Additional Costs L.E. (000)
Beni Suef	43	569
Fayoum	61	824
Menia	54	710
Total		<u>2,102</u>

Notes to
Numbered
Columns

- (1) Population is projected on the basis of an annual compound increase of 3.00 percent.
- (2) Estimated total water demand is based upon an average supply of 140 liters per capita per day (LCD). When this is increased by 125 percent to take into account peak day demands, production capacity becomes approximately 175 LCD.

As indicated in the general note above this standard is considerably lower than the capacity being used by GOPW and also below that used by the Provincial Water Supplies Project, Final Report , Vol. 3, pp. 33ff.

- (3) The average liters per second (LPS) demand is computed by dividing the values in column 2 by the number of seconds in a day (86,400).
- (4) Liters per day of filtration capacity is at 125 percent of values in Col. 3. (See general note above).

Continuation of Notes to Table B-2

- (5) The values here are the LPS capacity of the wells used to serve the cities of Beni Suef and Menia. These values are not carried forward into columns 8 and 9 inasmuch as it is presumed that filtered water from surface sources is superior. The wells should be maintained on a standby basis; however, if used without full treatment, water should be cleared through the filtered water storage facilities in order that it may be treated with chlorine.
- (6) The dates upon which existing components of filtration plants are reported to have been placed in operation.
- (7) Reported rated filtration capacity of plants now in service. In the case of Menia, the rated capacity of the 1927 plant is reported at 160 LPS; however, the functional capacity in 1980 is reported to have decreased to about 40 LPS.
- (8) This column records the existing filtration capacity to be carried forward to 1990 (which in the case of both Beni Suef and Menia will require some additional expenditures reported in Table B-7. Closing of the 1907 element of the Beni Suef plant and the 1927 element of the Menia plant is postulated. Values here are based on the 125 percent concept introduced in Col. 4.
- (9) Values in L.E. are computed on the basis of 13,200 L.E. per LPS for construction of the new plants or extensions of existing plants. This value is based on L.E. 10,000 for 1980 and takes into account inflation rate of 15 percent per year to mid-1982, the assumed date for award of construction contracts.

TABLE B-3
 Projected Requirements for Filtered Water Storage to 1990
 Provincial Cities of Beni Suef, Fayoum, and Menia.

(monetary amounts in thousands of Egyptian pounds)

	1990 Daily Filtration Capacity M ³ (1)	Storage Capacity Required			L.E. Requirements for 1990		
		Total	Underground	Elevated	Total	Underground	Elevated
		M ³ (2)	M ³ (3)	M ³ (4)	@ 200 LE/M ³ (5)	@ 200 LE/M ³ (6)	@ 330 LE/M ³ (7)
<u>Beni Suef</u>							
Available, 1 Jan. 1981		3,300	2,800	500			
Under Construction, 1 Jan. 1981		4,000	4,000	-			
Net additional needed		3,154	518	2,636	974	104	870
TOTAL REQUIREMENTS	<u>31,363</u>	<u>10,454</u>	<u>7,318</u>	<u>3,136</u>	<u>974</u>	<u>104</u>	<u>870</u>
<u>Fayoum</u>							
Available, 1 Jan. 1981		2,500	1,750	750			
Under Construction, 1 Jan. 1981		-	-	-			
To be provided under filtration plant expansion program (Table B-2)		1,634	1,634	-			
Net additional needed		10,641	6,959	3,682	2,607	1,392	1,215
TOTAL REQUIREMENTS	<u>44,323</u>	<u>14,775</u>	<u>10,343</u>	<u>4,432</u>	<u>2,607</u>	<u>1,392</u>	<u>1,215</u>
<u>Menia</u>							
Available, 1 Jan. 1981		2,500	1,500	1,000			
Under Construction, 1 Jan. 1981		-	-	-			
To be provided under filtration plant expansion program (Table B-2)		1,080	1,080	-			
Net additional needed		9,265	6,412	2,853	2,223	1,282	941
TOTAL REQUIREMENTS	<u>38,534</u>	<u>12,845</u>	<u>8,992</u>	<u>3,853</u>	<u>2,223</u>	<u>1,282</u>	<u>941</u>

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Table B-3 (contd/..)

<u>Notes</u>	1)	From Table B-2
for	2)	It is assumed that the filtered water storage should amount to 8 hours of total filtration capacity for the day. Of this, about 30 percent of storage should be elevated and the remainder underground.
Cols.	3)	
	4)	
	5)	It is assumed that the 1980 average cost of providing underground storage, independent
	6)	of the filtration plant itself would be 150 L.E./M ³ and that for elevated storage the cost
	7)	would have been 250 L.E./M ³ . Amounts reported in these columns take into account inflation
)	for two years at 15 percent (1.15) ² .

Table B-4

Projected Requirements for Extension of Primary Network for Water
Distribution to 1990
Provincial Cities of Beni Suef, Fayoum, and Menia.

(Monetary amounts in thousands of Egyptian pounds)

City	Network Requirements for 1990 (Km)			Estimated Cost @ L.E. 33,000/Km
	Total	Existing	Additional Required	
	(1)	(2)	(3)	(4)
Beni Suef	103.5	66	37.5	1,238
Fayoum	106	60	46	1,518
Menia	91.3	35	56.3	1,858

Notes for numbered columns

- (1) Total requirements include amount to provide a network general purpose distribution main for each Km of street in the town plus an amount sufficient to provide mains to serve properties serviced by major national roads within the town.
- (2) Information provided by municipal officials.
- (3) Additional requirements include provision for about 25 percent increase in the Km of streets (and therefore) distribution network mains) to accomodate increase of population of about 34 percent to 1990.
- (4) Estimated basic cost for 1980 is L.E. 25,000/Km, adjusted for a two year inflation of 15 percent per annum to approximately L.E. 33,000/Km for mid-1982. The estimated cost is an average cost obtained from a chart representing the cost per meter of pipe versus the pipe diameter.

NB. This table does not take into consideration requirements for replacement of water mains. A general provision for this aspect of water network is contained in Table B-7

Table B-5
 Projected Requirements for Trunk Distribution Mains and for Reinforcing Mains
 Water Systems to 1990.
 Provincial Cities of Beni-Suef, Fayoum, and Menia.
 (Monetary amounts in thousands of Egyptian pounds)

City	Estimated Network of Major Mains (300 mm and over) Required in Km			Estimated Cost of Additional Major Mains
	Total	Available 1 Jan. 1981	Net Additional Requirements	
	(1)	(2)	(3)	
Beni-Suef	11.1	6.0	5.1	506
Fayoum	8.8	5.0	3.8	380
Menia	12.6	5.0	7.6	750

Notes for numbered columns:

- (1) } Precise information is not available concerning the Km of major mains that are in place within the cities.
 (2) } Amounts for Beni-Suef and Menia have been estimated from measurement on maps supplied.
 (3) } No information was available in respect to Fayoum; estimate is based upon general knowledge of the city and other factors concerning the water distribution system.
- (4) The estimated cost of major mains, averaging 400 mm is estimated at L.E. 75,000/Km in 1980, with escalation to L.E. 99,000/Km for 1990.

