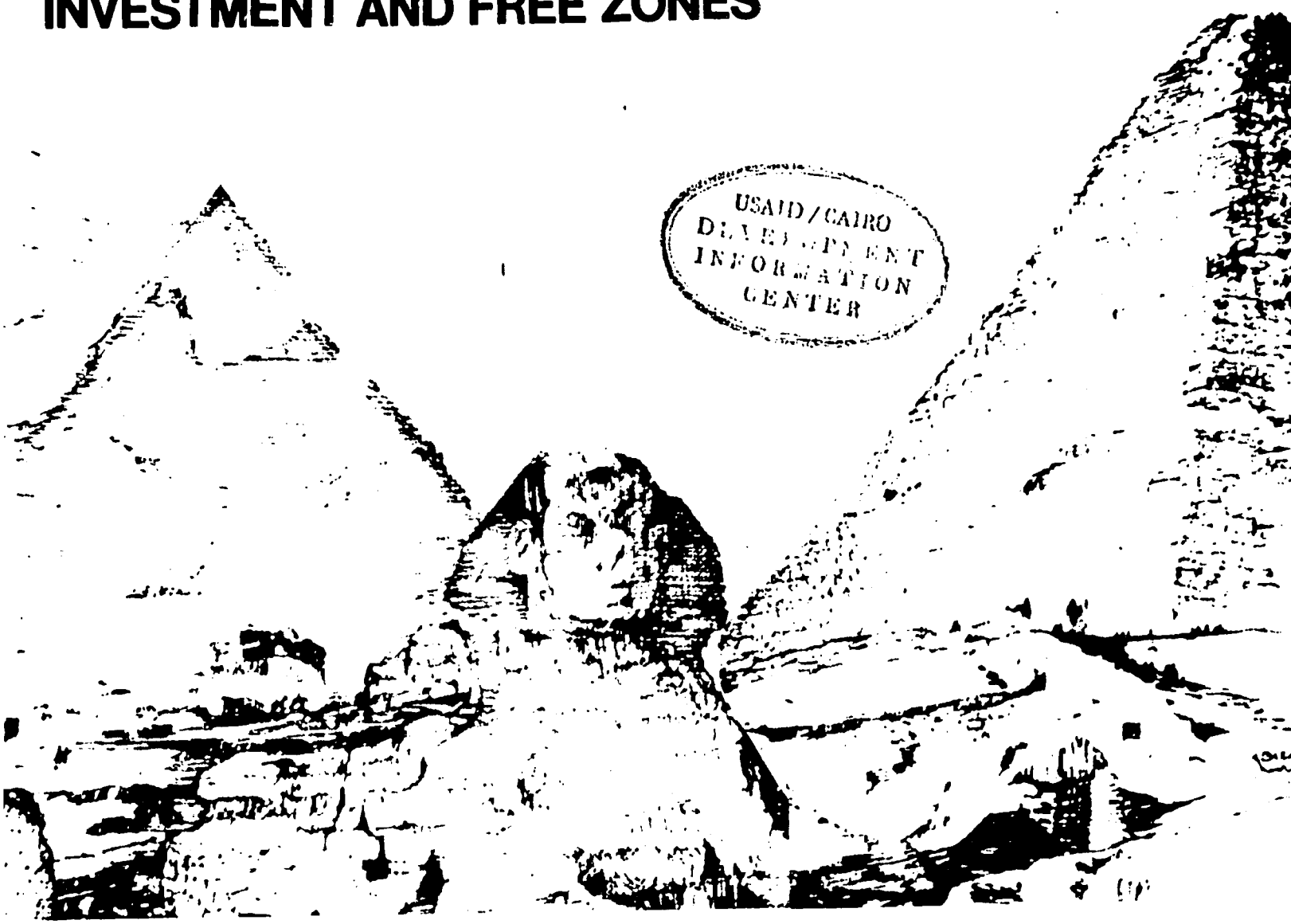
ISMAILIA FREE ZONE PREFEASIBILITY ANALYSIS

PREPARED FOR

GOVERNORATE OF ISMAILIA AND THE GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES



Submitted by
REYNOLDS, SMITH AND HILLS ARCHITECTS · ENGINEERS · PLANNERS, INCORPORATED
JACKSONVILLE, FLORIDA
CAIRO, EGYPT

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EXECUTIVE SUMMARY

The results of analyzing Ismailia's material and human resources, its transportation network, and its capacity for development over time are reflected in this report concerning a proposed free zone in Ismailia. Also considered in this analysis are Egypt's existing free zones, key factors for free zone success, and general knowledge concerning industrial development.

Industrial development in Ismailia is projected as being fairly slow for the early 1980s. Between 1979 and 1985, general industrial development will probably be confined to small industries. It appears that there is sufficient activity in the Governorate of Ismailia to support moderate growth through 1985.

The large reclamation projects being implemented under the current five-year plan are unlikely to significantly contribute in terms of new industrial products until the latter half of the 1980s. By this time, existing reserved industrial space would require that new lands be set aside for industrial expansion generated by these projects.

Based on a scenario of slow industrial growth in the first half of the 1980s, and increasing resources from which industrialization may occur during the latter 1980s and 1990s, it appears that a development plan for a free zone would necessarily begin with a very small Phase I tied primarily to footloose industries or warehousing and transportation type services with Phase I abosrbed over a four or five-year period.

A second phase, if the first phase is successful, would coincide with the new market opportunities including agricultural resources, reclamation projects and the Qantara Tunnel Project. By this time, increasing industrial demand for moderate scale plants will begin to find unreserved land of suitable type, with utilities, etc., in increasing short supply. The proximity of the proposed Ismailia Free Zone area to the Ring Road Industrial Estate, with utilities in place, makes the extension of that industrial estate into the free zone area a viable plan. Too, by about 1990, it can be expected that development pressures will exist from moderate sized industries; that is, industries employing 50 to 100 employees.

Some requirements may be generated for large land users such as Volkswagen and Deutz, for whom large land configurations in the industrial zone might be unavailable during the late 1980s. These large land users might be absorbed into the northern portion of the proposed free zone area. A final commercial type phase would complete the area development, except in those industrial areas that were begun both as a linkage to the industrial park and those areas that might satisfy possible large tenants.

The term of development would span a period of approximately 20 years, from 1983 to about 2000, with an additional two years of development beginning as early as 1981.

The Governorate should be advised that the most optimistic analysis indicates only marginal financial and economic benefit from a free zone. Instead, a land parcel oriented to domestic industrial programs combined with a small area reserved for possible free zone activity offers less risk for Ismailia resources.

While the free zone analysis indicates a direct financial return of approximately 5 percent over the 20-year analysis period, it must be remembered that the free zone concept has no operational background in Ismailia and, thus, the case for its development is subject to argument. Industrial activity can be traced and projected in Ismailia, so that the concept and growth patterns for this development activity are more reliable and substantive. Too, the financial return of 7 percent indicated for the industrial development combination can be improved, although the existing Ring Road industrial site might then extend its absorption period.

By combining the proposed free zone site with the current Ring Road Industrial Estate, Ismailia has the opportunity to direct industrial growth to one sector of its urban area, to manage that growth in an efficient manner, to conserve financial resources for infrastructural development, to plan for and to control support service requirements, and to minimize pollution problems.

Table ES-1 details the economic results to Egypt if plans for the industrialization programs are achieved. The program emphasizing domestic industrial expansion with the small free zone is more beneficial to Ismailia and to Egypt than the free zone program by itself. The comments mentioned above regarding the risk of either program also apply to the economic results.

The steps recommended for Ismailia in 1980 are as follows:

1. The creation of a management organization for the Ring Road industrial area. This would include a Director and a skeleton staff to perform the key functions described herein, such as promotion, engineering, and tenant services.

2. Development of a definitive master plan. A development plan should be designed to encourage moderate sized industry based on Ismailia's strengths (canned fruits, juices, small components, etc.). The master plan should combine the existing and proposed industrial sites for reasonable, cost-effective phasing. Consulting services can accomplish this, and would be most effectively performed utilizing an international consultant teamed with a local consultant, thereby ensuring continuity, cost-control, and timely performance.

3. Until such time as the master plan is completed, perimeter the proposed expansion area with the temporary fencing.

TABLE ES-1

ISMAILIA FREE ZONE ANALYSIS

SUMMARY OF COST BENEFIT STATISTICS

Category	Free Zone	Free Zone Plus Industrial
Total Employment	26,252	82,657
Average Annual	1,313	3,936
Total Free Zone Investment (LE Mil.)	16.4	44.50
Cost/Job Created	12,490	11,306
Annual Payroll Spent in Egypt at Full Employment (LE Millions)	8.24	26.62
Annual Payroll/Total Investment	.50	.60
Average Benefit Stream (LE Millions)	10.60	28.36
Average Cost Stream (LE Millions)	5.84	14.70
Benefit Cost Ratio	1.81	1.93

Source: Reynolds, Smith and Hills, 1979.

4. Develop a utility service program. To encompass both areas, the program should utilize the master plan results.

5. Promote and support the existing industrial area. Test future promotion and service programs with this site and utilize it to train staff for the future expansion area.

While the Governorate is desirous of immediately implementing this venture, we recommend proceeding without haste on the decisions relating to infrastructural expansion. In short, set up the organization, carefully plan the land usage, and then begin to proceed with physical improvements. Most necessary at this time is a sound program for using the Ring Road industrial estate land, and rationally proceeding with the industrial development programs. If, however, the Governorate wishes to begin on a free zone, it should initially develop only a small area and should carefully manage its construction to minimize cash drain.

In summary, the following land development plan might be appropriate:

Begin Development	1981
Phase I (Commercial, small footloose industries, minor linkage industries including food and electronic components)	1983 - 1988
Phase II & III (Same as I above)	1988 - 1994
Phase IV (Same as I above)	1995 - 1999
Southern Industrial Phase (Large Independent land users not requiring heavy infrastructure)	1988 - 1993
Northern Industrial Phase (Smaller linkage industries as spillover from industrial estate)	1994 - 2000

CHAPTER I
ISMAILIA AREA RESOURCES

GENERAL INTRODUCTION

Aptly described as "the city of flowers and gardens" Ismailia is located 140 km east of Cairo on the western shore of Lake Timsah, just north of Great Bitter Lake. With an estimated 1979 city population of approximately 200,000 in a governorate with a total population approaching 400,000, the city represents a quiet, green, and very pleasant environment in which to live.

Because of both a relative paucity of surrounding mineral resources and distribution problems, Ismailia's industrial sector has remained small, with major growth resulting from its importance as an administrative and industrial center. Even though it has no port, its mid-way location along the Suez Canal (84 km to Port Tawfik and 79 km to Port Said) made the city an obvious choice as the site of the administrative headquarters of the Suez Canal Authority. Other major employment sources include the Suez Canal University and other higher educational institutions, government, and tourism. Outside of the city itself, employment in agriculture is predominant.

Future growth prospects for the area appear favorable. Its pleasant residential environment should aid in attracting additional light industries--especially in electronics and assembly operations--and service and administrative facilities. The return of Sinai will eventually augment Ismailia's role as a regional growth center. Also, should major industrial companies such as Volkswagen and Magirus Deutz locate in the area, a solid base for supportive and secondary industrial growth would be established.

Against these advantages and possibilities must be weighted the area's unsuitability for heavy industrial development because of water pollution problems, the lack of port facilities, and the competition from other urban centers within Egypt which offer far larger existing industrial bases with which to attract future investors.

POPULATION

Prior to 1967, Ismailia City had undergone a long period of moderate growth from approximately 16,000 persons in 1917 to nearly 145,000 by 1966 (see Table I-1). Annual growth rates seldom exceeded five percent with the exception of the 1937-1947 period which saw average annual growth reach 6.5 percent due to high level war-time activities in the Suez Canal and the concentration of British troops near the canal after 1936. This gave rise to a large service industry which remains the basis of the Ismailia economy today.

The 1967 war with Israel caused the near complete evacuation of all industrial activities and the population from Ismailia. Most of this population fled into the delta region or to Cairo. The city itself

TABLE I-1

POPULATION TRENDS

ISMAILIA

Year	Ismailia City	Ismailia Governorate	Urban Proportion
1917	15,686	-	-
1927	25,555	65,254	.3916
1937	36,397	90,717	.4012
1947	68,229	177,100	.3853
1960	116,302	284,115	.4093
1966	144,163	344,789	.4181
1976	166,160	-	-
1980*	218,000	464,100	.4697
1990*	356,000	812,100	.4384
2000*	560,000	1,253,700	.4467

Source: Ministry of Housing and Reconstruction, 1976, "Employment and Population," Ismailia Master Plan, Volume 4.
Reynolds, Smith and Hills, 1979.

experienced extensive damage during the war and remained vacant until late 1973. By Jaunary, 1974, governorate estimates of the returning population show that about 50,000 persons had moved back into Ismailia City and approximately 189,000 had returned to the governorate. During 1974, a remarkable repatriation occurred with an estimated population of nearly 325,000 persons having returned to the governorate and 132,000 having returned to Ismailia City, over 90 percent of the pre-war population.

The last official census undertaken in 1976 estimated that the Ismailia Governorate contained a population of 351,889, of which 47 percent (165,698) was classified as urban. At that time, the City of Ismailia had a population of 146,000. Estimates by CAPMAS (Central Agency for Public Mobilization and Statistics) for the year 1977 indicated that the governorate population had increased modestly to 358,000, and that the male/female ratio was fairly evenly divided (51:49).

Although the rate of population growth is expected to slow slightly to near 6 percent average annual growth during the 1980s and to 5.7 percent between 1990 and 2000, the size of the Ismailia City population is expected to reach 560,000 persons by the year 2000. This 20-year trend is over 70 percent faster than the projected urban growth rate for Egypt as a whole (Metcalf and Eddy, 1979). Moreover, the population of the Ismailia governorate, which has traditionally grown at only 3.4 to 3.7 percent per annum, is expected to increase from 323,000 in December, 1974, to 1.25 million by 2000. This rate of increase will have profound effects on the economy and social requirements of Ismailia itself. More recent projections by Metcalf and Eddy (1979) indicate the occurrence of rapid growth to 1980, thereafter achieving a more stable growth rate. Both of these projections are displayed in Table I-2.

The recent rapid growth in the urban population can be attributed mainly to the ongoing Suez Canal Authority program for widening and dredging the canal. Many of the foreign companies' employees who are associated with this program are presently residing within or near Ismailia City. Secondly, ample low-cost housing has been provided by the Sheileh Zayed housing project, which has encouraged in-migration from outlying rural areas. Since the older housing stock suffered little war damage, the evacuated population could return almost immediately--unlike in other Suez Canal cities--and hence population growth has not been as seriously impeded by the recent hostilities.

EMPLOYMENT

Ismailia remains primarily a service industry center with a relatively small manufacturing capacity. The requirements of the Suez Canal Authority and their associated emphasis on transport-related industries have resulted in employment in the service sector that is twice the national average.

In contrast, only about 8 percent of the employed population are engaged in manufacturing as compared to 22 percent nationwide. According

TABLE I-2

COMPARATIVE POPULATION PROJECTIONS

URBAN AREAS

1975 - 2000

Year	Ismailia Master Plan		Metcalf and Eddy	
	Population	Compound Annual Increase	Population	Compound Annual Increase
1975	175,000	-	165,698*	-
1978	N/A	N/A	220,500	10.0%
1980	218,000	4.5%	267,200	10.0
1985	275,000	4.8	306,000	2.8
1990	356,000	5.3	382,500	4.6
2000	560,000	4.6	560,600	3.9

* 1976.

