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LOCAL DEVELOPMENT II URBAN PROJECT

Submitted to
USAID / CAIRO

Submitted by
WILBUR SMITH ASSOCIATES

in association with

**PUBLIC ADMINISTRATION SERVICE
DEVELOPMENT CONSULTING OFFICE**

**DELOITTE AND TOUCHE
ENGINEERING AND GEOLOGICAL
CONSULTING OFFICE**

INTERIM REPORT
on
O&M IN SUEZ
(February 1992)

PREPARED FOR H.E. THE GOVERNOR OF SUEZ

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(TRANSLATION)
INTERIM REPORT
ON
O&M IN SUEZ GOVERNORATE
Prepared For H.E. The Governor Of Suez

I. PURPOSE

1. The LD II (Urban) Project placed great emphasis on O&M. The intensive technical assistance provided by TAC is planned to be terminated by the end of June 1992. It is, therefore, essential to report to H.E. the Governor of Suez on the current O&M status, achievements and problems, in order to give a clear actual picture of the Suez fleet and needs to keep the fleet in good order.
2. Main topics of this report include:
 - 2.1 Garage and workshop construction and renovation program
 - 2.2 Development of the organization and staffing of a complete and effective O&M hierarchy in the Governorate
 - 2.3 Garages and workshops management:
 - preventive maintenance (PM) planning and programs;
 - repair planning and programs;
 - shop equipment and tools;
 - annual financial needs to keep an 85% fleet availability; and
 - spare parts warehousing systems.
 - 2.4 Income generation and privatization
 - 2.5 TAC support
 - 2.6 Conclusions and recommendations

II. GARAGES AND WORKSHOPS CONSTRUCTION AND RENOVATIONS PROGRAMS

1. Suez joined the local development projects only in the LD II Project which started in 1987. Although the Governorate and districts needed many different services, they responded to the O&M needs and allocated reasonable amounts of money for the construction and renovation of complete O&M facilities. Table 1 shows the garages and workshops construction and renovation program including the Road Directorate garage and workshop that was financed through a special project.
2. Only the Suez District garage is inadequate as there is no place for parking the district fleet. An adequate site should be assigned and used as a parking place for the district fleet.

III. ORGANIZATION AND STAFFING OF THE O&M HIERARCHY

1. Two years ago, when the garages construction program started, TAC O&M Team in cooperation with the concerned governorate officials developed a complete net of organization charts for districts and central garages and workshops.

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Table 1
CURRENT GARAGES AND WORKSHOPS
CONSTRUCTION AND RENOVATION PROGRAM

Phase I - Suez

ZONAL/DISTRICT GARAGE	ZONE	CONTRACTED COMPLETION DATE	UTILIZATION DATE	
			Anticipated	Actual
Central Workshop	Governorate	-	July 1992	
Service Station	Governorate	Jan. 1991	-	March 1991
Upgrading of Arbaeen District Garage	El-Arbaeen District	-	Additional Admin. Floor (April 1992)	Utilized
El-Ganayen District Garage	El-Ganayen District	-	Washing Rack (April 1992)	Utilized
Upgrading of Suez District Garage	Suez District	-	Renovation of an Existing Garage Building (July 1992)*	Utilized
Upgrading of Attaka District Garage	Attaka District	-	Repair of Floor (March 1992)	Utilized
Roads Equipment Serv. Station and Admin. Building (Special Project)	Governorate	-	-	Utilized

* Original contract dates

2. In the O&M needs seminar that was held in late 1990, TAC O&M Team proposed the formation of a central O&M department whose function was to plan, coordinate and control all O&M activities in the Governorate.
3. Appendix A shows this set of organization charts. Unfortunately, approval of the COAO has not been obtained. Accordingly new vacancies are not created, and staffing is not completed.
4. Also, in the O&M needs seminar that was held in 1990, TAC presented a communication chart for the use of the O&M hierarchy and the proposed reporting system and the forms to be used. TAC sees it essential to implement such a system in order that O&M needs, plans and controls would be effective. Governorate H.Q. would have access to accurate information on the actual fleet status and O&M needs. Appendix "B" includes the proposed chart and the recommended O&M forms.
5. Shortage of capable engineers, supervisors, mechanics and semi-skilled labor badly affects O&M activities. The need for completing staffing should be dealt with seriously.