Table B-6

Projected Requirements for Metering of Water Services to 1990
Provincial Cities of Beni Suef, Fayoum, and Menia.

(Monetary amounts in thousands of Egyptian pounds)

City	Estimated Population Served and not Served by Water meters, 1980 (000)			Estimated Population Increase to 1990 (000)	Total Population Required to be Served by additional Meter Installations (000)	Number of Additional Meters Required (000) @ 1 meter/5 persons	Estimated Cost of Installation of Additional Meters @ L.E.28/ meter.
	Total Population	Population Served	Population Not Served				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Beni-Suef	134	70	64	46	110	22	616
Fayoum	189	126	63	65	128	29.4	717
Menia	164	82	82	56	138	27.6	771

Notes for numbered columns:

- (1) Population for 1980 estimated on basis of population in 1976 with annual compound rate of increase of 3.0 percent.
- (2) Population served by meters estimated on basis of ratio of existing network to present network of water service mains. (Confirmed by data in El Fayoum City Redevelopment Project report of University of Cairo, October, 1980 .
- (3) Col. 1 - Col. 2.
- (4) Estimated population increase of 3.0 percent per annum compounded 1980-1990.
- (5) Estimated population requiring additional meters, is sum of population in column 3 plus col. 4.
- (6) Population in Col. 5 ÷ 5 average household size = number of water meters required to complete metering program.
- (7) Estimated cost at L.E. 28 per meter based upon average cost in 1973, reported by Provincial Water Supplies Project of 18.50 L.E. adjusted for 15 percent per annum compound inflation rate to 1982. (Vol. 5, page 93-94)

Table B-7

Projected Miscellaneous Cost Items in Improvement of Water Supply System to 1990
 Provincial Cities of Beni Suef, Fayoum, and Menia.

(Monetary amounts in thousands of Egyptian pounds)

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City	Item	Comment	Estimated Cost in L.E.
	(1)	(2)	(3)
<u>Beni-Suef</u>			
1.	Expansion of capacity of new treatment plant	The new water treatment plant at Beni-Suef has a potential for 200 LPS; however, it appears that certain facilities are not being installed that will result in an actual capacity to 100 LPS. To install necessary supplemental facilities: Pumps Diesel standby generating equipment	61 150
2.	Additional general pumping capacity	Booster pumps are required at some points in the system. Estimates of cost not available; reserve contingent amount	100
3.	Network rehabilitation	Many of the pipes in the system are subject to frequent leak and break history. No record of any systematic cleaning and relining of mains. Contingency	500
			<u>811</u>
<u>Fayoum</u>			
1.	Upgrading of Kohafa Plant	Provide new intake above sewage line; new alum mixing changers and injection system; covers for 1965 filters	100
2.	Additional general pumping capacity	Same as Beni Suef	100
3.	Network rehabilitations	Same as Beni Suef	500
			<u>700</u>
<u>Menia</u>			
1.	Rehabilitation of 1967 Plant	General rehabilitation to secure full 200 LPS design capacity	200
2.	Additional pumping capacity	Same as Beni Suef	100
3.	Network rehabilitations	Same as Beni Suef	500
			<u>800</u>

Table B-8
 Projected Requirements for Sewage Treatment Facilities to 1990
 Provincial Cities of Beni Suef, Fayoum, and Menia.

(Monetary amounts in thousands of Egyptian pounds)

City	Production Capacity 1990 LPS	Present Sewage Treatment Capacity LPS	Required Sewage Treatment Capacity, 1990 LPS	Projected Cost
	(1)	(2)	(3)	(4)
<u>Beni-Suef</u>				
Existing		300	300	
Under construction, 1 Jan. 1981		-	-	
Additional requirements, 1980-1990		-	63	1,247
TOTAL	<u>363</u>	<u>300</u>	<u>363</u>	<u>1,247</u>
<u>Fayoum</u>				
Existing		(See Note)	32	
Under construction, 1 Jan. 1981			460	
Additional requirements, 1980-1990			21	405
TOTAL	<u>513</u>	<u>-</u>	<u>513</u>	<u>405</u>
<u>Menia</u>				
Existing		200	200	
Under construction, 1 Jan. 1981		-	-	
Additional requirements, 1980-1990		-	246	4,871
TOTAL	<u>446</u>	<u>200</u>	<u>446</u>	<u>4,871</u>

Notes to numbered columns:

- (1) The LPS average water flow into system projected for 1990 is from Table B-2, Col. 3.
- (2) Present sewage treatment capacity, except that the plant in Fayoum (with nominal rated capacity of 290 LPS) is operating at only a small fraction of that capacity. It is to be refurbished and will, together with the plant being constructed, meet needs through 1990 and perhaps beyond.
- (3) Requirements computed on basis of (Col.1) x (1.25) x (.80) to take into account peak demands and losses from system that do not flow through to sewage treatment plant.
- (4) Estimated cost of L.E. 19,800 per LPS in mid-1982.

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Table B-9
 Projected Primary Sewer Network Requirements to 1990
 Provincial Cities of Beni Suef, Fayoum and Menia

(Monetary amounts in thousands of Egyptian pounds)

City.	Sewer Network in 1980 Km			Requirements to Accommodate Incremental Population to 1990 Km	Total Km of Network Sewers Required 1980-1990	Projected Costs
	Total	In Service	Required to be Constructed.			
	(1)	(2)	(3)	(4)	(5)	(6)
Beni Suef	84	30	34	21	55	2,563
Fayoum	85	30	55	21	76	3,541
Menia	73	24	49	18	67	3,112

Notes to numbered columns :

- (1) The kilometers of sewers required under existing street and highway conditions are taken from data in Table B-4, adjusted for incremental requirements during 1980-1990 period.
- (2) Data concerning the actual amounts of sewer network in place in the cities is open to substantial question. The Provincial Water Supplies Project, Vol. 2, p. 119, reports the percentages of 1976 population served by sewers in these cities as follows : Beni Suef, 59; Fayoum, 17; and Menia, 31. Information supplied by local officials during the course of this study consistently places the percentages at substantial higher levels-- either directly or by conversion of reported sewage flow through the current plants. Therefore, the estimates used in Col. 2 are open to substantial potential error; however, they represent a working amount for the present. The University of Cairo report entitled El Fayoum City redevelopment project (October, 1980), p.19, states that the Fayoum network serves "about 50% of the total urban buildings and all the pumping stations are overloaded.
- (3) Col. 1 minus Col. 2. Therefore subject to error potential noted above.
- (4) A 25 percent increase over Col. 1, to accomodate estimated increase of about 34 percent in population in 1980s.
- (5) Sum of columns 3 and 5. Therefore subject to potential errors indicated in note concerning col. 2.
- (6) Estimated units cost of L.E. 46,600 as of mid-1982 taking into account 15 percent inflation rate 1980 to 1982.