Source: Metcalf and Eddy, Inc., Ismailia Waterworks and Wastewater Facilities Master Plan, February, 1979, p. 20-2.
Reynolds, Smith and Hills, 1979.

to a 1973 to 1974 CAPMAS industrial survey, only 2 percent of the nation's total public and private industrial establishments were located in the Ismailia area. Between 1966 and 1978, however, manufacturing employment increased an average of 4.5 percent per year, representing a 54 percent increase over the 12-year period.

Also, as noted in the Ismailia Master Plan (1976) and subsequent planning reports, recent significant growth of investment has occurred in the larger private sector, formal manufacturing enterprises. Prior to 1976, a few large public sector factories, including Canal Electron, Telemisr, a mineral water bottling plant (SICO), and canal-associated companies, such as Timsah Shipbuilding and Canal Harbour Works, dominated formal manufacturing employment. Since that time, various private sector companies have been established such as Arab Aluminium Company, Larson Nielson Company (prefabricated housing units), and Arab Contractors Company (producing barges and marine equipment). Other companies which have expressed interest or plans in locating in Ismailia include Volkswagen, Magirus Deutz, and Edfina/F.M.S. (a joint-venture enterprise planning a major agro-industrial complex). This trend toward increased private sector commitment in the area is encouraging and could well increase in future years.

Total employment in the Ismailia vicinity during 1978 was estimated to be approximately 52,000, a breakdown of which is shown in Table I-3. Agriculture, which employs approximately 3 percent of total employment, is characterized by labor-intensive small landholdings. In 1977, about 22,500 feddans were under cultivation in the vicinity of Ismailia, of which 5,000 were for fruit, 5,500 for field crops, and 12,000 for vegetables. Common crops include mangoes, oranges, guavas, date palms, melons, wheat, and a wide variety of vegetables.

Serving as the center for the governorate, the Ismailia area had a high proportion (28 percent) of its employees engaged in government services in 1978. An additional 1 to 2 percent were employed by public utilities.

Approximately 5,000, or 10 percent, were employed in construction. A substantial amount of reconstruction and development work is underway, in addition to the widening of the Suez Canal, which is employing several foreign construction companies. Other construction workers are primarily transient, many of whom are low-skilled migrants from Upper Egypt. The largest contractor in the area is Arab Contractors Company, which in 1978 had a payroll of 3,300 persons.

The transportation sector employed about 7,000 people, representing 14 percent of the area's total work force. The Suez Canal Authority was the largest single employer in 1978, with a payroll of 5,100. In addition, the Ismailia Transportation Company--which began operations in June, 1976--currently employs 300 persons, with an additional 300 to 500 on subcontracts.

TABLE I-3

GROWTH IN EMPLOYMENT CATEGORIES

ISMAILIA AREA

1966 - 1978

Employment Category	1966	1975	1978
Agriculture	1,230	1,250	1,480
Government Services	7,677	9,230	14,500
Construction	2,506	4,500	5,000
Public Utilities	410	700	720
Transportation	4,914	6,800	7,000
Commerce and Trade	3,992	6,000	6,400
Other Services	7,523	10,700	12,700
Manufacturing	2,456	1,380	4,000
Total	30,708	40,560	51,800

Source: Metcalf and Eddy, Inc., Ismailia Waterworks and Wastewater Activities Master Plan, Draft Final Report, Volume IV p.20-4, 1979.
Reynolds, Smith and Hills, 1979.

The commerce and trade sector was estimated by Metclaf and Eddy to employ approximately 6,400 persons (12 percent of the labor force), with the service sector--comprising domestic, personal, and business services--employing 12,700 persons, or approximately 25 percent of total area employment.

Not specifically mentioned, but possibly included in Table I-3 within another category, are fishing and quarrying. A considerable catch of mullet, shrimp, and loot is taken from Lake Timsah, which still is insufficient for local demand. The main mineral resources near Ismailia are gypsum, stone, and sand. Gypsum is mined at El Ballah, and a plaster manufacturing plant exists in the vicinity. Limestone is quarried about 30 km south of Ismailia, and is used primarily for housing construction and as foundations for highways and railways. Various types of sand deposits are also present and used in the building and construction industry and for the manufacture of tiles, bricks, and precast concrete units.

CHAPTER II
MANUFACTURING AND INDUSTRY

MANUFACTURING

Population projections for Ismailia showed continuing growth at an overall compound annual increase of 4.8 percent during the 1980 to 2000 period. Of this population growth, in-migrants will account for nearly 80 percent. In order to support this rapidly expanding population base, substantial investments will be required throughout the economic base of the city. This will be particularly important in the basic service and manufacturing components of the economy. Of particular interest to the local economy is the growth of a basic manufacturing work force and industry base through the development of small and medium scale processing and manufacturing companies.

Ismailia's history of manufacturing activity has not been significant. As recent as late 1975, manufacturing employment was estimated at only 3,640 workers, about 8 percent of the labor force. The principal manufacturing activities in 1979 involve aluminum forms, incandescent light bulbs, television and radio assembly, and barge building. (See list of existing and potential manufacturing industries in Exhibit II-1.) The Five Year Industrial Plan published by the General Organization for Industrialization and the Suez Canal Regional Industrial Plan published by the Ministry of Housing and Reconstruction identify a few key industries which could alter the current industrial situation. The Five Year Industrial Plan places particular emphasis on food processing industries and has identified three major projects--two new projects and one extension. If fully implemented, the projects would employ some 2,260 persons and provide a substantial catalyst for further development. Similarly, the projects identified in the Suez Canal Regional Industrial Plan would serve as significant propulsive industries by bolstering the electronics sector and introducing a major textile base of employment--Egypt's primary industrial sector. If fully implemented, these projects would employ an additional 4,900 persons and substantially improve Ismailia's manufacturing potential.

Major manufacturing companies located in the Ismailia vicinity in 1978 are shown in Table II-1. At that time, these accounted for a total of about 3,760 jobs. Since 1978, some of the companies have increased their employment; for example, Timsah Shipbuilding Company now employs 1,215, and Canal Electron, 420 persons.

As noted earlier, Ismailia's location--with respect to the Sinai and Israel and the Mediterranean area arab world including Jordan, Syria, and Lebanon--offers potential for area development either through the manufacture of export products for these markets or as a transhipment point for such products given the realization of a trans-canal roadway. A review of some basic economic data concerning these countries indicates that the Ismailia economy and its proposed new industries are oriented to emphasize this trade.

EXHIBIT II-1

MAJOR MANUFACTURING INDUSTRIES

EXISTING AND PROPOSED

ISMAILIA

Project	Products
Existing	
The Arab Transistor Company	Televisions, radios
Canal Electron	Incandescent lamps
Ismailia Misr Refrigeration Company	Ice
Arab Aluminum Company	Aluminum forms
Larsen Nielsen Company	Pre-fabricated housing units
Timsah Shipbuilding Company	Barges, small marine craft
Arab Contractors Company	Barges, small marine craft
Sico	Bottled water
Misr for Dairy and Food Industries	Dairy products
Projects Authorized by the G.O.F.I. 5-Year Industrial Plan 1978-1982	
Pyramids Brewery Company	Beer, malt
Misr for Dairy and Food Industries	Dairy products extension
Edfina for Food Preservation	Canned fruits and vegetables, frozen food
Potential: Promotion Underway by Governorate/Construction in Progress	
Organic Fertilizer Plant	Fertilizer
Automatic Slaughter House	Prepared meats, organic fertilizer
Printing and Publishing House	Printing
Ismailia Misr Ready Made Clothes Co.	Men's and women's garments
Volkswagen	Automobile assembly
Deutz Company	Tractor assembly
Canaltex	Vinyl flooring
Possible: Projects Identified in Suez Canal Regional Industrial Plan	
Textile Company	Spinning, weaving, and finishing
Telephone Company	Telephone equipment
Leather Company	Tannery, footwear

Source: Reynolds, Smith and Hills, 1979.

TABLE II-1

MAJOR INDUSTRIES AND COMPANIES

ISMAILIA VICINITY

1978

Company Name	Total Employment
Ismailia Freight Transport	250
Aluminum Factory	150
Asmetal Factory	50
Prefabricated Houses Factory	170
Telemisr Company (televisions)	500
Timsah Shipbuilding Co.	700
Canal Electron Co. (light bulbs)	360
Sico Bottling Co.	120
El Nasr Co.	250
Canaltex Co.	30
Arashia Misr Bakery	80
Sheileh Zayed Bakery	74
Ismailia Power Plant	52
Transformer Station	18
Railway Engineering Co.	500
General Nile Co.	130
El Misr Workshop & Standby Machines	250
Transport Equipment & Metal Casting	75
Total	3,759

Source: Metcalf and Eddy, Inc., Volume IV, p. 20-6, 1979.
Reynolds, Smith and Hills, 1979.

The manufacturing labor force in Ismailia is comparatively highly skilled as compared with Egypt as a whole. Most of the labor force is drawn from the city itself and from neighboring villages. Over 70 percent of the employees in the electronics and assembly companies of Telemisr and Canal Electron are women. Average wages per month vary from LE 20 to 40 for unskilled workers, and LE 30 to 60 for skilled workers at Telemisr; LE 40 to 50 plus incentives averaging LE 20 per month at Canal Electron; and approximately LE 100 per month for skilled labor at the Arab Aluminum Company.

While private sector companies such as the latter find no trouble in hiring skilled labor, the lower wages offered by the public sector companies do not attract sufficient skilled people. Both Telemisr and Canal Electron expressed difficulty in hiring engineers and upper personnel locally, and are forced to draw upon the larger Cairo labor market.

Because of the small local market offered by Ismailia and the general lack of natural resources, most manufacturing companies have to bring in their raw or semi-processed materials as well as ship out their finished products elsewhere. Telemisr, for example, imports 90 percent of its components from Japan via either Port Said or Alexandria (surprisingly, not Suez), with the other 10 percent trucked from Cairo. Its finished television products are all sent to Cairo for marketing. Canal Electron imports most of its components (such as filaments, wires, and caps) from England and Holland via Alexandria, and its glass components from Alexandria itself, with all of the finished general service lamps again trucked to Cairo for distribution. The Arab Aluminum Company derives its aluminum ingots from Upper Egypt, and forwards its products destined for the domestic market to Cairo.

Thus, companies manufacturing for the domestic market in Ismailia appear to bear rather high transportation costs, since they are neither located near raw materials nor their major markets. Ismailia's advantage of relative proximity has been little utilized as yet. A beginning has been made by the Arab Aluminum Company, which uses both ports to export 25 percent of its products to Saudi Arabia, Yemen, and West Germany. Telemisr did export a small percentage of its products to Sudan in 1965, but undertakes no exporting at present. Similarly, Canal Electron previously exported to Sudan, Iraq, and Libya. In an attempt to minimize domestic distribution costs, the company will shortly market its products directly in Ismailia and for the Eastern Delta, with the Alexandria branch bearing responsibility for the Cairo market.

In addition to the lack of existing international transportation linkages, Ismailia has few natural resources or existing industrial linkages. The Ismailia Master Plan identifies only three "commercially exploitable natural resources." These include gypsum deposits at El Ballah, which because of its limited quantity and quality is "unlikely to provide a growing source of economic activity." Also included are stone deposits near Fayid, 30 kilometers south of Ismailia, and sand which is nearly ubiquitous within Ismailia governorate and Egypt as a whole. These last two resources are most commonly used in the construction industry and in the manufacture of construction materials. However,

their availability in Ismailia provides little, if any, competitive significance as a raw material resource to prospective industrialists.

PLANNED AND PROPOSED INDUSTRIAL DEVELOPMENT

The Ismailia Master Plan of 1976, which has been used as the basis for planned growth in recent years, recommended that, given the area's limited natural resource base and its relatively highly skilled labor force, "higher order" manufacturing, administrative, and service functions should be emphasized. The most likely types of manufacturing industries to locate in Ismailia included the following:

- Industries with a high proportion of value added by labor;
- Light industries with low pollution that would not affect other important activities, such as tourism and agriculture;
- Industries with high-value, export-oriented output which would necessitate relatively little capital investment, and would not be dependent upon proximity to port facilities;
- Industries serving the domestic market with low value outputs.

The Master Plan considered that the most appropriate large-scale industries would be those extending the existing transport-oriented activities; supporting the reconstruction and development of the Suez Canal Zone; and accelerating agriculture production. The plan emphasized that heavy ind stry, however, was not suitable for Ismailia.

The Suez Canal Regional Industrial Plan (May, 1978) represented a detailed study of potential industries and their interlinkages throughout the Suez Canal Area. For Ismailia, the plan proposed capital investment in both existing and new activities. Industries proposed for the area included food processing, textiles, plastics, building materials, primary metals, fabricated metals, electronics, and shipbuilding and repair. The plan considered Ismailia to be particularly well suited for telecommunications, radio and television, and related electronics. As a "building block" project to further stimulate the development of an electronics components industry, the fabrication of telephone equipment was recommended.

Based upon the findings of the Suez Canal Regional Industrial Plan and plans by the Ismailia Governorate, the current proposed investment program for industrial expansion in Ismailia is shown in Table II-2. The most recent projections for sector employment are presented in Table II-3. Manufacturing employment is anticipated to increase by an average of 7 percent per annum, reaching 23,000 by 2000 AD. This projection coincides with earlier estimates made by the Ismailia Master Plan.

Based upon current developments and identified potential projects, the latter projection appears to be a reasonable estimate. One encouraging trend has been the increased interest shown in joint venture

TABLE II-2

PROPOSED INVESTMENT PROGRAM FOR INDUSTRIAL

EXPANSION IN ISMAILIA

Product	Investment (LE Millions)	Employment	Investment Per Job (LE)
Yarn	19.0	280	67,860
Grey Fabrics	14.7	190	77,370
Textile Finishing	12.8	210	60,950
Wall Panels	1.7	100	17,000
Plastic Products	9.1	135	67,410
Metal Fabrication	0.8	86	9,300
Wire Products	4.3	146	29,450
Food Processing	9.0	600	15,000
Total	71.4	1,747	40,870

Source: Metcalf and Eddy, Inc., Volume IV, p. 20-10, 1979.
Reynolds, Smith and Hills, 1979.

TABLE II-3

PAST TRENDS AND PROJECTIONS OF THE EMPLOYMENT

STRUCTURE IN THE PROJECT AREA

Category	1966 (IMP)	1975 (IMP)	1978	1980	1985	1990	2000
Agriculture	1,230	1,250	1,480	1,500	2,000	2,500	3,500(1)
Manufacturing	2,456	1,380	4,000	5,900	8,300	12,000	23,000
Government Services	7,677	9,230	14,500	18,600	24,500(2)	34,400	46,200(3)
Construction	2,506	4,500	5,000	6,700	8,800	11,500	20,000
Public Utilities	410	700	720	800	1,000	1,400	2,500
Transportation	4,914	6,800	7,000	7,900	9,000	11,100	17,000
Commerce and Trade	3,992	6,000	6,400	6,900	8,700	11,900	21,300
Other Services	7,523	10,700	12,700	13,100	16,100	21,700	37,900
Total	30,708	40,560	51,800	61,400	78,400	106,500	171,400
Population	144,000	175,000	220,500	246,400	306,000	382,500	560,600
Employment/Population	21%	23%	23%	25%	26%	28%	31%

(1) Agriculture is projected to increase because of land reclamation. Mechanization will prevent a large increase from occuring.
(2) Estimated as 8 percent of population.
(3) Includes, in addition to the general governmental services, persons engaged in public education and the University staff.

Source: Metcalf and Eddy, Inc., Volume IV, p. 20-8, 1979.
Reynolds, Smith and Hills, 1979.

projects for the area, with foreign private capital linked with both public and private sector companies. This development is a necessary prerequisite for continued industrial growth in the area, given the priorities of the current Five Year National Development Plan upon private, rather than public, investment in industries for the Suez Canal region. A list of current and identified industrial projects is shown below.