IV. MAINTENANCE MANAGEMENT

1. Preventive Maintenance (PM)

PM programs have been developed and implemented at different rates. Intensive PM OJT has been provided. Performing regular PM for vehicles and equipment has proven very effective, and has had excellent impact on improving fleet availability. The number of simple and level 1 repair has also decreased substantially.

2. Repair Programs

- 2.1 Due to lack of qualified engineers, skilled labor and spare parts, district workshops are not capable of conducting all of the needed repairs. Districts depend on local small private workshops to perform needed repairs.
- 2.2 The central workshop also suffers from a shortage of qualified and skilled staff. It has a minor role in assisting districts by performing levels 2 & 3 repairs. Hopefully, after being upgraded, equipped and well staffed, the central workshop would have the major role in assisting districts and other agencies.

3. Shop Equipment and Tools

- 3.1 A big portion of needed shop equipment and tools has been procured during the last three years. L.E. 292,000 from the LD II Grant have been allocated for these procurements. Table 2 shows the total O&M budget allocations that were expended between FY 1987 and FY 1991.
- 3.2 Districts and the central workshop still need extra shop equipment and tools. A sum of L.E. 350,000 should be allocated for procurement of needed equipment and tools. TAC maintenance experts would assist districts and governorate engineers in preparing equipment and tools lists and specifications.

4. Spare Parts Warehousing Systems

- 4.1 Cardex warehousing systems have not been introduced in all workshops in Suez. It is planned to introduce Cardex warehousing systems in all O&M facilities in Suez.
- 4.2 An effective spare parts inventory control system should be developed within the central O&M department. Annual spare parts needs have to be defined and an adequate budget should be allocated to insure a continuous flow of spare parts.

Table 2

SUEZ GOVERNORATE
TOTAL LD II O&M ALLOCATIONS
FY 1987-1991

FY	O&M ALLOCATIONS IN L.E. 1,000					
	LOCAL SPARE PARTS	REPAIRS IN PRIV. SECTOR	GARAGES CONST- RUCTION	VEHICLE & EQUIP. PURCHASE	SHOP EQUIPMENT & TOOLS	TOTAL
1987	-	-	116	84	-	200
1988	-	-	-	-	-	-
1989	18	58	530	206	247	1,059
1990*	-	28	333	278	28	667
1991**	236	26	487	-	17	766
TOTAL	254	112	1,466	568	292	2,692

NOTES

* Governorate received 3 new garbage trucks in 1991 (allocation of FY 1990).

** Governorate received in 1991, only 40% of the total grant.

Special project in Road Directorate with special funding

5. **Actual Fleet Status**

- 5.1 On-the-road availability of the total Suez fleet is approximately 80%. This is the highest in all of the six urban governorates.
- 5.2 Table 3 shows that Suez is depending on agricultural tractors and trailers in garbage collection. Suez is short of garbage refuse trucks. The Governorate and districts are in urgent need of 10-15 back loading refuse trucks, about five sweeper trucks and two graders (for El-Ganayen District).
- 5.3 Some 13 heavy vehicles and pieces of equipment need major repairs in specialized dealers workshops. The cost estimate for the repair of these pieces is L.E. 750,000 approximately.

6. **Annual Financial Needs**

- 6.1 The Suez Governorate owns approximately L.E. 40 millions worth of heavy vehicles, engineering equipment, tractors, pickups, and transport vehicles according to current market prices. Prices have increased dramatically in the last five years.
- 6.2 To keep this fleet at a reasonable 85% on-the-road availability, 5% of the total current value of the fleet should be spent annually on the procurement of spare parts (both imported and locally procured), and on performing complete overhauls and major repairs of annual defects. This amounts to about L.E. 2 millions annually.
- 6.3 Already defective heavy vehicles and equipment will need extra allocations to bring these pieces back on the road. A repair program could be planned to be implemented in two years.
- 6.4 As mentioned before, Suez Governorate needs extra 10-15 back loading refuse trucks, 5 sweepers, and 2 motor graders. Approximate cost estimate of this procurement would be L.E. 8.5 - 11 millions.
- 6.5 For the next three years (1992-1994), the following annual budget, other than procurement of new trucks and equipment, should be allocated.