Table B-10

Projected Miscellaneous Sewerage Requirements to 1990
 Provincial Cities of Beni-Suef, Fayoum, and Menia.

(Monetary amounts in thousands of Egyptian pounds)

City	Item	Projected Costs
Beni-Suef	40 drying beds @ L.E. 5,000	200
	Booster pump stations and force mains	1,000
		<u>1,200</u>
Fayoum	Upgrade Lotfalla booster station	75
	Refurbish old sewage treatment plant	250
	Provide for new pumping stations	2,000
		<u>2,325</u>
Men_a	Rehabilitate sewage treatment plant, including reinstallation of electric power line	350
	Increase booster pumping and force main capacity	1,000
	Rebuild 7 km access road @ 30,000/Km.	210
		<u>1,560</u>

Note:

These are items which have been mentioned by operating personnel as needed. Pricing is extremely tentative in the absence of any comprehensive inventory of facilities or cost of rehabilitation and/or supplementation.

Table B-11
 Projected Requirements for Street Paving to 1990
 Provincial Cities of Beni-Suef, Fayoum, and Menia

(Monetary amounts in thousands of Egyptian pounds)

City	1980 Streets Km			Incremental Streets Required to Accomodate 1990 Population, Km	Projected Costs		
	Total	Paved	Unpaved		Total	Existing Streets @ LE.40,000/Km	Incremental Streets @ LE.52,000/Km.
	(1)	(2)	(3)		(4)	(5)	(6)
Beni-Suef	80	30	50	20	3,040	2,000	1,040
Fayoum	85	30	55	21	3,292	2,200	1,092
Menia	70	30	40	18	2,536	1,600	936

Notes to numbered columns:

- (1), (2) & (3) Values supplied by the provincial cities.
- (4) 25 percent of Col. 1.
- (5) Sum of Cols. 6 and 7.
- (6) Estimated cost of paving existing streets is L.E. 30,000 per Km in 1980, escalated for two year's inflation at 15 percent per annum, compounded.
- (7) Estimated cost of paving and developing new streets is 130 percent of cost of paving of an existing street.

APPENDIX C
OPERATION AND FINANCING OF THE
WATER AND SEWERAGE SERVICES

APPENDIX COPERATION AND FINANCING OF THE
WATER AND SEWERAGE SERVICES

The purpose of this Appendix is to provide a schematic analysis of the manner in which water and sewerage operations within the municipality could be conducted, with special reference to the system of charges required to make such services self-supporting.

Under the specific set of assumptions set forth below, an illustrative set of tariffs that would have to be charged to the users for water and sewerage services would be established. Concerning the legal and administrative framework within which water and sewerage services would be rendered by the municipality, there are two broad alternatives :

- 1) Establish a "for profit" utility company at the municipal level that would own and operate all water and sewerage facilities. It would set the rates to users in accordance with its own economic and financial criteria. It would operate with a great deal of freedom from the regular administrative channels of the government.
- 2) Establish a department within the government which would operate from a special "utility fund". The fund would be used to finance the services and to make investments of reserves therein pending the need for such funds to provide for extension, maintenance, and/or renewal of elements of the systems.

Under both alternatives the operation of these services would be fully self-sustaining in the sense that the fund would have sufficient resources to pay all operating and maintenance costs, and amortization of investment through provision for realistic depreciation of capital assets and, payments of interest on capital investment.

The first of these two alternatives has been recommended by the Benni-Taylor study (entitled Provincial Water Supplies Project : Final Report) and is discussed at length there. Although the approach recommended there offers a number of important advantages, the second alternative is preferable because it will maximize participation by the municipality in providing these essential services and because it could produce a greater impact towards the goals of self-government and decentralization. The features of this second alternative are discussed below.

A Water and Sewerage (or Wastewater) Department would be established within the municipal government under the executive supervision of the Mayor. The elected council of the municipality would be responsible for establishing the general regulations under which the Department would function and would have a right to establish the standards under which rates for the services are to be established.

The costs of production and distribution of water and for the collection and treatment of sewage would be determined under generally accepted cost accounting principles used in commercial operations, except for omission of taxes and the concept of a return on investment beyond that represented by interest on the depreciated value.

The Department would provide water and sewerage services to two types of users within the municipality : (a) domestic users, and (b) non-domestic users (institutional, commercial, and industrial). At present these two types of users pay a uniform rate for water service and make no payment for sewerage services. The amount paid represents only a small fraction of actual costs of providing the water service and makes no contribution to payment for sewerage services. All users are therefore substantially subsidized by the central government.

It is recommended that, for the future, rate structures be applied to the two categories of users in the following manner :

1. Non domestic users, which for purposes of illustration are here assumed to consume approximately 25 percent of total water and sewerage services, would pay full rate for the services. That is, they would pay charges representing the full cost of the services utilized.¹
2. For domestic users, full charges would also be collected; however, a portion of the charge would be billed directly to the user and a portion to the central government for payment from its general revenues. The system would function in this manner :
 - a. For a given minimum of water used, (50 liters per day per person in the household is used here for illustrative purposes) the user would pay roughly the same rate as is now in effect.
 - b. For the remainder of the costs of the minimum amount used the central government would be billed (in lieu of its present contributions for water services).
 - c. For all water used in excess of the minimum amount per member of the household, the householder would be billed the full costs, i.e., a rate identical to that for institutional, commercial and industrial users.

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It is recognized that the cost of providing water to most household users is greater on a per liter basis of consumption than the average cost of providing water services; however, it is not appropriate here to undertake to construct more sophisticated patterns of charges which doubtless would eventually become operative.