Telemisr--Commencing in 1980, the company will produce video cassette units in addition to its current production of monocolor and color television sets. Within a period of five years, the company intends to manufacture 60 percent of its components locally through a joint venture with a Japanese company.

Canal Electron--The parent company already is involved in a joint venture with the Dutch company, Philips. An additional joint venture partnership is envisaged in the near future with U.S. or British participation to establish a separate company to produce incandescent lamps. In addition, a large, separate glass factory is planned, also to be located in Ismailia.

Canaltex--A producer of vinyl floor materials and panels, this company was originally established in Ismailia prior to the 1967 war. It is presently operating about 30 miles to the northeast of Cairo, but has displayed interest in relocating again to Ismailia.

Organic Fertilizer Plant--Proposed by the Governorate of Ismailia, the plant would produce organic fertilizers from garbage. The expected yield during the first phase would be 35,000 tons per annum, and during the second phase, 70,000 tons. Since the total fertilizer requirements for the governorate are estimated to be in the order of 850,000 tons per annum, all of the plant's production would be for local consumption.

Automatic Slaughter House--With a required capital investment of LE 2.5 million, this is a proposed Egyptian-Saudi Arabian joint venture. The project would prepare meat and manufacture organic fertilizers. A West German company has already offered to supply and install the machinery and equipment needed for the project, as well as to help train the needed technicians.

Ismailia Fish Farming Company--A joint venture with Egyptian and as yet unidentified foreign investment of LE 1.85 million, the proposed company would produce and market fresh and processed fish.

Printing and Publishing House--Proposed by the Ismailia Governorate, and with a capital of LE 5 million, the facility would offer services needed for the Sinai, Suez Canal Governorates, and the Eastern Delta.

Ismailia Misr Ready-Made Clothes Company--With a capital of LE 2.5 million, the plant would produce 400,000 garments per annum, primarily for the domestic market.

Magirus Deutz--A proposed joint-venture partnership, the operation would assemble agricultural tractors and motors. A possible location for the site is to the west of Ismailia, in the vicinity of the West Ring Industrial Estate and proposed industrial free zone.

Volkswagen--A major potential investor, the company has entered negotiations to construct a factory at either Alexandria or Ismailia. The company will produce the Beetle 113, BX Hatchback and BX Notchback models. Production capacity will rise to 10,000 cars per annum after the second year of operation; eventually to reach 20,000 units. The project is anticipated to cost U.S. $25 million, with Volkswagen to provide 40 percent of funding and the remainder from West German foreign aid programs and Arab investors. The plant will employ 614 local workers and 20 foreign staff. Exports should generate U.S. $5.8 million in foreign exchange after six years.

Ismailia Poultry Company--Recently established, the facility is planned to substantially increase its capacity in the near future. The company both slaughters and dresses chickens.

Agro-Industrial Complex--A joint venture between Edfina and the U.S. company F.M.S., the project has been recently approved by the Supreme Investment Council. At a cost of U.S. $24.2 million (comprising $11.6 million foreign and $12.6 million domestic funding), the complex is to be located on 3,000 feddans to the north of Ismailia. Output will total 12,000 tons per annum. The complex, to begin operation after 1983, will comprise a farm for fruit and vegetable production and a food processing factory to produce frozen, canned, and preserved foodstuffs as well as prepared meals.

Ismailia Export and Marketing Company--The proposed enterprise will export various fresh and frozen crops, including potatoes, peas, beans, onions, tomatoes, mangoes and melons.

Tourism Project--A LE 7 million international hotel is planned to be built on the shores of Lake Timsah. This and other future proposals for development on Timsah and Bitter Lakes will greatly aid in the expansion of the already promising tourist industry.

In a continuing effort to attract additional manufacturing activities to Ismailia, two industrial estates have been established. The larger estate is located near the proposed Ring Road to the west of Ismailia. Public water supply, sewerage, rail sidings and other utilities are to be provided. To date, approximately 50 percent of the estate has been developed or is under construction, and companies have plans to develop an additional 20 percent of the area within the foreseeable future. Already established are the Arab Aluminum Company, a prefabricated building components plant, and a maintenance and storage yard for the Ismailia Transportation Company. Other proposed projects include the following:

Hardware	Magirus Deutz
Macaroni and grain plants	Cement blocks
Lumber yard	Tahina plant
Vinyl tiles	Printing/publishing
Biscuits and chocolates	Fruits and vegetable packing
Ready-made garments	Fiberglass
PVC piping	

In addition to the industrial facilities, services such as banks, restaurants, a post office, telecommunications facilities, a rail freight terminal and a truck terminal are planned for the site. A Board of Directors was recently established in June 1979 to overview progress and consider applications. As yet, the Governorate has made no final decision whether to rent or sell land to future projects. Existing prices for desert land range up to LE 500 per feddan. If purchased, land in the industrial estate could cost LE 3 to LE 5 per square meter. If leased, potential rates could be upward of LE 2 per square meter per annum. The estate provides suitable sites for national or regional light manufacturing concerns requiring good communications.

The Nifisha Industrial Estate is located west of the El Galaa military base on 16.3 hectares of land. A foreign government aided demonstration project, the estate was originally planned to be developed by 1980, but it is still partially occupied by the military. Small-scale activities, with employment of 10 to 15 each, are planned to include transport, metal fabrication, construction materials, electronics, clothing and footwear, paper products, and a variety of other engineering sectors. Possibly to be incorporated within the estate is a productive workshop overseen by the City Council, which currently employs 80 workers to repair automobiles and manufacture furniture.

In summary, encouraging growth has been developed, especially in the electronics, agro-industrial and transportation sectors. A significant growth in domestic and, to a lesser extent, international tourism is envisaged. Ismailia offers large areas for industrial expansion which could be developed at reasonable cost with minimal environmental disruption. Its location is well-placed to serve the Port Said, Suez and Cairo markets, and--as discussed in the next section--is relatively near both seaport and airport facilities. The area's pleasant living conditions and environment can only help in attracting further foreign investment.

Another facet of the area economy which is likely to induce substantial industrial linkages is the agricultural land reclamation program. Some 450,000 feddans of land in Ismailia governorate are proposed for agricultural reclamation covering numerous soil types and qualities. The majority of this land is in the clay type soil areas to the north of the Ismailia-Bilbeis corridor where potential agricultural productivity is considered high. The Ismailia Master Plan suggests that primary crops would be oriented to potential export products including citrus and products suitable for processing into high value products such as sugar beets. Handling, processing, packaging, and storing of these products are strong linkage industries for which Ismailia will be well situated. It must be noted, however, that linkage industries based on land

reclamation projects are necessarily distant in planning. It is doubtful that any single reclamation project would be considered capable of full production for several years to come.

CHAPTER III
REGIONAL TRANSPORTATION

Without a port and with limited canal transport, the Ismailia area depends primarily upon road and rail networks. Because of its proximity to Cairo International Airport (65 minutes travel via road), no air passenger or freight service exists or is planned.

While domestic land transportation is good and undergoing substantial improvements at present, international transportation access is lacking. There are no existing or planned commercial air cargo facilities in Ismailia, requiring break-bulk transfer of cargo to Cairo which is approximately 140 kilometers southwest of Ismailia. Similarly, there are no significant seaport facilities locally and none are planned in the near future. The lack of these facilities results in land transit of goods to either Port Said (80 km north of Ismailia) or Suez City (90 km south of Ismailia). However, the potential opening of the Sinai Desert and proposed tunnel programs will significantly improve access (over land) to Jordan, Israel, and perhaps Syria and Lebanon (provided a normalization of relations occurs between Egypt and these neighbors). The potential drawing force of a one or two-day total transit time (one way) to these markets and the degree of consignment control offered by land transit would be significant. Any tunnel projects which would significantly affect Ismailia--particularly the planned tunnel at El Qantara--will not likely be considered until the mid-1980s or beyond according to officials of the Ministry of Reconstruction.

The existing road system is of varying standard. Ismailia is connected to Cairo via both the Desert and Agricultural Roads. In addition, a road running parallel to the Suez Canal provides access to Port Said to the north and Suez to the south.

The Ismailia Master Plan of 1976 proposed the four-laning of the Port Said-Suez Road passing west of Ismailia (the West Ring Road); the Ismailia-Zagazig Road, to the north of the Ismailia Sweetwater Canal; and the Cairo-Ismailia Desert Road. To date, only the latter has been widened. None of these projects, according to a 1977 report (Ministry of Transportation; Egypt National Transport Study; Interim Report, Volume I, p. x, 1977), was justified either from the viewpoint of economic development or probable traffic demand; in fact, the report continued, these roads would have considerable excess capacity until well past 1980. The existing road system, however, does provide access to Cairo, Suez and Port Said within two hours drive.

The region's major highways will eventually connect with the proposed Suez Canal tunnels to Sinai. The first to be constructed, the Hamdy Tunnel at El Shatt, 10 km north of Suez will be open for traffic in early 1980. Construction on the second tunnel, approximately 15 km south of Ismailia at Deversoir, has not yet begun, nor at the third tunnel location at Qantara, 47 km south of Port Said. The early completion of the Hamdy Tunnel could initially give Suez an advantage over Ismailia

with regard to communications and trade to Sinai, and as a basis for such operations.

Prior to the 1967 war, railway lines used to cross the Suez Canal to Sinai at two locations--just to the north of Ismailia, and at Port Said. Both were destroyed and have not been reconstructed. Many of the lines in the Suez Canal area, in fact, were destroyed or damaged in recent years. Presently, Ismailia is connected to Cairo, Suez, and Port Said (terminating 2 km south of the latter city) by single-line track.

A new railway line from Ismailia to Port Said is proposed which would run 10 km to the west of the Suez Canal. Additional planned routes include a line from El Qantara to Sinai, and from the existing Cairo-Suez line to Fayid, located midway to Ismailia.

Although located on one of the busiest waterways in the world, Ismailia has no direct access to it. The Suez Canal has thus little impact upon local and regional transportation. According to a Frederic R. Harris report (Development Policy: Ports of Egypt; Strategy for 1980 Through 2000; January, 1978), no future port development should be made at Ismailia.

The Ismailia Sweetwater Canal at present is of little importance to transportation infrastructure. More than 200 bridges and 28 locks impede traffic considerably. The canal, in fact, is primarily for irrigation purposes, and shipping is insignificant (approximately 114,000 tons per annum). The 128 kilometer long, 30 meter wide canal is shortly to be widened to 50 meters for the purpose of irrigating new reclamation areas. The Ismailia Master Plan advises, however, that any further reconstruction of the canal to make it a Class I waterway would be warranted only if Ismailia had port facilities.

In ordinary, day-to-day commerce, the absence of seaport and airport facilities offers little hindrance to manufacturing development--other than for heavy industry, which is unsuitable in the Ismailia area for pollution reasons. Served by an inordinately large transportation sector, Ismailia has fairly direct access to Port Said and Suez (both of which have seaports) and Cairo (which has the nation's major airport). The Ismailia Transportation Company offers a fleet of eighty 35 ton-capacity Mercedes trucks for delivery of products to any of these destinations. Moreover, Ismailia's primary advantage in location relies upon its midway site along the Suez Canal; the area can process export goods and truck them to either Port Said or Suez (depending on the overseas market) without incurring Suez Canal charges. Similarly, imported semi-processed goods can be imported from Suez or Port Said and be finished within the area for domestic distribution. However, the lack of a close port substantially decreases the competitive position of an export free zone in Ismailia. An analysis of transportation costs from Ismailia to other parts of Egypt disclosed a mixed pattern for railways, roads, and the canal.

RAILWAYS

Until June, 1979, the freight tariffs of the Egyptian Railway Authority had remained unchanged since 1957. This condition resulted in the increasing subsidization of freight traffic. According to the transport planning authority, the Ministry of Transport, the average revenue per ton/ kilometer in 1977 was 6.5 milliemes, whereas the average operating cost per ton/kilometer was 9.8 milliemes--approximately 50 percent higher.

In all, there are 11 tariff classes, each class representing a wide range of products and raw materials, as shown in Table III-1. In addition, ton/kilometer rate scales are reduced by 50 percent for the portion of a haul above 250 km, and by a further 50 percent for any portion above 500 km.

Table III-2 depicts the new freight tariffs as of June, 1979. At that time, the rate for tariff classes from 3 to 6 were increased by 70 percent and rates for other tariff classes by 100 percent. It should be noted, however, that many commodities fall under two classes, depending upon whether carloads are full or less than full.

Using Table III-2 as a guide, the tariff per ton between major urban centers in the vicinity of existing and proposed free zones were estimated and are presented in Table III-3. These estimates should be used with caution, however, since the distances of the most direct railway tracks are used. These tracks may be unsuitable for certain types of traffic: for example, the single line track between Cairo and Suez has high curve and grade resistances, which prevent its use by heavy freight trains with unbraked rolling stock. Most of the freight movement, therefore, travels via the Ismailia-Zngazig-Benha line (Suez Master Plan, Volume II, 1976, p. 19).

While the recent substantial increase in tariff rates should reduce the need for government subsidies, it still may not accurately reflect the economic costs of railway freight haulage. In a 1978 study, the consulting firm of Frederic R. Harris, Inc. made estimates in economic terms of the total (operating plus inventory) average costs per ton/ kilometer for various lengths of haul for the year 1985. These estimates are shown in Table III-4, and were used to approximate line haul costs per ton between major cities as shown in Table III-5.

The total route length of the railway system is 3,905 km, of which 951 km. is double-tracked. Many of the lines in the Suez Canal area were destroyed or damaged during the hostilities. Most have now been repaired, although the line from Ismailia to Port Said still terminates a few kilometers short of the latter city.

Rail transport is generally considered to be unable to provide adequate freight services, especially for perishable goods, and freight traffic volume is still declining. The existing shortage of locomotives,

TABLE III-1

VARIOUS COMMODITIES ACCORDING TO RAIL TARIFF CLASS

Tariff Class	Commodity Types
3	Pharmaceuticals, stationery, funiture, perfumes
4	
5	Floor covers, trucks
6	
7	Wood, copper, benzine, cotton waste
8	
9	Cotton, fresh fruit, glass
10	
11	Groceries, confectionary, lumber, steel, diesel fuel
12	Flour, sugar, coke coal
13	Fertilizers, phosphates, grains, sugar, molasses, stone, gravel, gypsum, cement, bricks, building materials

Source: Egyptian Railway Authority, 1977.

TABLE III-2

FREIGHT RATES BY TARIFF CLASS AND DISTANCE

REVISED JUNE, 1979

(MILLIEMES PER TON/KM)

Tariff Class	Distance (km)		
	0-250	251-500	500+
3	25.50	12.75	6.38
4			
5	17.00	8.50	4.25
6			
7	12.00	6.00	3.00
8			
9	8.00	4.00	2.00
10			
11	5.00	2.50	1.25
12			
13	3.00	1.50	0.75

Source: Egyptian Railway Authority, 1979.

TABLE III-3

FREIGHT TARIFFS FOR VARIOUS DESTINATIONS BY SELECTED TARIFF CLASS

(LE PER TON)

Route	Approximate Distance (km)	Tariff Class					
		3	5	7	9	11	13
Cairo-Alexandria	213	5.43	3.62	2.56	1.70	1.07	0.64
Cairo-Ismailia	133	3.39	2.26	1.60	1.06	0.67	0.40
Cairo-Ismailia-Port Said	212	5.41	3.60	2.54	1.70	1.70	0.64
Suez-Ismailia	85	2.17	1.45	1.02	0.68	0.43	0.30
Ismailia-Port Said	79	2.01	1.34	0.95	0.63	0.40	0.24
Port Said-Alexandria	225	5.74	3.83	2.70	1.80	1.13	0.68
Cairo-Suez	141						

Source: Egyptian Railway Authority, 1979.
Reynolds, Smith and Hills, 1979.