I T E M	FYs (IN L.E. THOUSANDS)		
	1992	1993	1994
1. Procurement of spare parts both imported and locally produced.	1,100	1,100	1,100
2. Purchase of P.M. and repair materials (lubricants, paints, steel sections, leather, metal sheet, etc).	200	200	200
3. Performing overhauls and major repairs in specialized dealers' workshops for newly defective pieces.	700	700	700
4. Performing overhauls and major repairs in specialized dealers' workshops for existing defective pieces.	350	400	--
Grand total annual O&M budget (not including new equipment purchase)	2,350	2,400	2,000

Table 3
INVENTORY & STATUS OF SUEZ GOVERNORATE
(As Of February 1992)

#	VEHICLE/EQUIPMENT NAME	TOTAL	IN-OPERATION	NEED REPAIR			AVAIL.
				LEVEL 1	LEVEL 2	LEVEL 3	
1	Refuse Truck	16	13	1	1	1	81
2	Agriculture Truck	57	47	2	3	5	82
3	Sweeper Truck	3	2	1	-	-	67
4	Dump Truck	26	20	2	1	3	77
5	Water Tank and Spray	8	6	1	1	-	75
6	Bulldozer	7	4	1	1	1	57
7	Grader	5	3	1	1	-	60
8	Loader	13	8	1	3	1	62
9	Roller	5	3	1	1	-	60
10	Finisier	1	1	-	-	-	100
11	Asphalt Mixing Plant	1	--	-	-	1	0
12	Bitumen Boiler	2	1	-	1	-	50
13	Asphalt Cutter	1	1	-	-	-	100
14	Concrete Mixer	1	1	-	-	-	100
15	Dumper	2	1	-	1	-	50
16	Sewage Truck	10	7	-	2	1	70
17	Lorry	8	6	-	2	-	75
18	Pick-Up	41	40	-	1	-	96
19	Passenger Car	9	9	-	-	-	100
20	Crane	3	1	-	2	-	33
21	Fork Lift	1	1	-	-	-	100
22	Excavator	3	3	-	-	-	100
	TOTAL	223	178	11	21	13	80

- 6.6 Financing the above mentioned maintenance program will need all available resources to cover all expenditures.

Available resources are:

- BAB II and BAB III GOE budgets;
- cleaning treasuries;
- local and community development treasuries;
- USAID block grant;
- LD II maintenance allocations; and
- income generation through performing PM and repair services against payments.

IV. INCOME GENERATION

1. Income generation has become an essential issue. O&M needs could not be covered by the conventional financing channels, i.e. BAB II and BAB III GOE budgets.
2. Although El-Amreya District in Alexandria was the first to implement an income generation project, the Suez Governorate took the lead and started a similar project using the central service station and parts of the central workshop. Hopefully, the Governorate will issue the by law regulations for running these facilities and others.
3. On September 17, 1991, TAC sent a letter to the Governorate Secretary General including some ideas about income generation (letter attached).

V. TAC SUPPORT TO SUEZ

The TAC O&M Team provided direct instructive TA and direct support in all O&M areas. Close cooperation with concerned officials at the Governorate and districts was fruitful. TA and direct support included:

1. Garages and Workshops Construction and Renovation Program

The O&M Team took a leading role in planning this program, preparation of garage layouts, and the monitoring of the construction and renovations both technically and financially.

2. Organizations and Staffing

The O&M Team developed organization charts for the proposed central O&M department and for different O&M facilities defining responsibilities of each facility. The O&M Team also proposed an effective communication system and the O&M forms that could be used. Unfortunately, the formal arrangement for these organizations by COAO has not yet been obtained.