The financing of sewerage services would be established as a surcharge computed as a percentage of the water bill, which for purposes of this discussion is assumed to be 60 percent of the water costs.²

In effect, the plan would result in a billing of domestic water and sewer services in part to the user and in part to the central government. Although it is regrettable that the system could not be made fully self-supporting at the outset from direct billings to users, it appears that such a course would involve charges of such high amount that they might well require a (socially and politically) unacceptable portion of the income of families in modest and poorer circumstances. Should eventual calculations prove it feasible to bill services fully to users now, this would be appropriate. In any event, the subject should be reviewed periodically with a view to a gradual transfer of the subsidized portions of the cost to the domestic users as the economy of the Nation improves and the ability of the middle and lower income families increases.

The effect of government subsidies on the rate structure is discussed in the economic analysis of the operations of water and sewerage systems presented below.

Assumptions for the Economic Analysis

The economic analysis is carried forward under these assumptions:

1. The year is 1985, with all amounts in L.E. 1985, assume a rate of inflation of 10.0 percent per annum for the 1981-85 period.
2. The actual value of all water and sewerage facilities (plants, networks, and other elements) is assumed to be L.E. 30 million.
3. All facilities have been financed by the municipality with the help of grants and long term loans. Some interest payments are therefore due yearly.
4. Depreciation of these facilities are on a straight-line basis with an average life of 30 years.
5. The system provides users with 30,000 M³ of billable water per day. Waste water requiring treatment would be at about 80 percent of total water produced and at a somewhat larger percentage of billable water. This system would serve adequately a population of about 215,000 persons.

² This system is not intended to preclude adjustment of rates to meet certain unusual circumstances. Thus bottlers of soft drinks discharge little of their water consumption into the sewers. On the other hand certain types of industrial users discharge effluents of a characteristic that requires unusually expensive treatment. In due course adjustments could be made to provide suitable degrees of equity insofar as sewerage services are concerned.

6. This daily amount of water consumed is presumed to be distributed as follows :

- a. Non-domestic users 7,500 M³
- b. Domestic users
 - (1) Minimum consumption 10,000 M³
 - (2) Excess consumption 12,000 M³

7. The cost per M³ of water and sewerage services to the Utility Fund are estimated as follows :

	L.E./M ³	L.E./Year
a. Water		
(1) Operating costs	.040	438,000
(2) Maintenance costs	.020	219,000
b. Sewerage		
(1) Operating costs	.024	263,000
(2) Maintenance costs	<u>.016</u>	<u>175,200</u>
Total Operating Costs	.100	1,095,000
c. Depreciation Charges	.091	1,000,000
d. Interest Charges	.046	500,000
e. Contingencies	<u>.013</u>	<u>142,350</u>
Total Costs	<u>.250</u>	<u>2,737,550</u>

Based upon the above assumptions the rates charged to municipal users for water and sewerage services would be as follows, with the indicated part of the first 50 liters of water and associated sewage costs being billed to the government :

	L.E./M ³	L.E./Year
Non-domestic users	.250	684,375
Domestic Users		
Minimum (50 LCD) to the user.	.035	127,800
To the Government	.215	784,750
Excess use	.250	<u>1,140,625</u>
		<u>2,737,550</u>

If there were no governmental subsidy and the full costs were distributed among the users providing, however, that the .035 L.E./M³ preferential rate were maintained for the first 50 LPD/C the rates and distribution of cost would have to be as follows:

	L.E./M ³	L.E./Year
Non-domestic users	.4085 +	1,118,459
Domestic users		
Minimum	.035	127,800
Excess use	.4085 +	<u>1,491,291</u>
		<u>2,737,550</u>

Using the alternatives presented above, the annual charge for water and sewerage services would be as follows for a family of 5 persons, depending upon the amounts of water used :

Liters of Water per Day Per Person	<u>With Reduced Minimum Use Charges</u>		Flat Rate of .250 LE/M ³ for all Use
	<u>With Government Subsidy</u>	<u>Without Governmental Subsidy.</u>	
50	3.19	3.19	22.81
75	14.60	21.83	34.22
100	26.01	62.29	57.03
125	37.54	80.93	68.44
150	48.97	99.57	90.85
200	71.63	136.85	101.76

Assuming an annual income of L.E. 1,000 for the family, this would represent total charges ranging from 0.3 percent of income to 13.7 percent, depending upon the alternative used and the volume of water use. The table helps to indicate that in any event the pattern of charges would help to discourage waste of water.

It could be noted here that the depreciation charge on the plant accounts for about 36% of the total cost of providing the services. The emphasis in other parts of this report upon an efficient design of the water and sewerage system that will optimize the capital investment now assumes a proper significance and it has a very direct impact on the rate structure.

Comments

1. The above analysis assumes 100 percent billing and collection efficiency. In operation, there would almost always be some losses.
2. Non-domestic users are estimated at 25 percent of total consumption. This seems reasonable for the three cities under study. In fact, this is quite similar to the assumptions of the Provincial Water Supplies Project: Final Report, which presents water consumption data in two delta governorates. A higher non-domestic consumption would, of course, affect the illustrative billings to families in case there were no governmental subsidy--with the costs being applied to all users but still with a minimum consumption subsidized by the other users.

3. Under the above rate structure the Utility Fund would have available approximately L.E. 1,142,350/per year for plant renewal or extension. Pending requirements for these purposes, these moneys could be invested in order to increase the accumulated capital of the Utility Fund. This investment operation would provide valuable experience to local officials, including the elected council-- whose approval should be required on all such investments. It might be that some of these funds could be used to help complete elements of the program that may not be comprehended by the U.S.A.I.D. program or alternatively in economic projects deemed of benefit to the community. If invested in other projects, great care will be required to see to it that the investments are safe and that the Fund will not be short of cash at the time of required expenditures for extensions and replacement on renewal of existing facilities.

A further advantage would be the development of a record of performance under which the municipality should be able to enter the financial markets at a later date to borrow capital required in addition to the Utility Fund assets for renewal, improvement and extension of these services.

GLOSSARY

The function of this glossary is to define certain words and phrases as used in this report.

A.I.D.: The Agency for International Development of the United States Department of State.

Accrual Basis: A system of accounting under which revenues are recorded when earned and expenses when incurred. Differs from Cash Basis (q.v.). See also Depreciation.

Approved Budget: As related to the budgets for BABs (q.v.) used in local government finance in Egypt denotes a budget that has been approved by the Ministry of Finance. Includes both revenue and expenditure elements of such budgets.

BAB: A budgetary classification used in local government finance in Egypt. BAB-1 denotes personal services, BAB-2 denotes non-personal services expenditures for operation and maintenance. BAB-2 relates to capital outlays financed from regular resources of the central government. BAB-4 is used to record transactions financed from loans.