TABLE III-4

AVERAGE RAILWAY COSTS PER TON/KILOMETER

BY LENGTH OF HAUL IN 1985

(IN MILLIEMES)

Haul Length (Km)	Type of Train*	
	Unit	General
50	10.3	24.3
100	9.6	18.9
150	9.4	17.1
200	9.3	16.2
250	9.3	15.7
300	9.2	15.3
350	9.2	15.0
400	9.2	14.9
450	9.1	14.7
500	9.1	14.6
750	9.1	14.2
1000	9.1	14.0

* All break-bulk cargo is assumed to be carried by general train; all dry-bulk by unit train.

Source: Frederic R. Harris, Inc., Development Policy: Ports of Egypt, January, 1978, Table B4.1.

TABLE III-5

AVERAGE COSTS PER TON FOR BREAK-BULK AND DRY-BULK

HAULAGE BETWEEN MAJOR DESTINATIONS

1985 (LE)

Route	Distance	Cost per Ton (LE)	
		Dry-Bulk	Break-Bulk
Cairo-Alexandria	213	1.98	3.43
Cairo-Ismailia	133	1.26	2.35
Cairo-Ismailia-Port Said	212	1.97	3.41
Suez-Ismailia	85	0.83	1.74
Ismailia-Port Said	79	0.78	1.67
Port Said-Alexandria	225	2.09	3.60

Source: Frederic R. Harris, Inc., 1978.
Reynolds, Smith and Hills, 1979.

the high proportion of damaged cars, and obsolete track layout will pose continuing severe problems if and when freight traffic recovers.

ROAD HAULAGE

The present tariff system portrays complexity as well as inconsistencies in its rates. This is primarily the result of competitive bidding on long-term contracts, which accounts for a large proportion of nonlocal haulage. Since these contracts can last for several years, not only may they fail to reflect the actual costs of haulage, but it is also possible that different customers are charged different tariffs for hauling the same cargo over the same distance.

General estimates for various commodities on a ton/kilometer basis have been provided by the Ministry of Transport, Transport Planning Department, as shown in Table III-6.

The range of these average rates compares fairly closely with that depicted for 1976 in the Egypt National Transport Study of 1977, as shown in Table III-7. In addition to the ton/kilometer charges, a basic rate per ton is charged, which may range from LE 1.00 to above LE 4.00, depending upon the commodity.

As previously mentioned, however, most of these rates are based upon long-term contracts which may vary considerably. The tariff charge by Ismailia Transportation Company for cement, for example, is LE 2.75 per ton between Port Said and Ismailia, and LE 4.25 per ton between Port Said and Cairo. The haulage charge for steel bars is approximately 10 percent higher than this rate, resulting in comparative tariffs of LE 3.03 and LE 4.68, respectively. Special contracts for the haulage of drilling equipment, however, may be at least five times these rates (personal conversation; Ismailia Transportation Company, August, 1979).

The Sumed Fertilizer Plant in Suez is charged, under contract, LE 1.5 per ton for the first 50 kilometers, and thereafter, 165 milliemes per ton/kilometer up to 275 kilometers and 120 milliemes per ton/kilometer on any additional distance. Thus a 20-ton truck haulage to Cairo (representing a distance of 131 kilometers) costs the company the equivalent of LE 2.88 per ton (personal conversation; Sumed Fertilizer Plant, August, 1979).

Without the existence of overall fixed rates, it is not feasible to accurately gauge the charges of road haulage between various locations in Egypt, accoring to various products. The 1978 report by Frederic R. Harris, however, did attempt to estimate the economic costs of road haulage for various cargo handling categories in 1985, as shown in Table III-8.

Using these estimates as a base, the economic costs for hauling the cargo handling categories between major urban cities in 1985 are depicted in Table III-9.

TABLE III-6

AVERAGE RATES FOR ROAD HAULAGE

1979

Commodity	Milliemes Per Ton/Kilometer
Building Materials	20
Food Supplies	11-17
Fertilizers	13
Petroleum and Petroleum Products	14
General Commodities	12

Source: Reynolds, Smith and Hills, 1979.

TABLE III-7

TRUCKING CHARGES FOR LAND TRANSPORT

GENERAL NILE COMPANY

1976

Commodity/Customer	Distance/Route	Basic Rate* (LE per Ton)	Milliemes* per Ton/Km
Agricultural Credit Organization	1-100 km	1.32	11.25
	100-300 km	1.69	14.40
	Over 300 km	1.69	11.20
Ind. Company Kafr-El-Zayat	Local	1.3-1.4	14.40
	Nonlocal	1.4-3.5	14.40
Electric Cables	Alexandria-Mostorod	3.50	-
	Cairo-Alexandria	1.66	-
Military Factories	Alexandria-Helwan	3.40	-
Iron and Steel Assembly	Alexandria-Cairo	3.40	-
General Authority for Basic Provisions	Alex-Suez Canal Zone	2.50	9.40
	Alex-Western Desert	1.65	9.40
	Alex-Tahrir Province	1.65	9.40
Rice, Processed	To Alexandria	1.20	10.00
	To Cairo	1.20	10.00

* Total charge comprises both basic rate and ton/km charges.

Source: Arab Republic of Egypt, Ministry of Transportation, Egypt National Transport Study, Phase I, Interim Report, Volume II, 1977, p. IV-119.
Reynolds, Smith and Hills, 1979.

TABLE III-8

TOTAL TRUCK COSTS*

BY CARGO HANDLING CATEGORY

1985

Cargo Handling Category**	Milliemes Per Ton/Km***
A	21.2
B	11.7
C	15.5

* Costs are defined as "the total of operating and inventory costs from the time loading of a truck is completed to the time unloading begins" (F.R. Harris, 1978, p. B-12).

** A: Vegetables, fruits, and nuts; cotton textile and waste; fish; consumer goods.
B: Rice, sugar, raw cotton, intermediate goods.
C: Phosphate, fertilizer, corn, cement.

*** Figures used pertain to average truck speed of 40 to 50 km per hour.

Source: Frederic R. Harris, Inc., Development Policy: Ports of Egypt, January, 1978, Table B4.

TABLE III-9

TOTAL TRUCK COSTS BY CARGO HANDLING CATEGORY FOR MAJOR ROUTES

1985

Route	Road Distance (km)	Cargo Handling Category (LE per Ton)		
		A	B	C
Cairo - Alexandria	224	4.75	2.62	3.47
Cairo - Ismailia	128	2.71	1.50	1.98
Cairo - Port Said (via Ismailia)	207	4.39	2.42	3.21
Cairo - Suez	131	2.78	1.53	2.03
Suez - Ismailia	85	1.80	0.99	1.32
Ismailia - Port Said	79	1.67	0.92	1.22
Suez - Port Said	164	3.48	1.92	2.54
Port Said - Alexandria	225	4.77	2.63	3.49

Source: Frederic R. Harris, Inc., 1978.
Reynolds, Smith and Hills, 1979.

SUEZ CANAL TRANSIT

Canal rates are charged according to vessel net tonnage and utilize Special Drawing Right (SDR) units. The various rates, as amended in July, 1979, are shown in Table III-10. At that time, an SDR unit (which comprises a mix of 13 major world currencies) approximates U.S. $1.29. In addition to these rates are tug charges (varying according to the horsepower needed) and pilotage costs (approximately LE 150.00 for the total passage).

Average transit times through the 173 kilometer-long canal differ significantly according to convoy direction. Including mooring times at Port Said, Ballah, and Great Bitter Lake, southbound convoys average 20.3 hours from Port Said to Suez, whereas northbound convoys average 11.4 hours. The canal accommodates three convoys daily: two southbound and one northbound.

The Suez Canal Authority is currently undertaking a massive, two-stage development program to widen, deepen, and straighten the canal in order to allow the passage of VLCCs (very large crude carriers). Until recently, the 38-foot deep canal was capable of carrying only vessels up to 60,000 deadweight tonnage (dwt) ladened or 150,000 dwt ballasted. With the recent completion of the first phase of development, the canal depth has been increased to 53 feet and now allows passage of vessels up to 150,000 dwt ladened and 370,000 tons dwt ballasted. Plans for the second phase include further widening and deepening the canal, increasing the draft to 67 feet and thus allowing transit for loaded VLCCs of 260,000 dwt and virtually all ships in ballast. Three new bypasses of 68 km each would effectively double the width of the canal. A final decision for implementing this second phase has not as yet been made.

In a 1978 study, the consulting firm of Frederic R. Harris attempted to estimate the incremental costs of moving one ton of various cargo categories between Port Said and Suez, as well as from either terminus should a port at Ismailia eventually be constructed. These costs, shown in Table III-11, are in economic terms, and represent the total of canal transit charges, vessel operating costs, and inventory costs projected for 1985. The same convoy system was assumed to still be operating. In addition, tariff charges from Port Said or Suez to Ismailia were assumed to be double the one-way transit charges so as to reflect the loss of canal income resulting from this movement. Entrance into and exit from Ismailia would necessitate occupying a space in a through convoy. The results showed that incremental costs would in fact be higher for cargo to be moved from either terminus to Ismailia than from terminus to terminus. Based on these and other considerations, the Harris report recommended that construction of a port at Ismailia could not be justified on economic grounds.

TABLE III-10

SUEZ CANAL RATES FOR LADEN AND UNLOADED

VESSELS, AS AMENDED JULY, 1979

Type of Vessel	Rate Per Ton	
	SDR Units	U.S.$ Equivalency (July, 1979)
Laden		
Tankers, Crude Oil	1.611	2.078
Bulk Carriers:		
1st 1,000 Tons	2.420	3.122
Next 4,000 Tons	2.000	2.580
Remainder	1.611	2.078
Other Vessels*:		
1st 1,000 Tons	2.660	3.431
Next 4,000 Tons	2.180	2.812
Remainder	1.772	2.286
Unloaded		
Tankers	1.289	1.663
Bulk Carriers:		
1st 1,000 Tons	1.936	2.497
Next 4,000 Tons	1.600	2.064
Remainder	1.289	1.663
Other Vessels*:		
1st 1,000 Tons	2.128	2.745
Next 4,000 Tons	1.744	2.250
Remainder	1.481	1.910

* For container vessels, a third container tier is charged an additional 5 percent of dues; each additional tier is charged at an extra 7-1/2 percent total dues. For general cargo vessels carrying containers, the bulk of containers on-deck is added to the vessel net tonnage for charge purposes.

Source: Suez Canal Authority, Suez, 1979.

TABLE III-11

INCREMENTAL COSTS OF SUEZ CANAL TRANSIT

1985

(LE)

Cargo Category	Vessel Type: Containerships 725 tfe	Containerships 1210 tfe	Break-Bulk 10,000 dwt	Dry-bulk 16,000 dwt
From Port Said To:				
Ismailia	4.8	4.7	3.6	3.2
Suez	3.2	3.0	2.1	1.8
From Suez To:				
Ismailia	4.8	4.7	3.6	3.2
Port Said	2.9	2.8	2.0	1.7

Source: Frederic R. Harris, Inc., Development Policy: Ports of Egypt, January, 1978, Table B3.1.

CHAPTER IV
ISMAILIA FREE ZONE AREA

LOCATION AND SITE SELECTION

The proposed Ismailia Free Zone lies approximately 6 kilometers west of Ismailia's city-center. The original proposal for land area included a parcel of approximately 450 feddans (1.9 million square meters), however; recent efforts at the government level have increased the size to about 1,100 feddans (4.62 million square meters). The property is well located along the West Ring Road which will eventually connect to the Ismailia-Port Said and Ismailia-Suez roads. The parcel also provides good land transportation to Tenth of Ramadan City and to Cairo. The site is bounded on the southeast by a conventional industrial estate of approximately 2 million square meters and is in an area which has been designated for industrial purposes in the Ismailia Master Plan.

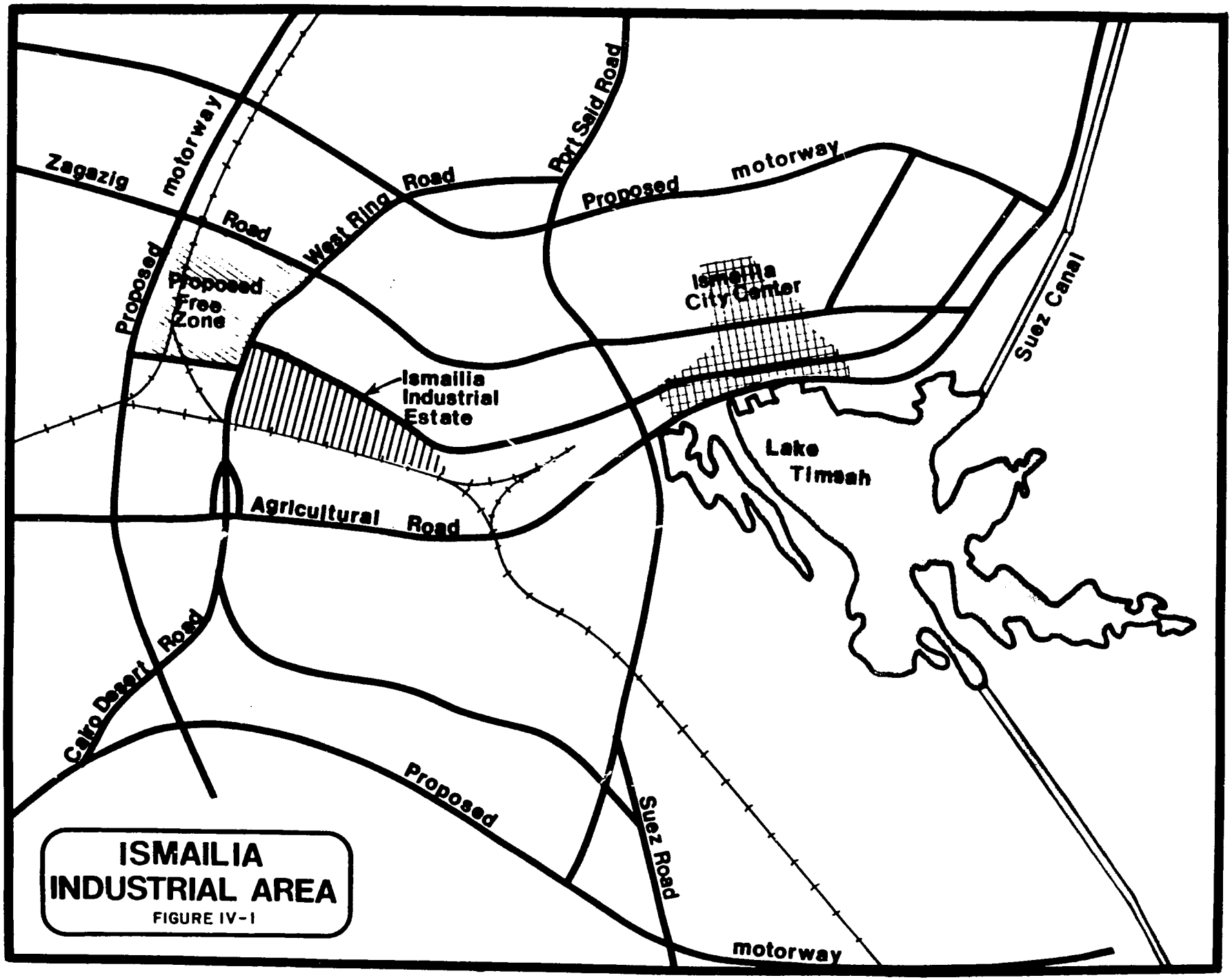
The location of the proposed free zone with respect to existing and planned industrial land uses in Ismailia is excellent (see Figure IV-1). The West Ring Road Industrial Estate, located adjacent to the site at its southeastern border, is relatively new with its oldest tenant having located there in 1976. At present, there are only three major users: an aluminium forms plant, a prefabricated building plant and the Ismailia Transport Company. In addition, substantial parcels of land within the industrial estate have been set aside for specific companies to develop operations in the near future. Of the nearly 2,000,000 square meters of available land in this estate, slightly more than 25 percent has been set aside for the three existing companies, including land for future expansion, and another 25 percent has been tentatively granted to other companies (Figure IV-2).