3. Direct Management Support

The O&M Team provided the Suez Governorate with a senior maintenance expert to provide direct and day by day TA to the Governorate and districts, as follows:

- Eng. Ali Helal from Feb. 90 to May 15, 91
- Eng. Mohamed Omar from May 16, 91 to present

Direct support included:

- Implementing proposed organizations in garages and workshops.
- Developing managers' skills and management systems.
- Developing and implementing PM and repair programs and follow-up the implementation of these programs.
- Developing Cardex run warehouses in the central workshop and in district facilities.
- Providing hands-on management and technical training in new facilities.
- Assisting garage managers to prepare annual O&M budgets and developing economic analysis of O&M activities in new facilities.
- Assist in starting up income generation projects.

4. **Procurement of New Equipment and Spare Parts**

The O&M Team assisted central and district workshops managers in preparing and reviewing specifications for the purchase of new vehicles and equipment. The O&M Team also assisted in preparing spare parts lists, parts descriptions and manuals of the needed parts.

5. **Training**

The TAC placed great effort on training both in Egypt and in the USA. Training included seminars, site visits, courses and OJT. Table 4 shows the different courses that have been held and the number of trainees.

VI. **CONCLUSIONS AND RECOMMENDATIONS**

1. **Garages and Workshop Construction and Renovation Program**

- 1.1 Suez District garage needs a new adequate site to use as a parking place for the district fleet.
- 1.2 Sufficient budget should be allocated to complete of the construction of the central workshop.

2. **Organization and Staffing**

- 2.1 A central O&M department should be formed at the Governorate-level to plan, coordinate and control O&M activities in the whole governorate.
- 2.2 It is essential to obtain the formal satisfaction of the COAO for all proposed organizations. The shortage of qualified engineers, supervisors, skilled and semi-skilled laborers is a real problem that should be dealt with seriously.

3. **Maintenance Management**

- 3.1 The Suez fleet is kept satisfactorily. On-the-road availability target should not be less than 85%. PM and repair programs have to be implemented efficiently. Continuous supply of spare parts must be ensured. An effective spare parts control system has to be built.
- 3.2 The central workshop, when construction, equipping and staffing is completed, has to assist districts by performing levels 2 and 3 repairs and the annual PM for the Suez fleet.
- 3.3 O&M annual needs should be pre-planned. All financial resources should be gathered together in order to cover the Governorate grand annual O&M plan.

Table 4
 TRAINING EFFORT IN SUEZ GOVERNORATE
 (As Of December 1991)

ITEM	COURSE TITLE	TYPE OF TRAINING	COURSE DURATION IN DAYS	NUMBER OF TRAINEES	NUMBER OF TRAINEE DAYS
1	Garages Operation	Off-Shore in USA	15		
2	Garages Management	Off-Shore in USA	15	2	30
3	P M. Training for Different Types of Vehicles and Engineering Equipment	OJT in Garages	3	2	30
4	Management Garages	Pimco Course		37	111
5	Gear Cutting	PVTD	18		
6	Purchase and Store Keeping	PVTD	24	12	216
7	Kardex System	OJT	24	1	24
8	Vehicle and Equip. Operation	OJT	10	1	24
9	Mech. Quality Control	PVTD	6	2	20
10	Maint. of Vehicles Electric.	PVTD	36	7	42
11	Maint. of Diesel Engines	PVTD	18	1	36
12	Veh. Workshop Foremen	PVTD	24	3	54
13	Turning	PVTD	36	4	96
14	Fitting	PVTD	48	5	180
15	Machine Electricity	PVTD	48	7	336
16	Maint. of Petrol Engine	PVTD	48	8	384
17	Electric Oxy-Welding	PVTD	48	8	384
18	Car Sheet Metal Work	PVTD	24	2	48
19	Electric Workshop Foremen	PVTD	24	13	312
			36	1	36
			36	1	36
	TOTAL		117	2399	