BOD: An abbreviation for Biological Oxygen Demand which is a measure of the degree to which impurities have been removed from sewage.

Budget: A document which sets forth proposed plans of expenditures and the sources of funds planned for their financing.

Capital Budget: As used in this document, the plan of expenditures for capital outlays (q.v.) for a designated fiscal year. (In some American literature term is used interchangeably with Capital Program, (q.v.)

Capital Outlay: An expenditure for land, construction, or equipment with an expected life of more than one year from date of acquisition.

Capital Program: A document showing the planned expenditures for land, physical facilities (q.v.) and equipment and the proposed sources from which these expenditures are to be financed.

Cash Basis: A system of accounting under which revenues are recorded when realized and expenditures are recorded when payment therefore is made.

Chlorination: A process utilized in water purification by which chlorine is added to filtered water in amounts deemed sufficient to destroy harmful bacteria.

Collector: As applied to a sewerage system the term relates to major pipes or conduits which operate under a gravity flow system. (See also Force Main).

Council of Governors: A body operating at the ministerial level in Egyptian central government. It is composed of the Governors of the Governorates. It has taken the responsibilities of the former Ministry of local government.

Glossary, page 2.

Deficit Financing : A system of financing under which a unit of government receives and manages its own revenues but which at the same time depends upon grants from another government to cover any differential between revenues received and expenditures recorded. (See also : Grant Financing).

Decentralization : A term widely used in Egyptian governmental affairs to denote the process by which responsibility and authority is transferred from the central governmental ministries to the provinces or local units of government.

Directorate: The organizational unit at the Governorate (q.v.) level through which functions assigned to central ministries are conducted.

Elected Council : The councils consisting of elected representatives of the people at the governorate, municipal, markaz, or village-council level of local government.

Elevated Storage: A tank or other device for storing water at levels significantly above the ground level; its function is two-fold: to act as a reservoir and to act as a pressure stabilization device against which pumps in a water system seek to maintain a stable pressure. (See also : Underground Storage).

Executive Council: The council consisting of the principal executive in the governorate, municipality, markaz, or village-council, designated representatives of the Directorates, and usually some other local administrative official or officials.

Expenditure: A cost incurred or a payment made, depending whether the accounting system is on an accrual or cash basis (q.v.).

Filtered Water Storage: The process of storing water that has been filtered temporarily to facilitate completion of treatment or for longer periods to provide a reserve from which water may be withdrawn during periods of peak daily flow. (See also : Elevated Storage and Underground Storage).

Filtration Plant: A plant at which water is passed through filters for the purpose of removing suspended solids--usually following a preliminary addition of chemicals to facilitate flocculation. Usually the term is used to comprehend other aspects of water treatment, including chlorination (and in some instances removal or neutralization of non-organic substances in the filtered water).

Fiscal Year: The period of time established by authority as constituting the year to be used for the financial operations of a governmental or other unit used in administration. In Egyptian local government the calendar year was used as the fiscal year until mid-1980 at which time a July 1 - June 30 fiscal year became effective.

Force Main: A main through which sewage is transported under greater than atmosphere pressure.

GOPP: The General Organization for Physical Planning in the Ministry of Planning of the central government of Egypt.

GOPW: The General Organization for Potable Water in the Ministry of Housing and Reconstruction of the central government of Egypt.

GOSSD: General Organization for Sewerage and Sanitary Drainage in the Ministry of Housing and Reconstruction of the central government of Egypt.

Governor: The chief executive of a governorate. Appointed by nomination from the President and holding ministerial rank.

Governorate: The term used to denote the major unit of government in Egypt below the central government and through which many of the services and facilities required for the operation of local governmental functions are provided. There are 26 governorates in Egypt.

Grant Financing : A system of financing under which one government finances an element of cost for another government such as governorate, municipality, markaz, or village council). Ordinarily a feature is that the grant is made either in specified amount or in an agreed proportion of the total costs involved. Thus capital outlays (BAB-3) are largely financed through grant financing in Egypt whereas personal services (BAB-1) and non-personal service operating expenses (BAB-2) are financed under a deficit financing (q.v.) basis.

Grid: The network or system of water pipes, sewer pipes, streets, or lines for transmission of electric power used to provide services to residents and businesses in urban areas.

Headquarters: The portion of the governorate or other organization that provides executive direction and oversight to the operations within that governorate or other local unit.

Headquarters Budget : In Egypt that portions of the budget of a governorate or other local unit for BABS 1,2,3 and 4 which is allocated initially to the governorate for exercise of discretion in relation thereto. It is to be contrasted with the budgetary allotments for the functions performed under the Directorates at the governorate or subsidiary local unit levels.

Infrastructure : Generally used in the context of extending to the physical facilities required to sustain urban areas, especially streets, housing, and public utilities (water, waste water, electricity, and solid waste).

Interest on Investment : Interest on the unamortized capital in public utilities serving urban areas. Ordinarily calculated upon the depreciated value of such facilities. (In some cases it is calculated on the depreciated value plus the outstanding debt where the amount of such outstanding debt exceeds the depreciated value).

LPS : Liters per second. A measure used to identify the capacity of a water or waste water plant to process raw water or sewage. (A water treatment plant with a rated capacity of 100 LPS will, if operated continuously at full capacity for 24 hours, produce 8,640 M³).

LCD : Liters per capita per day. A measure to relate water or waste water to population of the area served.

Law 43 of 1979 : The most recently adopted law in Egypt generally regulating aspects of administration of local government.

M³: A cubic meter. Equivalent to 1000 liters.

Markaz: A district within a governorate, used for purpose of local governmental administration, consisting of the markaz city, and village councils within the markaz.

Markaz City : The seat of government for the Markaz. It provides general administrative services in the government of the markaz, which has no independent governmental administrative system, other than an elected markaz council.

Mayor : Technically the Chairman of the Executive Council of a city. Title is used as an alternative designation of the office.

Municipality : A general term applying to a provincial and markaz city. (It does not denote a separate municipal corporation as understood in the U.S.A.)

National Investment Bank : An organization created as of July 1, 1980, for the purpose of assisting in the administration of approved appropriations for BAB-3 in the governorates and other local units.

Network : See Grid , (q.v.).

Operation and Maintenance Expenditures: All expenditures required for governmental operations other than capital outlay. If the accounting system allows depreciation charges these are sometimes included as elements of operation and maintenance and sometimes separately identified. In local government in Egypt these are normally the expenditures chargeable to BABS 1 and 2; however, some of the expenditures chargeable to Special Accounts (q.v.) for other than capital outlays are properly chargeable as operating and maintenance expenditures.