Other industrial land development projects identified in the Ismailia Master Plan are of much smaller scale and are to be oriented toward smaller manufacturing operations. These include an industrial estate at Nifisha, which is designed to provide pre-built space for local manufacturing and repair operations as a demonstration project of the Ministry of Reconstruction, and small sites at Abu Rakham and south of Khashayna. These last sites, however, have only been identified as potential sites and no action has been taken to implement them.

REGIONAL TRANSPORTATION

Market Potential

The ability of Ismailia to attract new industries over the long-term will materially affect the successful development of the Ismailia Free Zone. Ismailia's history as a major service center in the region will serve as a major attraction force for population growth through in-migration into the Suez Canal Region. This will become increasingly the case as the government encourages out-migration from Cairo which suffers from a lack of adequate housing and social infrastructure to accommodate its expanding population. The population growth of Ismailia will offer new potential for demand oriented industries and additional commercial and service activities.



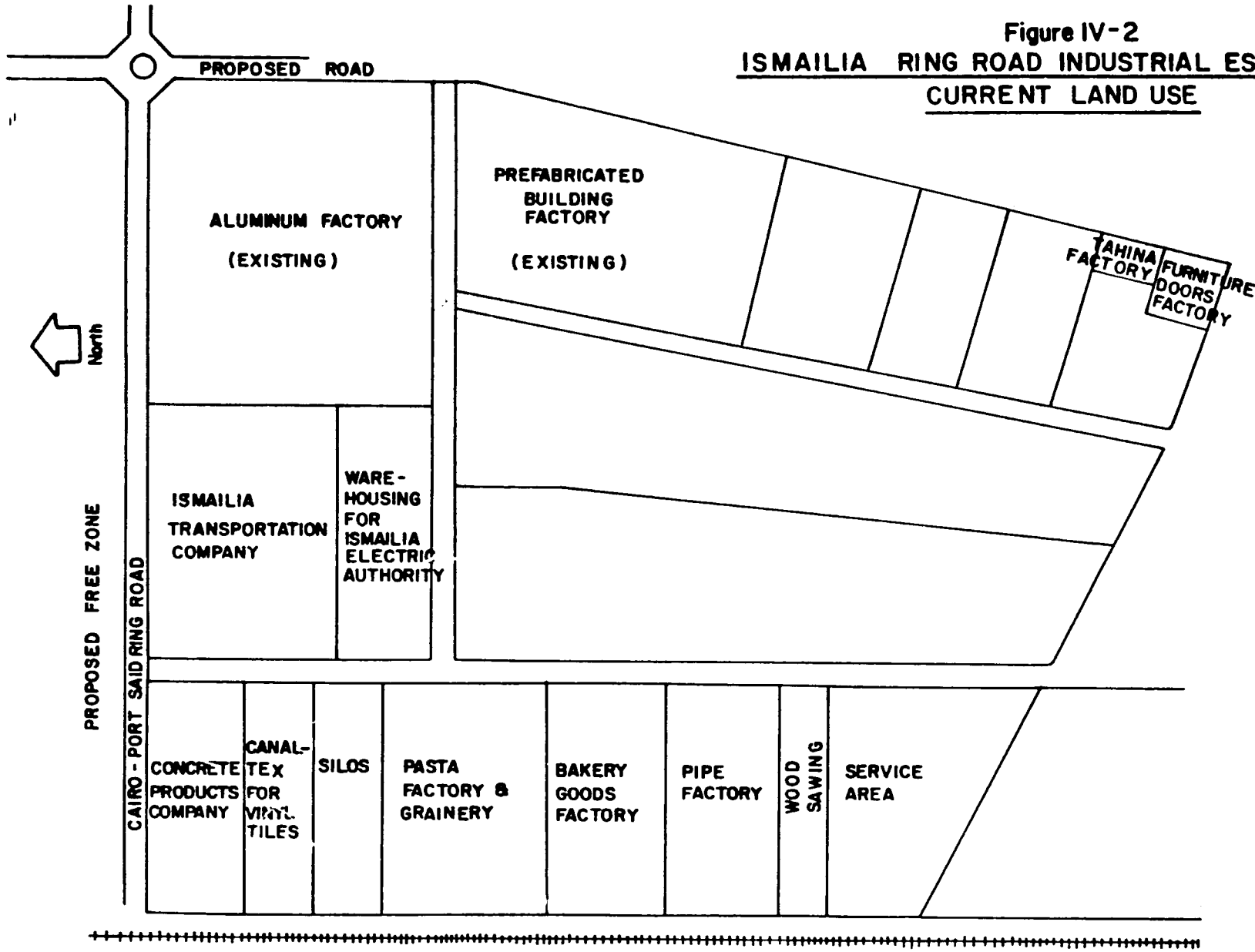
ISMAILIA INDUSTRIAL AREA

FIGURE IV-1

Figure IV-2

ISMAILIA RING ROAD INDUSTRIAL ESTATE

CURRENT LAND USE



Source: Reynolds, Smith and Hills, 1979.

A review of numerous documents concerning Ismailia's growth potential, Egypt's industrialization plans, and manufacturing opportunities in the Suez Canal Region form the basis for establishing an industrial scenario for Ismailia City and the ability of Ismailia to develop a successful free zone which contributes to the economy of the region. Among these, the Ismailia Master Plan developed by the Ministry of Housing and Reconstruction was updated through on-site investigations during the summer of 1979. Other documents which contribute to this analysis include the Suez Canal Regional Industrial Plan also developed by the Ministry of Housing and Reconstruction, the Five Year Industrial Plan developed by the Ministry of Industry and the United Nations Development Program's report, Suez Canal Region.

Manufacturing employment in Ismailia has traditionally been one of the least active sectors, particularly with respect to Egypt as a whole. As Table IV-1 shows, 1960 manufacturing employment accounted for only 2,565 jobs or 7.4 percent of the total jobs in the city. This compares to 21.7 percent of Egypt's urban employment in this sector. Within the governorate, there were ten manufacturing sectors which provided more than 100 jobs each. The most significant of these was manufacture and repair of transport equipment (782 jobs) followed by food products (580) displaying the two principal economic links of the city: the canal and the agricultural area. Other significant employment sectors include metal products other than machinery and transport (393), furniture and fixtures (373), non-metallic mineral products (269), footwear (260), manufacture and repair of machinery (143), wood and cork (137), miscellaneous manufactures (134), and electrical machinery (112). A significant exclusion from this list is textiles which employed only 46 persons in Ismailia, while this sector accounted for 26 percent of Egypt's total manufacturing employment in 1960.

According to the Ismailia Master Plan, employment is expected to increase in nearly direct proportion to population growth, with crude labor force participation rates increasing only slightly from about 26 percent in 1975 to about 30 percent in 2000. Basing their projections on assumed growth rates in the national economy, employment in the various economic sectors was projected in Table II-3. According to these figures, the services sector will continue to dominate the character of Ismailia employment growing from a projected 31,700 jobs in 1980 to a projected 84,100 by the year 2000. Of these 52,400 new jobs, nearly 28,000 are expected in the basic services sector. This includes regional and local government which is expected to increase at a rate of 3 percent per year and is somewhat dependent on Ismailia's role as a future regional capital for the canal zone and part of the Sinai Peninsula. It also includes both public and private sector service organizations such as the Suez Canal Authority and others which might otherwise locate in Cairo and require some decentralization away from the major population centers into Ismailia.

Manufacturing growth, as shown in Table II-3, is expected to be the fastest growing sector increasing by nearly 400 percent over the 20-year

TABLE IV-1

COMPARISONS OF ISMAILIA'S URBAN EMPLOYMENT BY ECONOMIC ACTIVITY

TO EGYPT'S URBAN EMPLOYMENT

1960

Industry	Ismailia		Egypt's Proportion(1)
	Number	Proportion	
Agriculture, fishing, forestry, and hunting	4,796	13.7	12.5
Mining and quarrying	16	0.1	0.2
Manufacturing	2,565	7.4	21.7
Construction	2,286	6.5	4.5
Electricity, gas, water, and sanitation	468	1.3	1.3
Commerce and finance	4,307	12.3	16.5
Transport, storage, and communications	5,286	15.1	8.3
Services	13,897	39.7	22.2
Other*	1,378	3.9	12.8
Total	34,999	100.0	100.0

*Other includes "activities not adequately described" and that portion of the population which was not assigned to an economic sector.

Source: (1) Ministry of Housing and Reconstruction, 1976, "Employment and Population," Ismailia Master Plan, Volume 4.
Reynolds, Smith and Hills, 1979.

period. This rate appears particularly optimistic given the following factors.

1) As mentioned earlier, Ismailia governorate offers few raw materials upon which to base materials supply oriented industries.

2) This rate of growth (7 percent per year) is at the upper end of the range of growth rates for Egypt as a whole under such favorable conditions as a high rate of personal savings, political stability, including Arab unity, a reduction in the trade deficit particularly through the development of exportable Egyptian commodities, a high rate of foreign currency inflow and transfer of technology.

3) Employment growth is estimated based on growth of manufacturing output in value terms and fails to consider any changes in levels of productivity among the work force or attributable to foreign investment and technology transfer.

4) According to the master plan, it is unlikely that the Canal Zone population will exceed 5 percent of Egypt's population during the 20-year period, and therefore would not provide the market potential necessary to draw large demand oriented industries away from Cairo or Alexandria.

5) Some industrial opportunities, which might otherwise have chosen Ismailia during this period, may be attracted through industrial linkages to the new industrial city, Tenth of Ramadan, between Cairo and Ismailia.

Without reliable evidence upon which to suggest a reasonable alternative growth rate, however, the 23,000 manufacturing jobs projected for 2000 will be used, not as a central most likely figure, but as an upper limit. A reduction of 1 percent in the rate of increase would reduce the total employment in the year 2000 to 18,000 persons.

ABSORPTION POTENTIAL

Ismailia presents an attractive environment for a variety of small scale and medium scale industrial opportunities in line with the established patterns of manufacturing operating in this city. These types of activities are particularly suited to the moderate scale industrial estate such as that might be offered by the proposed Ismailia Free Zone and the existing Ismailia Industrial Estate. The importance of this sector to the Egyptian economy is found in its historical contribution to overall manufacturing output. In 1971, manufacturing industries employing less than 50 persons made up 23 percent of all manufacturing value added within the gross domestic product, accounting for 60 percent of manufacturing employment, and accounting for 99 percent of the number of industrial establishments. In Ismailia, where large scale operations (those employing in excess of 500 workers) have no traditional basis and where environmental constraints might likely preclude such operations, the small and medium size establishment contributes far more to the local economy.

Based on existing and planned manufacturing employment in Ismailia, a schedule of land absorption for the city can be established as given in Table IV-2. As shown, a total of 812 feddans of manufacturing land requirements can be anticipated over the 20-year (1980-2000) period. This is based on employment projections contained in the Ismailia Master Plan and land area/employee relationships developed for free zone development in the General and Organizational Structure Analysis and Prefeasibility Review for Suez City Free Zones. Existing and proposed projects including the West Ring Road Industrial Estate (existing) and a small Ministry of Reconstruction Demonstration project at Nifisha will compete for substantial portions of this land area. The proportion of total industrial land which might be allocated for export potential is difficult to determine without a significant historic export industry trend established. However, information concerning industrial export activity in Egypt as a whole suggests some rational assumptions which can help establish a planning framework to determine this demand in Ismailia.

Table IV-3 displays the relationship between gross industrial production value in current dollars and industrial export value in Egypt during the mid-1970s. During the period 1972-1977, industrial exports maintained a level of about 9 to 13 percent of gross industrial production with an average of nearly 11 percent. The growth of industrial exports by value has generally paralleled the growth in gross industrial output and could exceed this growth rate as Egypt's open door economic policy matures. This would tend to boost the proportion of industrial exports in relation to industrial output.

In the absence of more sophisticated measures, the proportion of industrial export value to the value of gross industrial production is assumed to represent a sufficient measure of the proportion of labor demand by export oriented industries. The ability of Ismailia to compete for its fair proportion of export industries will initially depend on its ability to promote an infrastructure package to footloose industries; i.e., those which do not require established market or resource linkages. Beyond 1985, the potential development of basic textile production, expanded electrical/electronic production, and expanded agricultural production through current land reclamation projects will likely provide the necessary linkages to support Ismailia's competitive attraction of export oriented employment. This would be further strengthened during the late 1980s by the development of the El Qantara Tunnel, opening stronger links to the Sinai; its potential for mineral production, land reclamation, and land route transportation access with Egypt's eastern neighbors. Accordingly, land area requirements for export oriented manufacturing use is estimated as shown in Table IV-4. Over a 20-year planning period, industrial land absorption from export industries would amount to approximately 85 feddans (gross land requirements). Although few industries will be completely oriented to the export market, some trade-off between domestic oriented industries which produce a portion of their output for domestic markets and export oriented industries which produce for domestic consumption would tend to balance the land requirements along these lines.

In addition to the land requirements of export oriented manufacturing industries, a substantial demand would exist for warehousing,

TABLE IV-2

ISMAILIA MANUFACTURING INDUSTRIES

1980 - 2000

Period	Projected New Employment(1)	Implied Land Area Requirements		Average Yearly Absorption
		Net Feddans(2)	Gross Feddans(3)	
1980-1985	2,400	49	114	23
1985-1990	3,700	76	176	35
1990-1995	4,300	88	204	41
1995-2000	6,700	137	318	64
Total	17,100	350	812	41

(1) Taken from Ismailia Master Plan.
(2) Based on 49 employees per net feddan (average developed from existing free zones).
(3) Based on a ratio of .43:1 of net to gross land requirements.

Source: Ministry of Housing and Reconstruction, 1976, "Manufacturing and Basic Service Industry," Ismailia Master Plan, Volume 5. Reynolds, Smith and Hills, 1979.

TABLE IV-3

INDUSTRIAL EXPORTS FROM EGYPT

1972 - 1977

(CURRENT PRICES)

Year	Gross Value of Industrial Production (LE Millions)	Value of Industrial Exports (LE Millions)	Export Proportion of Industrial Production
1972	1,570	136	8.7%
1973	N/A	168	N/A
1974	1,904	250	13.1%
1975	2,268	278	12.3%
1976	2,460	230	9.3%
1977	2,688	267	9.9%
Average Annual Growth Rate	14.2%	19.3%	-

Source: U.S. Department of Commerce, 1978, "Marketing in Egypt," Overseas Business Reports, Vol. 78-41.
United Nations, 1978, Yearbook of International Trade Statistics, 1977, Volume I.
Reynolds, Smith and Hills, 1979.

TABLE IV-4

EXPORT ORIENTED MANUFACTURING LAND REQUIREMENTS

ISMAILIA

1981 - 2000

Period	Employment	Net Land Area Required (Feddans)	Gross Land Area Required (Feddans)
1981-1982	--Development of Phase I Infrastructure--		
1982-1984	150*	3.1	7.1
1985-1989	410	8.4	19.5
1990-1994	470	9.6	22.3
1995-1999	740	15.1	35.1
Total 1982-1999	1,770	36.2	84.0

* Assumes the attraction of certain footloose industries averaging approximately 50 employees per year.