4. Income Generation

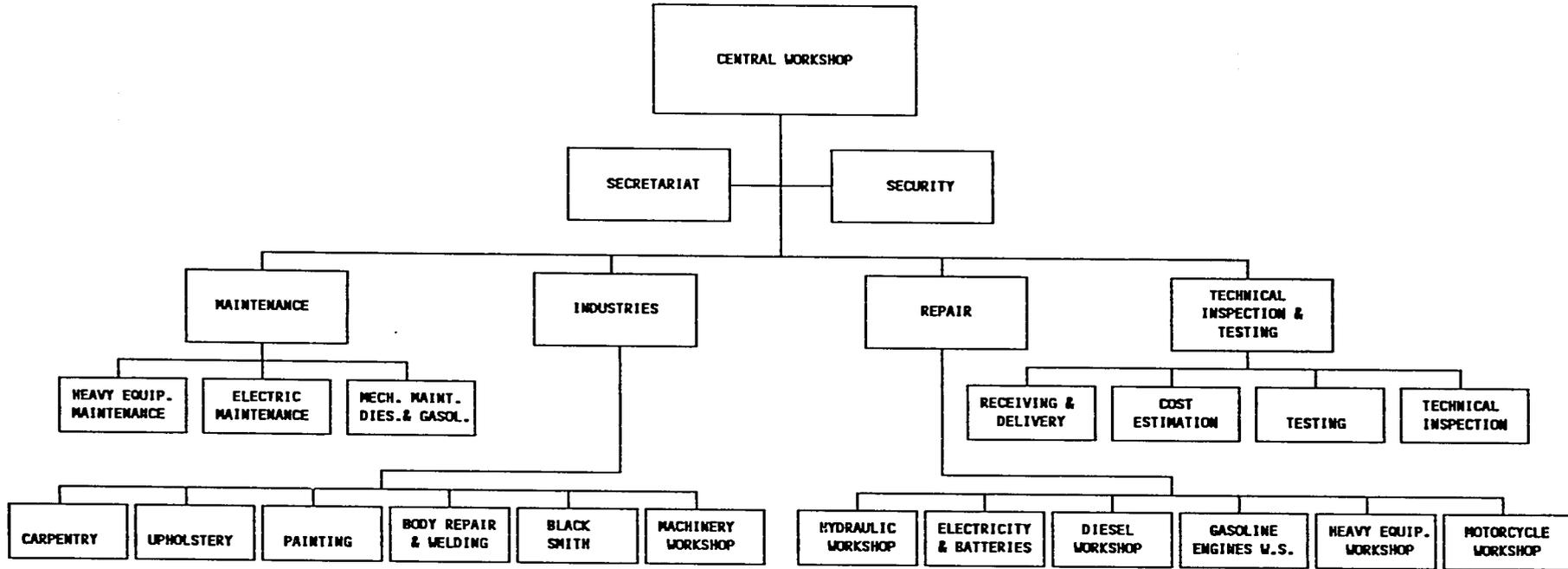
4.1 Income generation has become an essential issue.