Plan - Annual: As used in Egypt the term is synonymous with the concept of proposed budget for operating, maintenance, and capital outlay expenditures to be paid from BABs 1,2,3 and 4. It does not embrace expenditures to be made from a Special Account (q.v.). It also ordinarily includes a statement of the revenues expected to be collected by local governments and allocated under the accounting regulations and provisions of law to the respective BABs.

Plan - Five Year: Initially referred to the plan prepared in 1977 for the calendar (and then fiscal) years of 1978, 1979, 1980, 1981, and 1982. In 1980 the Fiscal Year (q.v.) was changed for local governments and also at that time local governments were required to furnish as a part of their annual plans projections of expenditures for items included in the annual plan for the succeeding four years. The five year plan prepared in 1977 was published in Arabic and English language editions; no publication arising from the requirements of 1980 are available.

Physical Facility : As used in this report the term embraces land, structures, and equipment (whether stationary or movable) required to make a facility operational. It does not include capital outlays for other purposes, e.g., motorized equipment.

Proposed Budget : The budget as submitted to a person or unit of government with authority to amend or adopt the budget. Thus, the proposed budget of the markaz is submitted to the Governor, the Executive Council, and the Governorate Elected Council for approval and/or adoption in original or amended form. That budget is still a proposed budget when submitted to the central government.

Provincial City : The capital city of a governorate. It is also the markaz city for the markaz in which it is situated.

Requested Budget : See Proposed Budget (q.v.)

Revenue Receipts : Money credited as revenue is realized during a fiscal period. It may be credited on a cash or accrual basis, depending upon the accounting system in use. (Money received for purposes other than financing expenditures, e.g., money received in trust, is not considered a revenue receipt).

Reinforcing Main : A water main constructed in such a manner as to provide additional distribution to elements of the existing network for water distribution within the system. (Distinguished from a supply main which provides the primary source of water for an element of the network).

Secretary General : The principal administrative officer within a governorate, responsible directly to the Governor for day-to-day governmental operations.

Glossary, page 6,

Sewer : A pipe designed to transmit sewage.

Sewage: The effluent from buildings and surface to be transmitted through sewers.

Sewerage: The collective concept of the entire process of handling waste water to the point of treatment or discharge into a watercourse. (In some communities, but not in Egypt, it may also include sewers on a combined or separate basis for the handling of storm water).

Special Account : As used in Egypt it relates to three separate accounts which governorates are authorized and/or required to maintain for receipt, custody and expenditure of specified moneys outside the budgetary and accounting requirements relating to BABs 1,2,3 and 4. The three accounts are : (1) Local Services and Development, Account; (2) Proceeds of Disposed Arable and Reclaimed Land Account; and Financing Economical Housing Projects Account. For the local units, only the first type of account is maintained.

Trunk Line : A principal water main used as a distribution main or as a reinforcing main; or , a principal sewer use to collect and transmit sewage from other sewers or a Force Main (q.v.)

Underground Storage : Storage facilities for filtered water other than Elevated Storage (q.v.). Such storage may actually be at ground level or below ground level .

Village Council : The primary organization at the village level for the administration of local government affairs in Egypt.

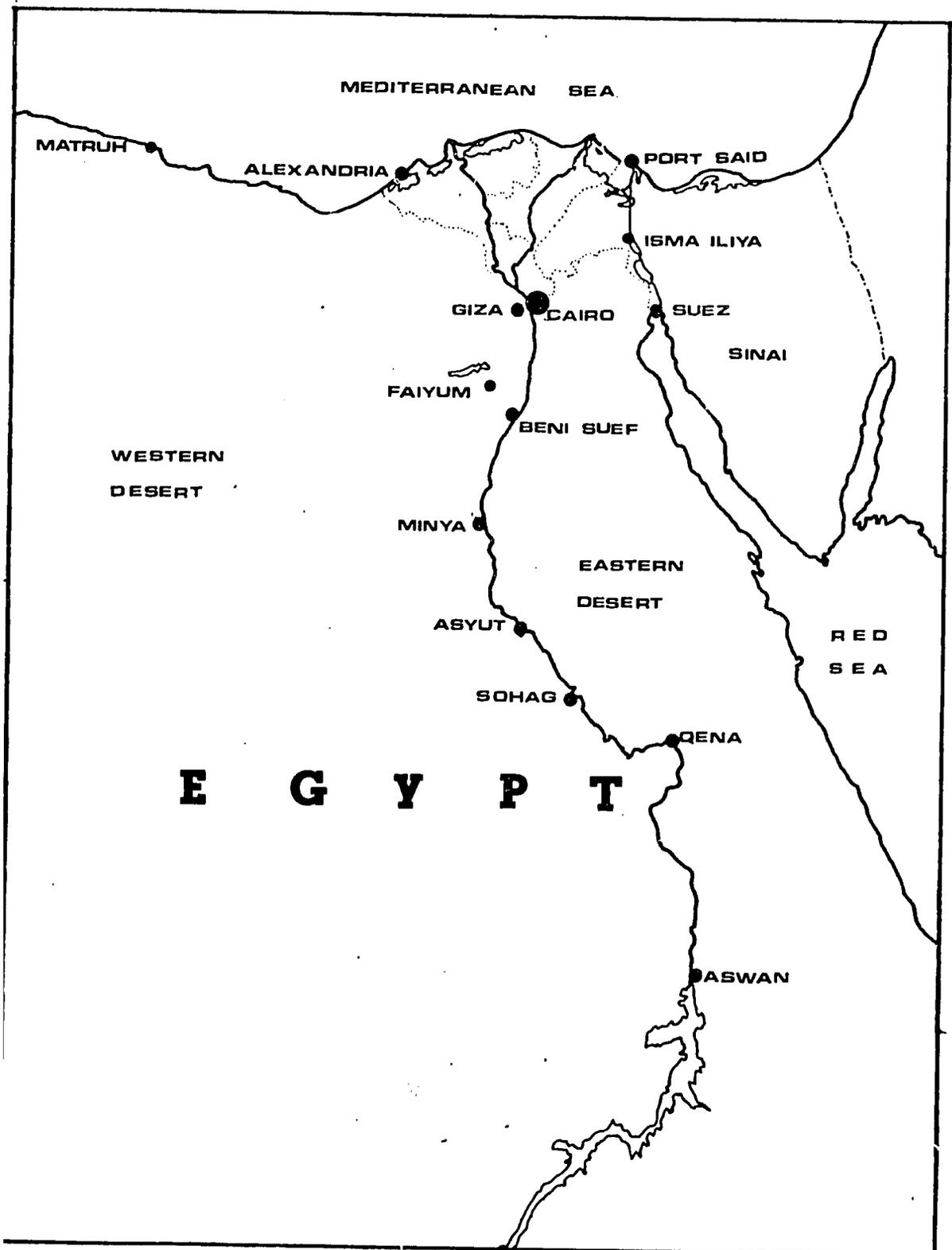
Water Demand : The aggregate amount of water required to be processed from a water treatment plant into the distribution system.