Source: Reynolds, Smith and Hills, 1979.

packaging, business services and related export oriented, and export support activities. Traditionally, these activities form the large majority of free zone tenants and commonly account for up to half of industrial estate land use. Factors present at Ismailia--limited port access, low manufacturing base of employment, and limited vicinity markets--suggest that these activities will likely fall somewhere between these two extremes. A factor of 2:1 is used here to estimate demand; that is, for every two feddans of manufacturing land demand, one feddan of commercial/service land demand will be generated. The land requirements given in Table IV-5 of 131 feddans are final planning estimates used in the financial and economic prefeasibility analysis.

TABLE IV-5

LAND AREA DEMAND ANALYSIS

ISMAILIA FREE ZONE

1981 - 1999

(FEDDANS)

Period	Industrial Land Area Requirements	Commercial/Services Land Area Requirements	Total Land Area Requirements (For Period)	Total Land Area Requirements (Cumulative)
1981-1982		--Development of Phase I Infrastructure--		
1982-1984	7.1	3.6	15.7*	15.7*
1985-1989	19.5	10.0	29.5	45.2
1990-1994	22.3	11.4	33.7	78.9
1995-1999	35.1	17.5	52.6	131.5
Total	84.0	42.5	131.5*	

* Included land demand for custom/free zone administration equal to five feddans.

Source: Reynolds, Smith and Hills, 1979.

CHAPTER V
ISMAILIA FINANCIAL ANALYSIS

PHYSICAL ASSETS

Location and Site Selection

The proposed Ismailia free zone area, as defined for the purposes of analysis, is a 4,342,800 square meter nearly rectangular land tract approximately 6 km northwest of the business district of Ismailia. The property is bounded on the southeast by the existing Ismailia Ring Road (Cairo to Port Said), on the northeast by the paved road to Abu Hamad, and on the northwest by the proposed New Port Said to Suez City highway. The south boundary as shown on Figure V-1 is approximately 0.5 km north of the existing Cairo-Ismailia Railroad. The property is traversed north and south by an existing 66 KV transmission line, and is indicated in the Ismailia Master Plan to be traversed north and south by Cairo to Port Said Railroad, for which construction on the road bed has commenced.

Topography

The proposed site has a relatively uniform slope rising from 6 meter elevation above sea level near the south boundary to 19 meters along the northeast boundary. There are several small bodies of water southwest of the site, less than 1 to 1 1/2 km away, comprising the Abu Suweir drainage district. The ground surface of most of the site is barren limestone gravel rock with fine loose sands. The site appears free of unsuitable material.

Transportation

In addition to the road system which identifies some site boundaries, an operating railroad system exists approximately 0.5 km from the site, to the south.

Utilities

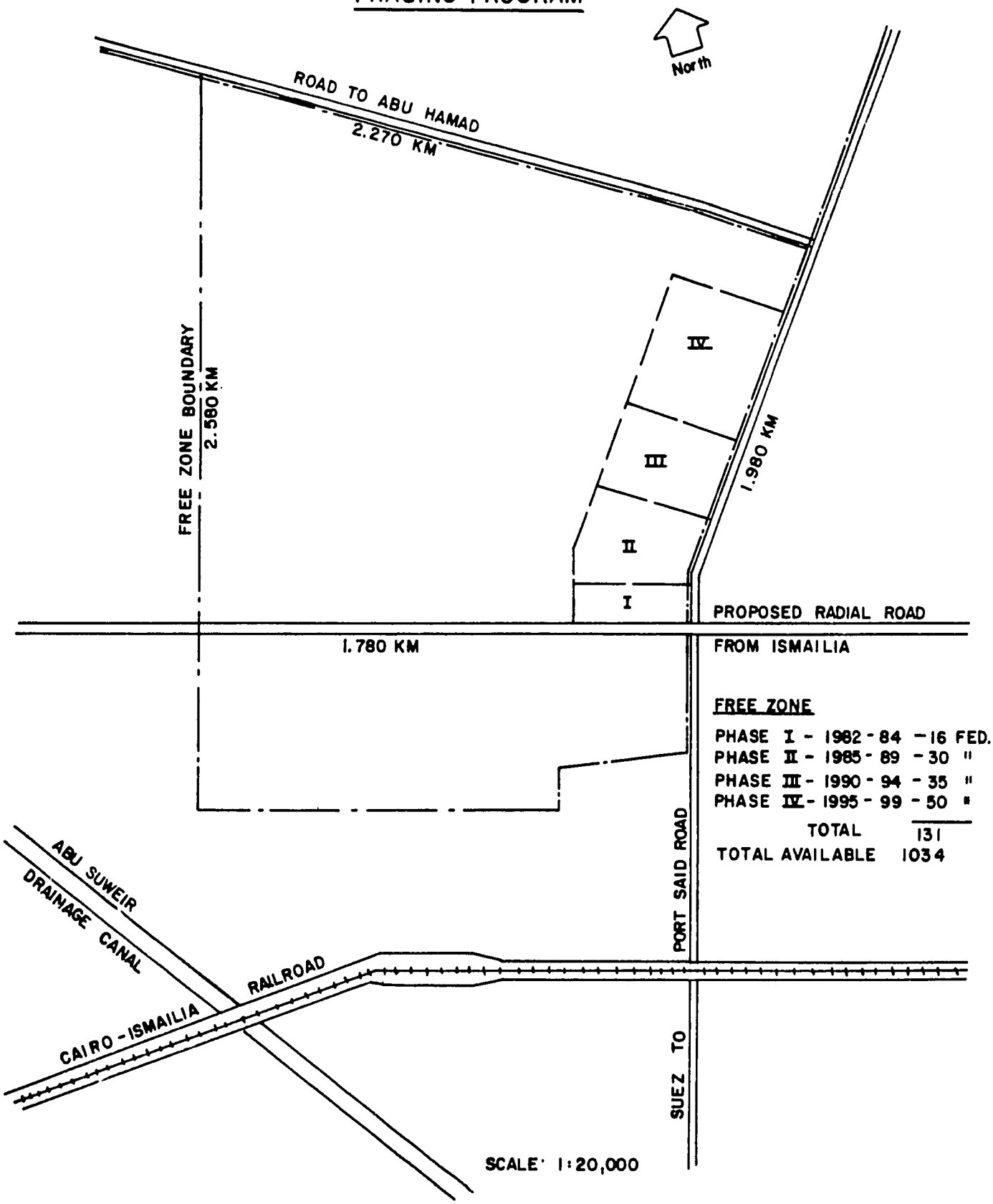
Water. Service to areas near the site has been built to satisfy local needs only (no excess or reserve is available for free zone development). A 150 MM service is reported to be supplying the aluminum factory about 1 km southeast of the site; a 100 MM former military camp water service is reported to terminate about 1 km east of the site; a proposed 400 MM high service line and elevated tank is indicated along the southeast property boundary in the Metcalf & Eddy Master Plan. Local officials indicate well water can be obtained on the site.

Wastewater. No facilities for the treatment of waste are available in the vicinity of the proposed free zone site at the present time. The nearest collection system available is approximately 5 km east of the site. The Master Plan does, however, indicate a proposed collection pumping station 1-1/2 km south of the site at the northeast corner of the junction of the existing Ring Road and Cairo-Ismailia Railroad.

Figure V-1

PROPOSED ISMAILIA FREE ZONE

PHASING PROGRAM



Electricity. The existing 66 KV electric transmission lines traversing the site have been designed to accommodate a major sub-station on the site when loads are developed.

LAND UTILIZATION

Based on the land area demand analysis (Table IV-5), the available land has been subdivided for phased growth (see Figure V-1).

Phase I, of 16.0 feddans, is located to make use of the nearest available proposed utilities and existing highway transportation. A temporary entrance for customs control will be required until Phase II is developed. The position of Phase I on the available land provides that the future radial road will not cross the required area until after the projection of this land utilization analysis.

Phases II and III, of 30.0 and 35.0 feddans, are located adjacent to Phase I on the northeast, fronting on the Suez-Port Said Road. This position provides for development of internal road systems to all other phases and permanent custom control. This location also provides for logical utility growth and their extension to future phases.

Phase IV, of 53.0 feddans, is positioned to the northeast to provide another customs gate along the Abu Hamad Road if the need is developed. Logical utility extension and topographic conditions were considered in the selection of this location.

COSTS

The cost of developing the site is shown on Table V-1. The first phase development of LE 2.5 million, or LE 154,400 per feddan represents an expenditure of funds which would also serve ongoing location growth. Normal cost is anticipated at approximately LE 80,000 per feddan.

The Ismailia facility requires a basic staff of 10 persons once tenants begin to be secured for the area. This staff need is anticipated to grow to 31 persons by the time the facility is fully absorbed. Daily wages for the staff are estimated as follows:

Function	Daily Wage
Management	15 LE/Day
Engineering/Research	12 LE/Day
Accounting/Finance	10 LE/Day
Inspection/Service	8 LE/Day
Maintenance	8 LE/Day

Additonally, the cost of security services and customs inspectors should be charged as a cost to the free zone. At an average current cost of LE 5/day, an annual cost of LE 10,000 is obtained, beginning with 8 security guards.

TABLE V-1
ISMAILIA FREE ZONE COST ESTIMATE
(LE)

Phase I	**16.0 Feddans**	
Site Development	16.0 @ 1,300 =	20,800
Roads and Drainage	16.0 @ 4,000 =	64,000
Water, Sewage, Storm	16.0 @ 20,000 =	320,000
Electrical and Substation	16.0 @ 30,000 =	480,000
Fence (Chain Link/Masonry)		365,300
Administration and Control Bldgs.		650,000
Subtotal		1,900,100
Contingency, O & P @ 30%		570,030
Phase Total		2,470,130
Phase II	**30.0 Feddans**	
Site Development	30.0 @ 1,300 =	39,000
Roads and Drainage	30.0 @ 4,000 =	120,000
Water, Sewage, Storm	30.0 @ 20,000 =	600,000
Electrical	30.0 @ 30,000 =	900,000
Fence		301,600
Subtotal		1,960,600
Contingency, O & P @ 30%		294,090
Phase Total		2,254,690
Phase III	**35.0 Feddans**	
Site Development	35.0 @ 1,300 =	45,500
Roads and Drainage	35.0 @ 4,000 =	140,000
Water, Sewage, Storm	35.0 @ 20,000 =	700,000
Electrical	35.0 @ 30,000 =	1,050,000
Fence		426,400
Subtotal		2,361,900
Contingency, O & P @ 30%		708,570
Phase Total		3,070,470
Phase IV	**53.0 Feddans**	
Site Development	53.0 @ 1,300 =	68,900
Roads and Drainage	53.0 @ 4,000 =	212,000
Water, Sewage, Storm	53.0 @ 20,000 =	1,060,000
Electrical	53.0 @ 30,000 =	1,590,000
Fence		405,600
Subtotal		3,336,500
Contingency, O & P @ 30%		1,000,950
Phase Total		4,337,450
TOTAL COST - FREE ZONE		LE 12,132,740

The Ismailia Free Zone must also bear promotion expenses. To be a success, Ismailia will require its own promotional package. It is anticipated that the initial development years will require promotional expenses approximating LE 30,000, decreasing to an average of LE 15,000 thereafter.

The final cost consideration for Ismailia is maintenance expense (materials) for the free zone. The materials portion of the maintenance expense is calculated as one-half of one percent of cumulative investment at the free zone.

The average annual operating costs for Ismailia are summarized as:

Staff	56,000
Customs/Security	23,000
Promotion	17,000
Maintenance	37,000
General & Administrative	18,000
Total	151,000

REVENUES

Revenues for the Ismailia Free Zone include land leases and service fees. Land leases are assumed to be LE 2 per square meter for industrial activity and LE 4 per square meter for commercial activity. Only one-half of the land area is assumed to be leaseable. Too, Egypt's public free zones charge approximately 1 percent of sales value for service and maintenance. Based on prior study, this amounts to approximate LE 3.50 per square meter.

CASH FLOW

A cash flow profile for the Ismailia Free Zone is shown in Figure V-2. The cash flow profile indicates that a break-even financial position is possible under the circumstances described. The establishment of the financial break-even position does encompass risk. This risk rests on the ability of the free zone to obtain the fees indicated, control its costs, and continue to contribute to the local economy. As a result, the internal rate of approximately 5 percent, as shown by the analysis, is not encouraging.

The cash flow incorporates the previously mentioned assumptions with revenues, development costs, and operating expenses to yield a net cash flow. A line by line description of the cash flow is as follows:

Line Item 103--Feddans Absorbed

This line item for the free zone cash flows shows the absorption of gross feddans between 1982 and 1999.

Line Item 104--Lease Income

The lease income for the Ismailia Free Zone is computed on the basis of two-thirds of the net feddans at 4 LE per square meter, and one-third

FIGURE V -2

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ISMAILIA FREE ZONE AND INDUSTRIAL AREA

	DESCRIPTION	TOTAL	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CASH FLOW												
	REVENUE											
103	FEDDANS ABSORBED	134				5	5	5	6	6	6	6
104	LEASE INCOME	6,972				30	60	90	124	158	192	226
105	FEES AND CHARGES	7,184						40	79	119	163	208
106	RESIDUAL VALUE	7,842										
	TOTAL REVENUE	21,998				30	60	130	208	277	355	434
	EXPENDITURES											
	DEVELOPMENT											
112	SITE DEVELOPMENT	174		10	10				19	19		
113	ELECTRIC UTIL	4,020		240	240				450	450		
114	WATER SYSTEM											
115	SEWAGE SYSTEM	2,480		160	160				300	300		
116	SOLID WASTE DIS											
117	FENCES	1,499		183	183				151	151		
118	IRRIGATION SYS.											
119	STREETS	535		32	32				60	60		
120	RAILROAD											
121	WATERFRONT											
122	VEHICLES											
123	WELDING FACILITY											
124	SUPPORT BUILDINGS	650		325	325							
125	ENGINEERING-PRELIMIN											
126	ENGINEERING-FINAL											
127	WAREHOUSE CONSTRUCTI											
128	CONTINGENCY - OTHER	2,865		285	285				294	294		
	TOTAL INVESTMENT	12,427		1,235	1,235				1,274	1,274		
	OPERATING											
131	LABOR	1,119		11	11	23	23	23	23	43	43	43
132	PROMOTION	345				30	31	30	30	15	15	15
133	GENERAL AND ADMIN	354				1	2	3	5	7	9	11
134	SECURITY	465				10	10	10	10	19	19	19
135	INTEREST											
136	MAINTENANCE	731		6	12	12	12	12	19	25	25	25
	TOTAL OPERATING	3,014		19	24	76	77	79	87	109	111	117
	NET CASH FLOW	6,558		-1,253	-1,259	-46	-17	51	-1,152	-1,107	244	321

FIGURE V -2 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES — MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ISHAILIA FREE ZONE AND INDUSTRIAL AREA