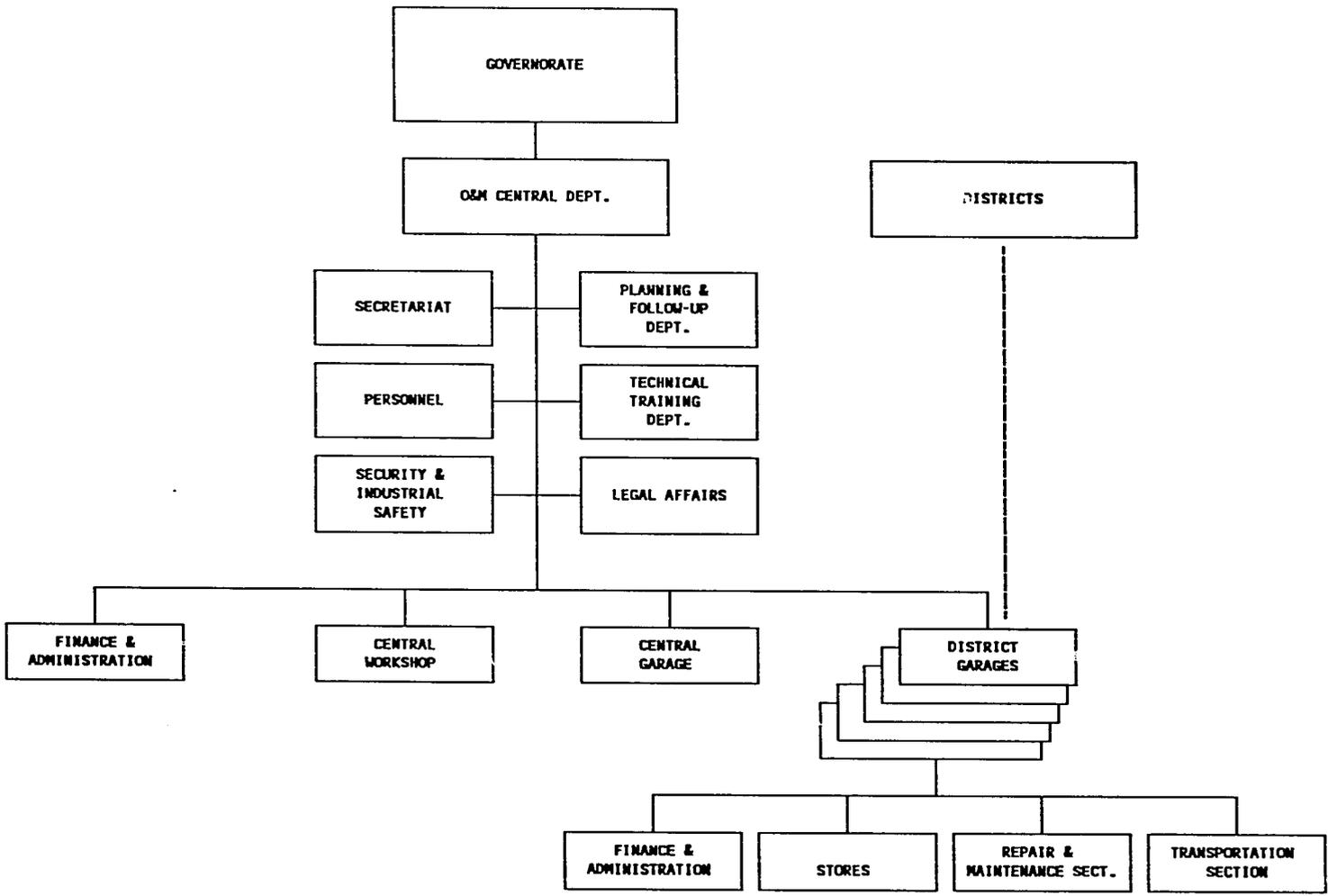
4.2 Proposed income generation projects in Suez, as proposed by General Fayez, the Secretary General, are most promising. By law regulations should be issued by H.E. the Governor. This will help districts, especially El-Ganayen District, to develop similar income generation projects.