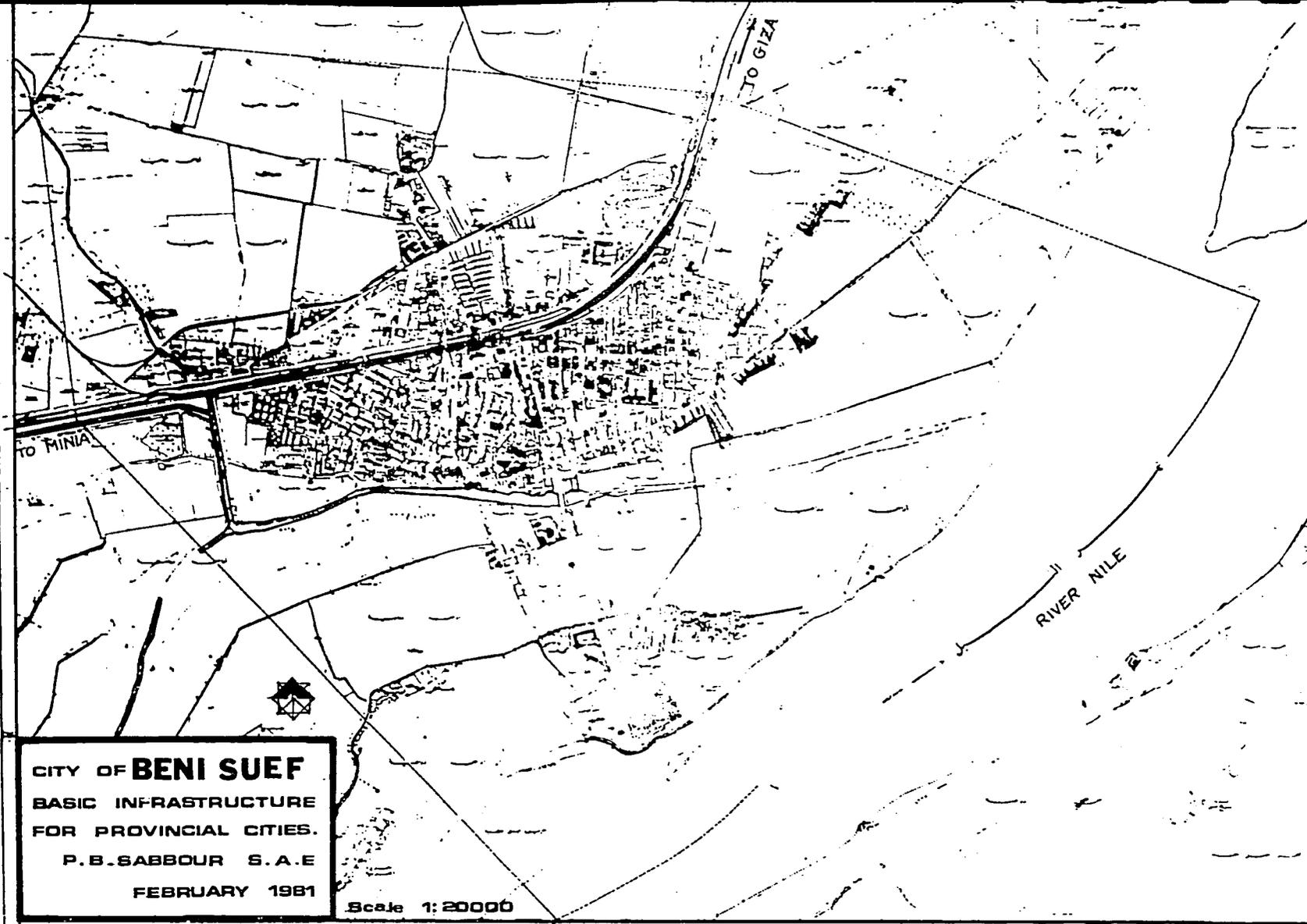
Water Loss: Water entering a water distribution system which does not reach water users.

Water System : A collective concept embracing the entire facilities depended upon to produce and distribute water for residential, commercial, industrial, institutional, and other categories of use.

Water Use : Water delivered to and available for use within premises served by a water system (q.v.).