	DESCRIPTION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
CASH FLOW											
	REVENUE										
103	FEDDANS ABSORBED	6	7	7	7	7	7	11	11	11	11
104	LEASE INCOME	260	299	339	378	418	457	517	577	637	697
105	FEES AND CHARGES	253	297	342	394	446	496	550	602	669	759
106	RESIDUAL VALUE										
	TOTAL REVENUE	512	596	680	772	864	955	1,067	1,179	1,317	1,456
	EXPENDITURES										
	DEVELOPMENT										
112	SITE DEVELOPMENT		23	23				34	34		
113	ELECTRIC UTIL		525	525				795	795		
114	WATER SYSTEM										
115	SEWAGE SYSTEM		350	350				530	530		
116	SOLID WASTE DIS										
117	FENCES		213	213				203	203		
118	IRRIGATION SYS.										
119	STREETS		70	70				106	106		
120	RAILROAD										
121	WATER/WHARF										
122	VEHICLES										
123	WEIGHING FACILITY										
124	SUPPORT BUILDINGS										
125	ENGINEERING-PRELIMIN										
126	ENGINEERING-FINAL										
127	WAREHOUSE CONSTRUCTI										
128	CONTINGENCY - OTHER		354	354				500	500		
	TOTAL INVESTMENT		1,535	1,535				2,169	2,169		
	OPERATING										
131	LABOR	43	43	60	66	66	66	66	91	91	91
132	PROMOTION	15	15	15	15	15	15	15	15	15	15
133	GENERAL AND ADMIN	13	15	17	19	22	24	27	29	33	36
134	SECURITY	19	19	29	29	29	29	29	37	37	37
135	INTEREST										
136	MAINTENANCE	25	33	40	40	40	40	51	62	69	62
	TOTAL OPERATING	115	125	163	170	172	175	188	235	238	242
	NET CASH FLOW	397	-1,064	-1,022	602	691	780	-1,290	-1,225	1,079	1,214

FIGURE V -2 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES — MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ISMAILIA FREE ZONE AND INDUSTRIAL AREA

	DESCRIPTION	1999	2000
	CASH FLOW		
	REVENUE		
103	REFUNDS ABSORBED	11	
104	LEASE INCOME	757	757
105	FEES AND CHARGES	838	917
106	RESIDUAL VALUE		7,842
	TOTAL REVENUE	1,595	9,515
	EXPENDITURES		
	DEVELOPMENT		
112	SITE DEVELOPMENT		
113	ELECTRIC UTIL		
114	WATER SYSTEM		
115	SEWAGE SYSTEM		
116	SOLID WASTE DIS		
117	FENCES		
118	IRRIGATION SYS.		
119	STREETS		
120	RAILROAD		
121	WATERFRONT		
122	VEHICLES		
123	WEIGHING FACILITY		
124	SUPPORT BUILDINGS		
125	ENGINEERING-PRELIMIN		
126	ENGINEERING-FINAL		
127	WAREHOUSE CONSTRUCTI		
128	CONTINGENCY - OTHER		
	TOTAL INVESTMENT		
	OPERATING		
131	LABOR	91	91
132	PROMOTION	15	15
133	GENERAL AND ADMIN	40	42
134	SECURITY	37	37
135	INTEREST		
136	MAINTENANCE	62	62
	TOTAL OPERATING	245	247
	NET CASH FLOW	1,349	9,268

at 2 LE per square meter. The lease revenue is accumulated as land is absorbed.

Line Item 105--Fees and Charges

The Ismailia Free Zone fees are computed at LE 3.50 per square meter for each net feddan per year.

Line Item 106--Residual Value

This value is the undepreciated residual value of the facility based upon a 30-year life and sold in the year 2000.

Line Item--Total Revenue

This line item is the sum of line items 104, 105, and 106.

Line Item 112--Site Development

This line item is calculated using LE 1,300 per gross feddan of developed acres in the free zone.

Line Item 113--Electric Utilities

This line item is computed based upon a cost of LE 30,000 per gross feddan for the free zone area.

Line Item 115--Sewage System

This line item includes the estimated cost for water, sewage, and storm drains for the free zone area. It is computed based upon a cost of LE 20,000 per gross feddan in the development area.

Line Item 117--Fences

This line item is the estimated cost for fencing the individual phases in the free zone.

Line Item 119--Streets

This line item includes both the roads and the associated drainage with the roads and is computed based upon a cost of LE 4,000 per gross feddan.

Line Item 124--Support Buildings

This line item is the construction of the operations facility for the free zone area. It is based upon an estimated cost for the building of $650,000 spread over the one-year period between 1980 and 1981.

Line Item 128--Contingency-Other

This line item is a contingency for development and is based upon 30 percent of the development cost as shown above.

Line Item--Total Investment

This line item is the sum of line items 112 through 128.

Line Item 131--Labor

This line item includes the labor charges for the operation of the free zone. This item includes labor cost for management, clerical, technical, and miscellaneous cost incurred during the operation of the free zone.

Line Item 132--Promotion

This line item is an estimation of the promotion cost for the free zone. The estimated expense commences in 1982 and runs until project completion.

Line Item 133--General and Administrative

This line item is included for both the free zone to cover the administrative cost for the operation of the area. It is estimated at 2 1/2 percent of total revenue.

Line Item 134--Security

This line item is the estimated labor cost for security personnel.

Line Item 136--Maintenance

This line item is based upon one-half of one percent of the total development cost.

Line Item--Total Operating

This line item is the sum of line items 131 through 136.

Line Item--Net Cash Flow

This line item is the sum of total revenue less total investment and total operating cost.

COST/BENEFIT ANALYSIS

The cost/benefit analysis assumes only the cost to the Government of Egypt for the establishment and operation of the Ismailia Free Zone. The resulting benefits from the phases of the Ismailia area that would accrue to Egypt are included in this analysis; however, costs which are accrued

to investors, and the benefits which other countries might receive through foreign ownership considerations, are excluded. This analysis includes the absorption of 134 feddans of the Ismailia Free Zone between the years 1982 and 1999.

Employment

It is assumed that the free zone project will have at least the same rate of employment and business volume per feddan as do the existing free zone investors. This assumption is based upon historical trends, and if any significant growth in the industrial sectors takes place in the near future, then the projected benefits listed on the following tables should be considered somewhat conservative.

In addition to the justification for using this figure based upon historical trends is the fact that this ratio most likely provides a conservative estimate upon which to base some of the benefits. In other countries, figures of 50 to 75 (or more) employees per net acre are frequently assumed for intensive development situations like free zones. If current development trends continue, it is doubtful that employment per net feddan would show a decrease; but to the contrary, it is more than likely to show an increase per net feddan. Table V-2 shows the investor projected employment. These totals are accumulated as net industries move into the area and provide demand for new employees.

The 1978 figures show that approximately 81 percent of employees in other free zones are Egyptian while the remaining 19 percent are non-Egyptian. However, for purposes of this analysis, it is assumed that a 90/10 ratio is most likely. Table V-2 also shows the demand for construction workers in the free zone sector and in the investor sector of the free zone. Free zone sector construction worker demand is based upon one employee for every LE 30,000 of development expenditures. The investor demand for construction workers is based upon historical trends and is estimated to be approximately 11.2 construction workers per net feddan of developed area. The total employment benefit for the Ismailia area shows a demand of nearly 26,000 man-years of employment over a 20-year period.

Wages, Fringe Benefits

The projected investor wage and fringe benefits for the free zone and industrial areas are based upon actual wages paid to both Egyptians and non-Egyptians in 1978. The average Egyptian annual wage used was LE 1,634 and the non-Egyptian wage was LE 6,001. This data is reasonably accurate because the jobs represent the approximate skills that would be required in the free zone area and the skills/unskilled ratio should be similar to those used in other free trade zones area in Egypt (Table V-3).

It is assumed that all wages paid to Egyptian workers will accrue to Egypt's economy, while 50 percent of those paid to non-Egyptians will accrue to Egypt. Half of the foreign employees income may legally leave Egypt, and it is assumed that it will.

TABLE V-2

ISMAILIA FREE ZONE

EMPLOYMENT TOTALS

1980 - 1999

Year	Investor Employment			Construction Employment			Free Zone Employment	Total Employment
	Egypt	Non-Egypt	Total	Free Zone Sector	Investor	Total		
1980	-	-	-	40	-	40	5	45
1981	-	-	-	40	-	40	5	45
1982	118	13	131	-	30	30	18	179
1983	236	26	262	-	30	30	18	310
1984	354	39	393	-	30	30	18	441
1985	486	54	540	42	34	76	18	634
1986	619	68	687	42	34	76	34	797
1987	751	83	834	-	34	34	34	902
1988	882	98	980	-	34	34	34	1,048
1989	1,014	113	1,127	-	34	34	34	1,195
1990	1,169	130	1,299	51	39	90	34	1,423

TABLE V-2 (Continued)

ISMAILIA FREE ZONE

EMPLOYMENT TOTALS

1980 - 1999

Year	Investor Employment			Construction Employment			Free Zone Employment	Total Employment
	Egypt	Non-Egypt	Total	Free Zone Sector	Investor	Total		
1991	1,323	147	1,470	51	39	90	52	1,612
1992	1,478	164	1,642	-	39	39	52	1,733
1993	1,632	181	1,813	-	39	39	52	1,904
1994	1,795	200	1,995	-	39	39	52	2,086
1995	2,020	224	2,244	72	60	132	52	2,428
1996	2,254	250	2,504	72	60	132	70	2,706
1997	2,488	276	2,764	-	60	60	70	2,894
1998	2,721	302	3,023	-	60	60	70	3,153
1999	2,955	328	3,283	-	60	60	70	3,413

Source: Reynolds, Smith and Hills, 1979.

TABLE V-3

PROJECTED FREE ZONE ANALYSIS

WAGES, FRINGE BENEFITS ACCRUING TO EGYPT

1980 - 1999

(LE MILLIONS)

Year	Investors			Free Zone Total	Wages Total
	Egypt	Non-Egypt	Total		
1980	-	-	-	.01	.01
1981	-	-	-	.01	.01
1982	.24	.09	.33	.02	.35
1983	.47	.17	.64	.02	.66
1984	.72	.26	.98	.02	1.00
1985	.99	.36	1.35	.04	1.39
1986	1.25	.46	1.71	.04	1.75
1987	1.52	.56	2.08	.04	2.12
1988	1.79	.65	2.44	.04	2.48
1989	2.06	.75	2.81	.04	2.85
1990	2.37	.86	3.23	.04	3.27
1991	2.68	.97	3.65	.07	3.72
1992	3.00	1.08	4.08	.07	4.15
1993	3.31	1.20	4.51	.07	4.58
1994	3.62	1.31	4.93	.07	5.00
1995	4.10	1.49	5.59	.07	5.66
1996	4.57	1.66	6.23	.09	6.32
1997	5.04	1.82	6.86	.09	6.95
1998	5.52	1.99	7.51	.09	7.60
1999	5.99	2.16	8.15	.09	8.24

Source: Reynolds, Smith and Hills, 1979.

The Government of Egypt will also receive benefits in the form of money paid by investors (through fringes on wages) for health and community services for employees. The actual figure of fringes paid on salaries by investors is close to 24 percent of wages. For the benefit analysis, we lowered that figure to 20 percent, since not all of the fringes will accrue to Egypt.

INVESTOR CONTRIBUTION

The investors are anticipated to stimulate the Egyptian economy through means other than wages. The most direct examples are local purchases for production, operating and maintenance cost, and the return of Egyptian capital.

Based upon an examination of the other Egyptian free zones, it is estimated that annual sales volumes approximate LE 359 per square meter or approximately LE 1.5 million per feddan. Based upon the accumulative absorption of feddans in the trade free zone of Ismailia, the total sales are indicated on Table V-4.

Of the total purchases made by firms in Egyptian free zones, only a proportion will actually affect the local economy. Based upon examination of the other trade zones, it is estimated that approximately 10 percent of the total sales volume in Ismailia will be oriented to the local economy for purchases. Similarly, local expenditures for such items as private security, building maintenance, and utility bills will account for an approximate 2 percent benefit to the local economy.

Another benefit accruing from free zone sales will be the Egyptian investment profits. Currently approved projects in the public free zone show foreign capital investment to be over 90 percent of the total capital investment for those projects, with local investments exceeding 7 percent. We are assuming that profits will be distributed in the same proportion as initial capital investment, and that the proportion of local to foreign will remain fairly stable over time. For planning purposes, it is estimated that .09 percent of total sales will be allocated to local profits in the Ismailia free trade zone.

Investment

Benefits will also be derived from expenditures by these investors during the construction phase of their operation. These expenditures will include wages and fringes paid to construction workers, as well as local materials purchased for construction. A figure of LE 115 per square meter of developed land is assumed for this purpose with approximately 30 percent benefit to accrue to Egypt. The results of this investment are shown on Table V-5. Similarly, benefits to the Egyptian economy will accrue directly from expenditures for the establishment of infrastructure at the free zones by the Free Zone Sector, both in the form of construction workers wages and in terms of local materials used in construction. It is assumed that 70 percent of the infrastructure cost will be spent for Egyptian goods and labor while the remaining 30

TABLE V-4

FREE ZONE ANALYSIS

SUMMARY OF SALES VALUE, LOCAL PURCHASES,

LOCAL EXPENSES, AND LOCAL PROFITS

1982-2000

(LE MILLIONS)

	Ismailia Free Zone				
Year	Total Sales	Local Purchases	Local Expenses	Local Profits	Total Contribution
1982	4.0	.4	.1	-	0.5
1983	8.0	.8	.2	-	1.0
1984	12.0	1.2	.2	0.1	1.5
1985	16.6	1.7	.3	0.2	2.2
1986	21.1	2.1	.4	0.2	2.7
1987	25.7	2.6	.5	0.2	3.3
1988	30.1	3.0	.6	0.3	3.9
1989	34.7	3.5	.7	0.3	4.5
1990	40.0	4.0	.8	0.4	5.2
1991	45.2	4.5	.9	0.4	5.7
1992	50.5	5.0	1.0	0.4	6.4
1993	55.8	5.6	1.1	0.5	7.2
1994	61.1	6.1	1.2	0.5	7.8
1995	69.0	6.9	1.4	0.6	9.4
1996	77.0	7.7	1.5	0.7	9.9
1997	85.0	8.5	1.7	0.7	10.9
1998	93.0	9.3	1.8	0.8	11.9
1999	101.0	10.1	2.0	0.9	13.0
2000	101.0	10.1	2.0	0.9	13.0

Source: Reynolds, Smith and Hills, 1979.

TABLE V-5

FREE ZONE ANALYSIS

SUMMARY OF FREE ZONE CONSTRUCTION EXPENDITURES

LOCAL, FOREIGN CURRENCY (LE MILLIONS)

1980-2000

Year	Free Zone		Investor	
	Local	Foreign	Total	Egypt
1980	1.2	0.4	-	-
1981	1.2	0.4	-	-
1982	-	-	1.3	0.4
1983	-	-	1.3	0.4
1984	-	-	1.3	0.4
1985	1.3	0.4	1.4	0.4
1986	1.3	0.4	1.4	0.4
1987	-	-	1.4	0.4
1988	-	-	1.4	0.4
1989	-	-	1.4	0.4
1990	1.5	0.5	1.7	0.5
1991	1.5	0.5	1.7	0.5
1992	-	-	1.7	0.5
1993	-	-	1.7	0.5
1994	-	-	1.7	0.5
1995	2.2	0.7	2.6	0.8
1996	2.2	0.7	2.6	0.8
1997	-	-	2.6	0.8
1998	-	-	2.6	0.8
1999	-	-	2.6	0.8
2000	-	-	2.6	0.8

Source: Reynolds, Smith and Hills, 1979.

percent will be primarily used to purchase foreign materials. The estimated benefits in this area are also shown on Table V-5.

Free Zone Cost and Benefits

The free zone, through its annual operation and maintenance of the free zones, benefits the Egyptian economy in the form of jobs for staff, security, customs, and service personnel, as well as in the form of material purchases. It is assumed that all personnel will be Egyptian, and that all of their wages will enter the local economy. The fringes paid on wages will also accrue to the Egyptian economy. These items (wages, fringes, and materials) are expressed directly as costs as well as benefits in the cost/benefit analysis.

In addition to the above, there are numerous benefits to Egypt which will come from the construction of the public free zones which are non-quantifiable. These would include the transfer of technology and associated increase in skills in the Egyptian labor force, improvement in the quality of life of many Egyptians, and the indirect benefits which will come about from the money being spent by the free zone workers. Also, while most foreign equipment will return to the investor's home country when a project is terminated, some of it will undoubtedly remain in Egypt. Similarly, when an investor vacates a building, it becomes the property of the Government of Egypt, thus providing a further source of revenue.