APPENDIX A

PROPOSED ORGANIZATION CHART FOR A COMPLETE O&M HIERARCHY IN SUEZ GOVERNORATE

SUEZ GOVERNORATE
PROPOSED ORGANIZATION FOR CENTRAL WORKSHOP

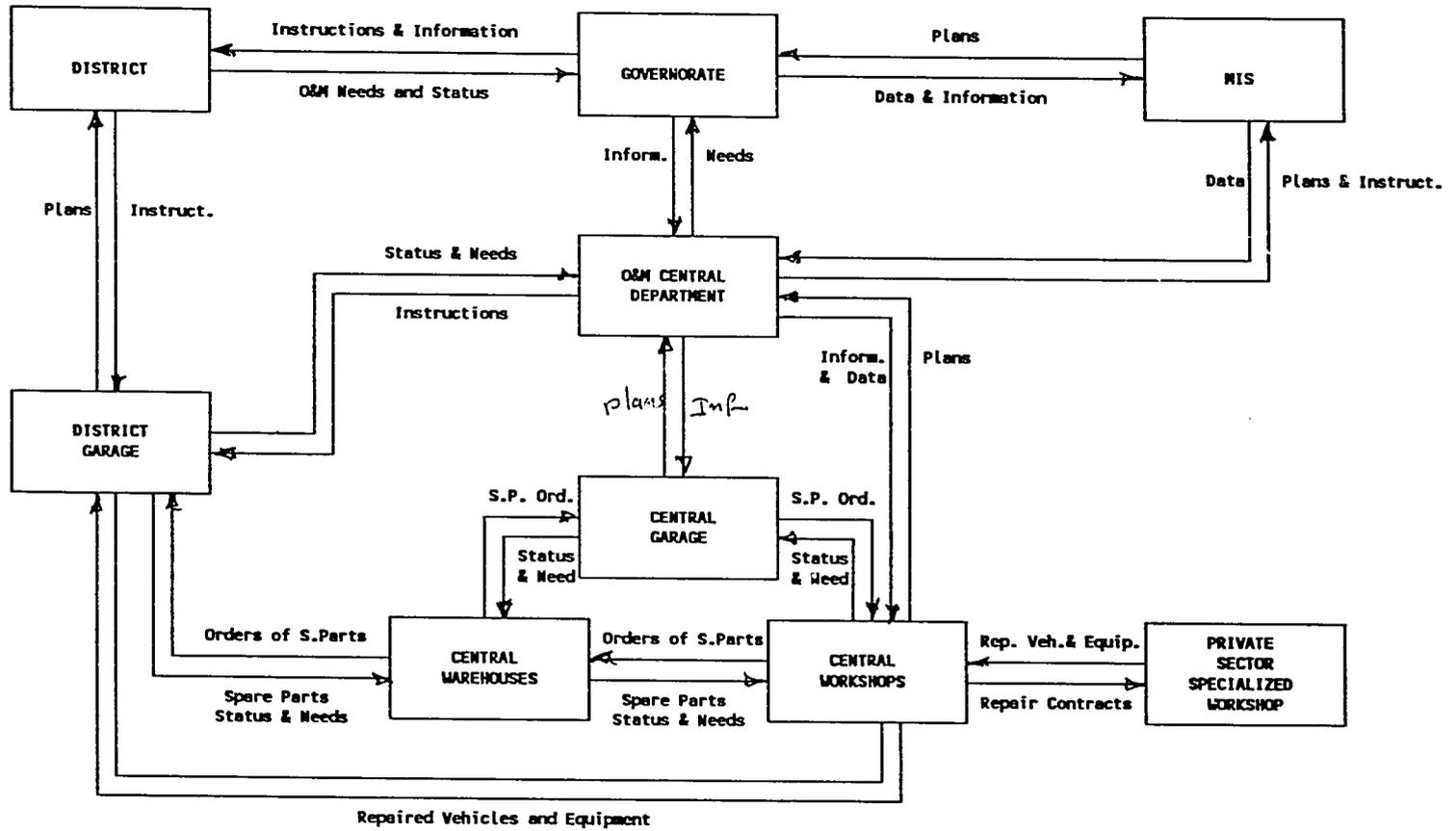




APPENDIX B

O&M COMMUNICATION SYSTEM AND REPORTING FORMS

**O&M COMMUNICATION AND REPORTING SYSTEM
SUEZ**



FORM NO. OM-01

VEHICLE / EQUIPMENT DATA SHEET

Governorate : District : Date: / /19

I. BASIC DATA:

Vehicle/Equip. Name:	Plate No.:	
Make :	Model :	VIN:
Year Manufacture :	Date Received : / /	
Engine :	Type : HP:	Engine No.:
No. of Cylinders :	Cooling System :	
Equip. Engine :	Type : HP :	Engine No.:
Capacity : WT. Empty: (tons)	Loaded: (tons)	
Length : (cm) Width :	(cm) Height :	(cm)
Transmission :		
Chassis Type :	Chassis No. :	

II. CAPACITIES:

Fuel :	Tank Capacity :	(liters)
Engine Oil Type :	Eng. Oil Capacity :	(liters)
Hydraulic Oil Type :	Tank Capacity :	(liters)

III. TIRES:

No. of tires : Size :