MAPS





CITY OF BENI SUEF
BASIC INFRASTRUCTURE
FOR PROVINCIAL CITIES.
P. B. SABBOUR S. A. E
FEBRUARY 1981

Scale 1:20000

1/5



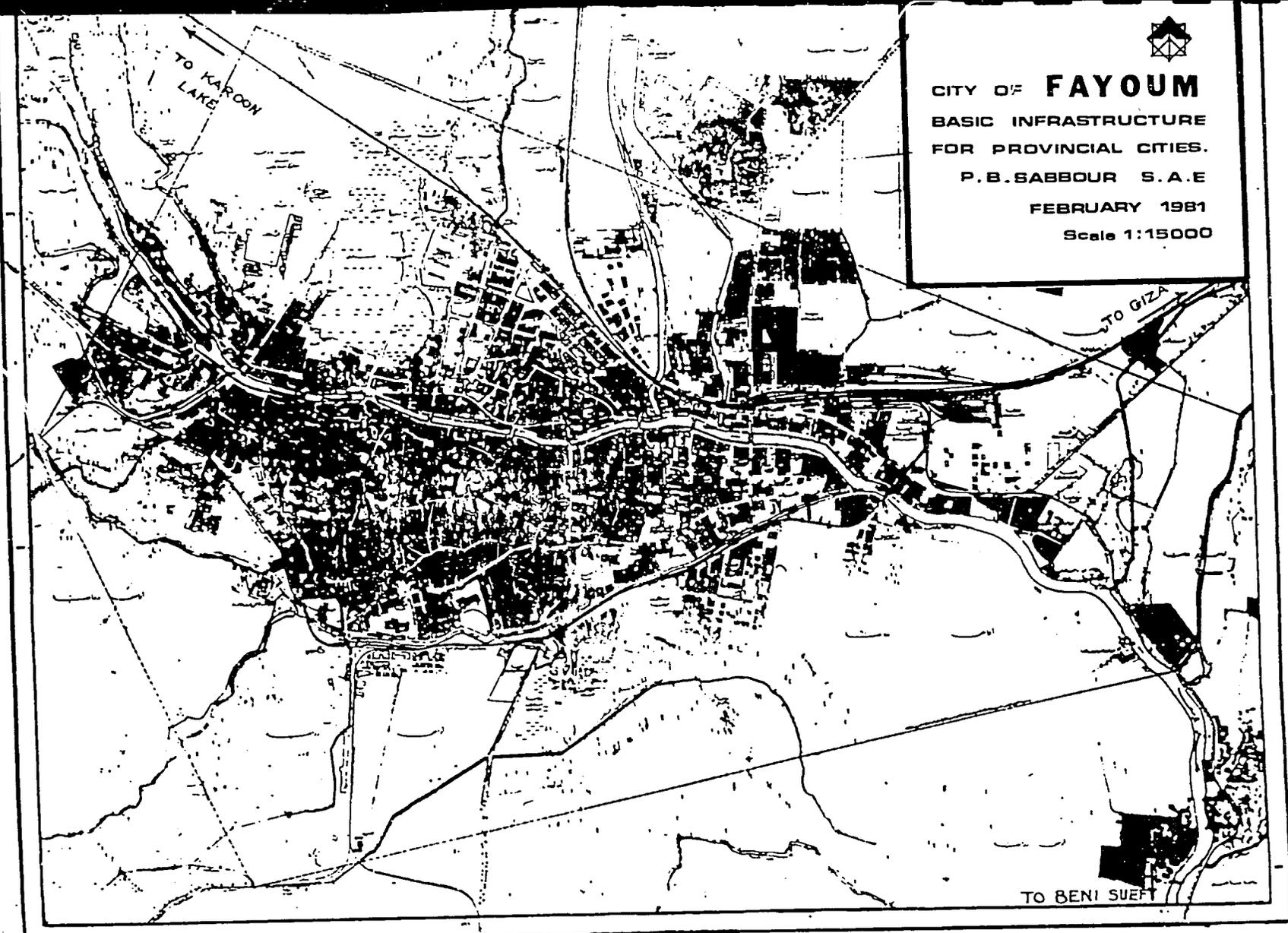
CITY OF FAYOUM

BASIC INFRASTRUCTURE
FOR PROVINCIAL CITIES.

P. B. SABBOUR S. A. E

FEBRUARY 1981

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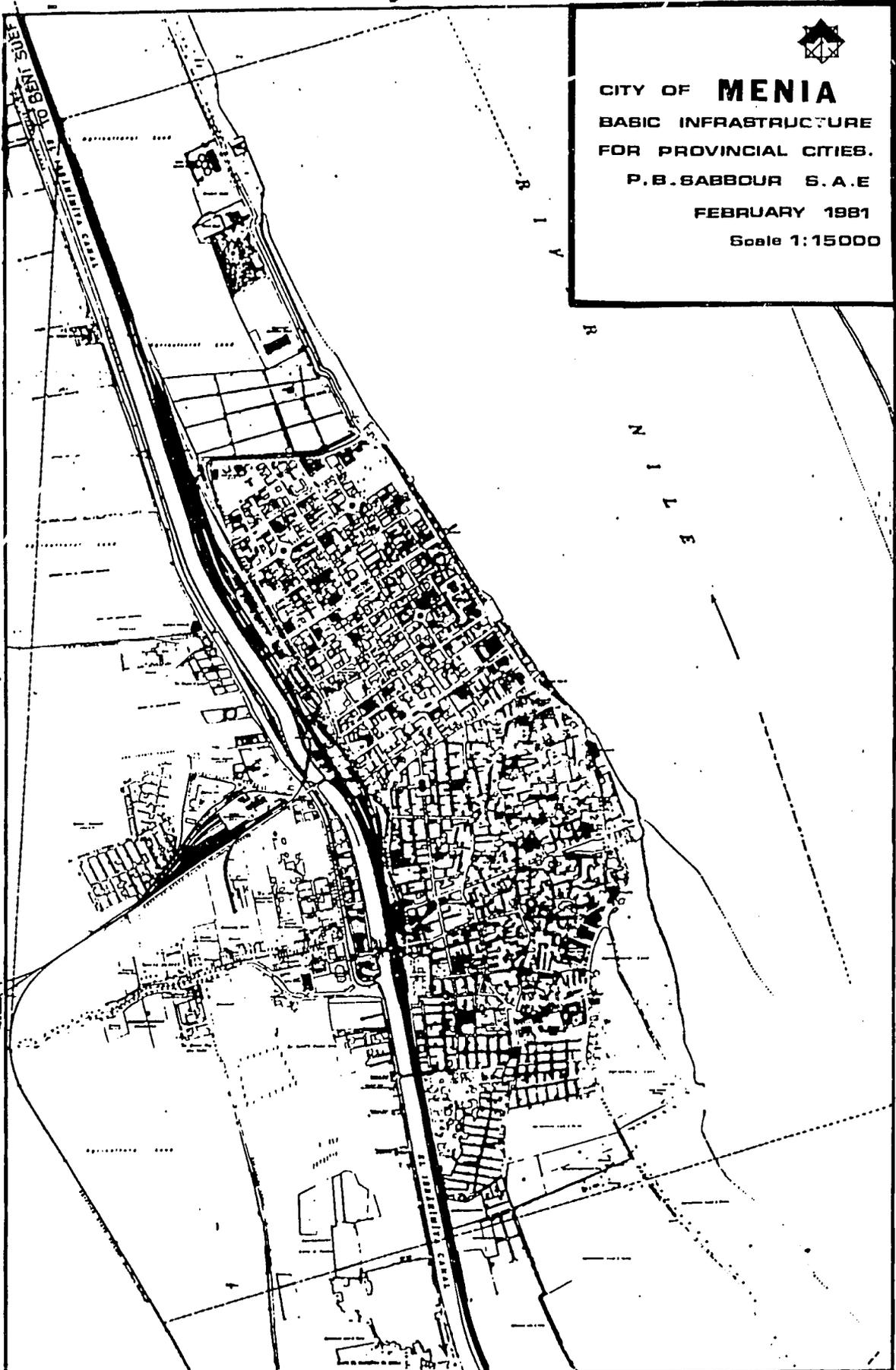


CITY OF **MENIA**
BASIC INFRASTRUCTURE
FOR PROVINCIAL CITIES.

P.B.SABBOUR S.A.E

FEBRUARY 1981

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