IV. BATTERIES:

No. of Batteries : Capacity AM/HR : No. of Plates :
Volts :

V. GENERAL CONDITION:

New () Good () Poor ()
Need Repair () To be Scrapped ()

VI. MILEAGE & REPAIR:

Working Hours :	(hr)	Mileage :	(km)
Last Major Repair :	/ /19	Last Medium Repair :	/ /19
Last Annual PM Performed :	/ /19		

FUEL AND OIL MONTHLY CONSUMPTION

Governorate : _____

District : _____

Date : _____

S.N	Plate No.	Veh. Name	Type	Total Mo. Work. KM/HRS		Fuel Consumption in Liters		Oil Consumption in kg			Total Monthly Cost in L.E	Remarks
				Planned	Actual	Gasoline	Diesel	Engine	Hydraul	Brake		
Grand Total												

Fuel Oil Prices in L.E :

- Liter of Gasoline = L.E
- Liter of Diesel = L.E
- KG of Eng. Oil = L.E
- KG of Hydr. Oil = L.E
- Brake Oil = L.E

Signature : _____ Position : _____ Name : _____

APPENDIX C

A COPY OF TAC LETTER
DATED SEPT. 17, 1991
TO SUEZ GOVERNORATE

LOCAL DEVELOPMENT II URBAN PROJECT

1097 CORNICHE EL NIL ST., GARDEN CITY . CAIRO, EGYPT . 355 7078 . 355 7933 . FAX 356 4294

September 17, 1991

General Fayed Hashem
Secretary General
Suez Governorate

Dear General,

Your know sir, that in December 1990, a seminar on O&M Needs took place in Suez Governorate and H.E. the Governor attended that meeting.

Two committees were formed, the first was to report on Governorate O&M Needs until the end of the LD II Project. This committee developed the O&M needs assessment. We hope to receive an official copy of the final report in order to cooperate to implement O&M plans for the following period.

The second committee was formed to study the possibilities of using new O&M facilities for income generation to assist in sustaining O&M activities.

TAC arranged visits for the committee to Governorates that practiced successful exercises in this field; namely Menya, Menofia and Alexandria.

Based on these experiences, I have the pleasure to submit some ideas about income generation that may be of interest to you:

1. The system implemented in Amreya District Garage in Alexandria can be applied in new and renovated O&M facilities; namely the service station, central workshop and district garages and workshops. Actual cost of services has to be calculated precisely. These facilities can provide services to other governmental agencies and to the public and private sectors against payment. Suez lacks these services in the City.
2. The Road Directorate owns a large road construction and maintenance fleet. The directorate has the ability to carry out road maintenance against payment especially casual, periodic and annual maintenance. An alternative to this would be to form an investment private sector company.
3. The governorate and several departments hire out some of their equipment, besides providing other services to the public, companies and agencies, but the cost of these services are not calculated according to actual costs, and the income (or profit) is not used to assist O&M activities.
4. H.E. the Prime Minister issued his directive number 72/91 which allows governorates to form investment companies in the field of maintaining and repairing rolling stocks, equipment and water supply plants. El Menofeya Governorate, based on this directive, formed on investment company named "El Menofia Company for Repair of Rolling Stock". You will find attached a copy of H.E. Mr. Prime Minister's Directive and copies of papers issued by El Menofia Governorate on forming the company.

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WILBUR SMITH ASSOCIATES

DELOITTE AND TOUCHE

PUBLIC ADMINISTRATION SERVICE *26*

This directive may allow Suez Governorate to form a similar company. This company may include three major facilities: the Central Workshop, the Production Workshop and the service station, besides the road maintenance and paving company. A proposed chart to show the main organizational structure of such a maintenance company is attached.

I hope that this paper may be of use to you on investigating possibilities of income generation that will support O&M activities.

Please provide us with copies of the needs assessment and income generation reports after they have been formally reviewed.

Thank you for your sincere cooperation, and wish you all the best.

Sincerely,

WILBUR SMITH ASSOCIATES



Richard E. Miller
Chief of Party

cc: Mr. Jack Gisiger, USAID, Cairo
Project Coordinator