Various costs to the Government of Egypt will result from the free zone. The most obvious includes the cost of establishing infrastructure, as well as operation and maintenance costs.

There is also the cost of providing community services (health care, pensions, etc.) for all free zone workers. This is paid for primarily through fringes on wages. Therefore, fringes not already included in the above costs (infrastructure and operations and maintenance) should be added into the total cost to the government.

The government subsidizes many goods and services purchased in Egypt. Therefore, when free zone employees purchase certain items, it represents a differential cost to the government. The U.S. State Department has recently noted that the amount which the government has to pay to subsidize goods and services purchased by an average worker amounts to about 25 percent of his wages. Therefore, as a cost to the government, the analysis used 25 percent of all wages paid to staff, construction workers, and all Egyptian employees of the investors. Also the 25 percent figure was applied to the half of non-Egyptian's wages which would be spent in Egypt.

In addition, a 60 percent figure is also applied to all local construction materials used in the free zones. Some of these materials are subsizided, though an exact figure is not accurately determinable. The figure used herein is thought to give reasonable consideration to this factor of the Egyptian economy. The cost of providing electricity

and water and sewer services to the individual investors is assumed to be double the investors' cost, to cover the extremely high subsidies on these items. The analysis also assumed a 50 percent subsidy on all local purchases.

The results of the analysis indicate that the Ismailia Free Zone may achieve a 1.8:1.0 benefit to cost ratio as seen in Tables V-6 and V-7.

TABLE V-6

FREE ZONE ANALYSIS

BENEFITS ACCRUING TO EGYPT FROM ISMAILIA FREE ZONE

(FINANCIAL VALUES IN LE MILLIONS)

Year	Investors Wages & Fringes	Rental and Fees	Free Zone Sector		Investor		Total Benefits
			Operations	Construction	Operations	Construction	
1980	-	-	.02	1.2	-	-	1.22
1981	-	-	.02	1.2	-	-	1.22
1982	.33	.03	.08	-	.5	.4	1.34
1983	.64	.06	.08	-	1.0	.4	2.18
1984	.98	.13	.08	-	1.5	.4	3.09
1985	1.35	.20	.11	1.3	2.2	.4	5.56
1986	1.71	.28	.11	1.3	2.7	.4	6.50
1987	2.08	.36	.11	-	3.3	.4	6.25
1988	2.44	.43	.12	-	3.9	.4	7.29
1989	2.81	.51	.13	-	4.5	.4	8.35
1990	3.23	.59	.17	1.5	5.2	.5	11.19
1991	3.65	.68	.17	1.5	5.7	.5	12.20
1992	4.08	.77	.17	-	6.4	.5	11.92
1993	4.51	.86	.18	-	7.2	.5	13.25
1994	4.93	.95	.19	-	7.8	.5	14.37
1995	5.59	1.06	.24	2.2	9.4	.8	19.29
1996	6.23	1.18	.24	2.2	9.9	.8	20.55
1997	6.86	1.32	.24	-	10.9	.8	20.12
1998	7.51	1.46	.25	-	11.9	.8	21.92
1999	8.15	1.60	.25	-	13.0	.8	23.80
Total	67.08	12.47	2.96	12.4	107.0	9.7	211.61

Source: Reynolds, Smith and Hills, 1979.

TABLE V-7

FREE ZONE ANALYSIS

COSTS ACCRUING TO EGYPT FROM ISMAILIA FREE ZONE

(FINANCIAL VALUES IN LE MILLIONS)

Year	Free Zone Sector Operations & Subsidies	Investors Construction Subsidies	Investors Utilities & Subsidies	Employee Services (Fringes)	Subsidies on Employee Expenditures	Sub-Total Costs	Investors Purchase	Total Costs
1980	2.04	-	-	-	-	2.04	-	2.04
1981	2.04	-	-	-	-	2.04	-	2.04
1982	0.10	.13	.10	.08	.07	0.48	.20	0.68
1983	0.10	.13	.20	.15	.14	0.72	.40	1.12
1984	0.10	.13	.20	.23	.22	0.88	.60	1.48
1985	2.23	.13	.30	.32	.30	3.28	.85	4.13
1986	2.23	.13	.40	.40	.38	3.54	1.05	4.59
1987	.14	.13	.50	.49	.47	1.73	1.30	3.03
1988	.15	.13	.60	.57	.54	1.99	1.50	3.49
1989	.16	.13	.70	.66	.63	2.28	1.75	4.03
1990	2.73	.17	.80	.76	.73	5.19	2.00	7.19
1991	2.73	.17	.90	.86	.82	5.48	2.25	7.73
1992	.21	.17	1.00	.96	.92	3.26	2.50	5.76
1993	.23	.17	1.10	1.06	1.02	3.58	2.80	6.38
1994	.24	.17	1.20	1.16	1.11	3.88	3.05	6.93
1995	4.00	.26	1.40	1.31	1.25	8.22	3.45	11.67
1996	4.00	.26	1.50	1.46	1.40	8.62	3.85	12.47
1997	.30	.26	1.70	1.61	1.54	5.41	4.25	9.66
1998	.31	.26	1.80	1.76	1.69	5.82	4.65	10.47
1999	.31	.26	2.00	1.92	1.84	6.33	5.05	11.38
Total	24.35	3.19	16.40	15.76	15.07	74.77	41.50	116.27

Source: Reynolds, Smith and Hills, 1979.

CHAPTER VI
POTENTIAL FOR COMBINATION FREE ZONE AND INDUSTRIAL DEVELOPMENT

Because the Ismailia Free Zone is not sufficiently profitable on a financial basis as a stand-alone facility, Reynolds, Smith and Hills analyzed the combination of the free zone with the expansion of the Ring Road industrial estate. This activity is considered appropriate for the Governorate's analysis as the free zone would be a high risk venture. The factors influencing this posture are described hereunder.

The Suez Canal Regional Industrial Plan (1978) recommended industrial free zones to be located at Port Said and Suez, but not at Ismailia due to lack of port facilities. In the Second Progress Report of the Plan (September, 1977, p. 2-3), various criteria were listed that should be considered in evaluating the feasibility of a free zone. These criteria are discussed below with relation to Ismailia.

a) Fiscal and monetary exemptions. These would be similar throughout Egypt, regardless of location.

b) Availability of skilled labor at low wages. Ismailia has above average skilled labor in relation to the nation as a whole. Moreover, the area has a tradition of utilizing female labor with associated lower wages.

c) Frequent, good and varied transportation service for both importation and export. The Ismailia area is not served with seaport facilities, and is not suitable for heavy industrial development. It does have access, however, to two major seaports and the nation's leading airport within two hours travel by road. The city is well served by road transport facilities, and is linked via a four-lane highway with Cairo. Although Ismailia is connected to Port Said, and Cairo via railway, the service would need to be improved to compete favorably with existing road services. The proposed site is, however, in close proximity to an existing railway line.

d) Political stability and development potential of the host country. These factors are considered uniform throughout Egypt.

e) Communications services; for example, telephones, telex, and postal services. Ismailia is served by all the above communications, which are not noticeably less efficient than those in Cairo.

f) Available supporting services; for example, banks, contractors, transportation companies, etc. Branches of most major national banks are present in Ismailia. With relation to contractors, the city is more than amply served by Arab contractors, the nation's largest contracting company. Ismailia's employment in the transport sector is twice that of the national average.

g) Availability and reliability of utilities and infrastructural services. On average, Ismailia is not much different than other areas in Egypt.

h) Pleasant environment, with good housing and social services. Ismailia is commonly referred to as "the garden city," and it offers a clean, quiet, and attractive environment. Housing for most ranges of income is more available than in most Eygptian cities, and social service are generally adequate. Primary and seconary schools catering to foreign children are not presently available, however.

i) Ease of establishing and operation a plant with a minimum of delay. The requirements of Law 43 and other legislation apply equally to all potential free zone locations. The consultant found no justification to suggest that the Governorate of Ismailia would impose any additional barriers to a free zone operation within the area.

One important aspect that the Suez Canal Regional Industrial Plan did not mention, however, was that of competition. Within Egypt, there are four existing free zones (El Ameria, Nasr City, Port Said, and Suez) and one planned industrial free zone (Adabiya, to the south of Suez).

Based upon existing trends, prime free zone industrial activity would appear to be centered around electronics and light assembly. Agro-industrial activities and boat and repair manufacturing are by nature outside of the proposed free zone area, although additional site-specific private free zones may be contemplated. With regard to competition from other free zones, Adabiya activities will likely concentrate on medium to heavy manufacturing, rather than electronics. The free zones of Alexandria and Port Said, however, do offer locational and market advantages depending upon the export destination of products (i.e., Europe and North America). Nasr City, located inland near Cairo and served by an international airport, will by necessity be concentrating on high value export commodities, as would an Ismailia Free Zone.

Since the range of appropriate free zone activities is limited, however, only a small free zone area would be needed or feasible. It is recommended that part of the presently reserved area for free zone operations be incorporated with the existing West Ring Road Industrial Estate area for the following reasons:

1) The reserved free zone area will enable expansion of the industrial estate if and when needed.

2) In order to be in a position to export products overseas, almost all newly-created activities need to build up an initial domestic market within Egypt. A joint industrial estate/free zone operation would enable foreign, joint-venture, and domestic companies to be liable to "inland investment" criteria and regulations during its inital build-up phase, and then be

granted free zone status when and if a majority of its products was exported.

3) Should a company enter as a free zone activity, but consistently orientate its products to the domestic market, its status could easily be changed to that of an inland investment.

Since for security reasons both the industrial estate and proposed free zone would need to have secured perimeters once fully established, the above possible joint operation is fully feasible. This operation would give Ismailia an initial advantage over other existing and planned free zones--that of enabling companies the choice (depending upon short or long-term trends or operations) to be either domestic market or export oriented with minimal hindrance.

The basis for this recommendation lies in the anticipated capacity for Ismailia's industrial/non-factory activity development as opposed to free zone development.

- The unification of these areas under one management team will allow Ismailia to offer a consistent package to all inquiries in the area for industrial space.

- The unification will result in lower infrastructural and development costs to the Governorate and to the investor.

- The management team will be able to handle both developments without a significant increase in personnel.

- Ismailia will be more able to control location and growth.

- The venture will be far more profitable and, similarly, offer a far better visual appearance in the Ring Road.

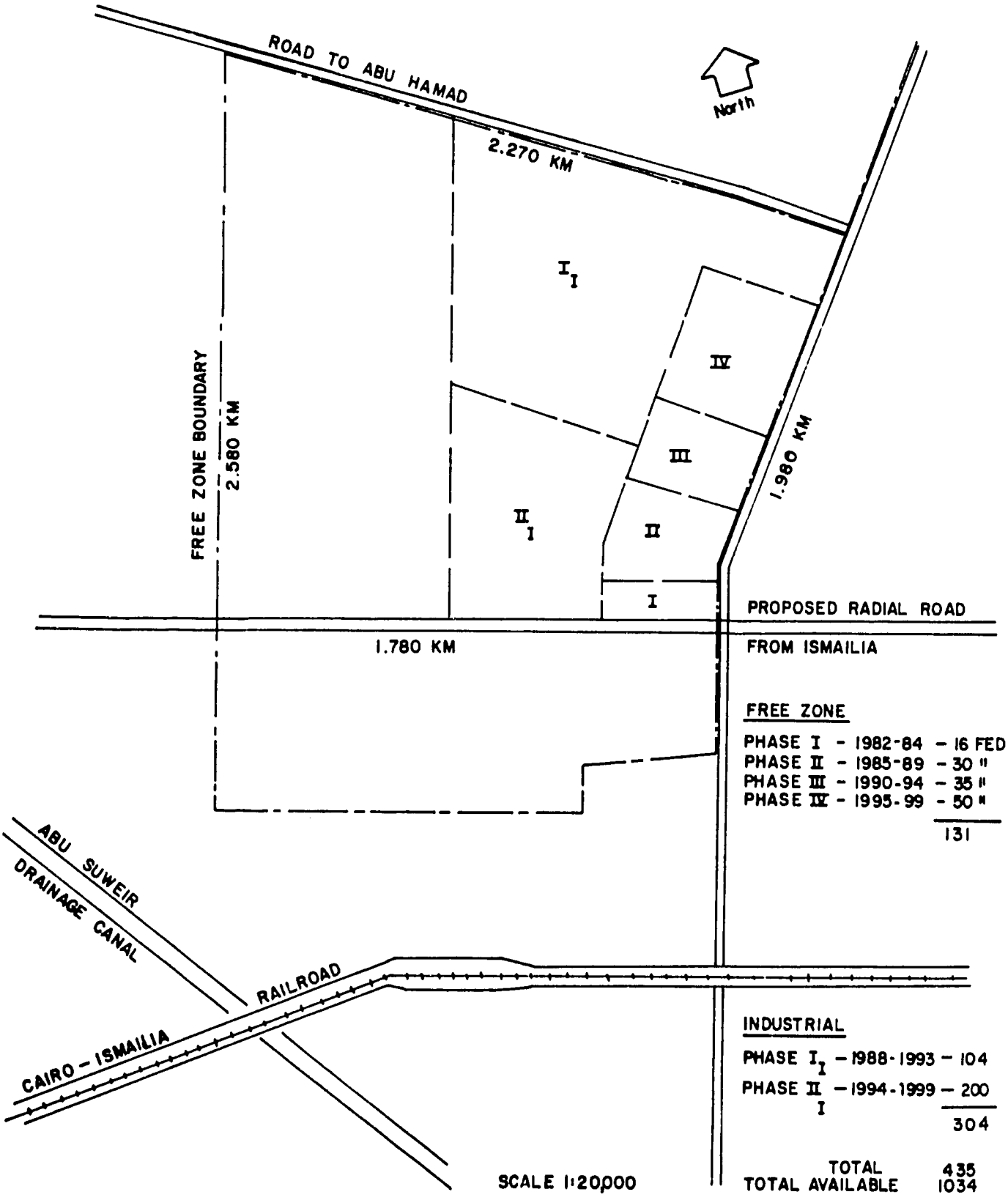
The results of unifying the free zone with the industrial estate are shown in the alternative financial cash flow profile established for the Ismailia Free Zone. The Phase IV free zone development would include 100 feddans for industrial estate, and Phase V would encompass 200 feddans of industrial estate activity. Should the existing industrial area become absorbed prior to its anticipated mid-1980 schedule, less free zone area could be developed and more emphasis could be given to basic industrial development (Figure VI-1).

The orientation of industry into the Ring Road area can be controlled by the Governorate. Using the land absorption protential from Table IV-2, and anticipating that 60 percent of the requirements can be accommodated at the Ring Road area, the free zone location would accommodate industrial activity beginning in the latter 1980s.

It is estimated that the current industrial area offers 130 feddans remaining for absorption. The pace of absorption would carry this land through approximately 1988. Unless the specific site data of the free zone area shows to be more suitable for development, it is recommended

Figure VI-1

PROPOSED ISMAILIA FREE ZONE & INDUSTRIAL EXPANSION



that the existing industrial area be absorbed before spreading infrastructure to another location, where annual absorption is projected to approximate 24 to 38 feddans annually.

It should be noted that the analysis of industrial land absorption excludes consideration of Volkswagon or Deutz. These companies could be included or excluded for this industrial land bank depending upon their specific requirements. Indeed, they may wish to be separate from other industrial activity. Should they wish to locate in the area, they could encompass the future phases delineated for the free zone with the free zone, if pursued by the Governorate, expanding in an east/west direction rather than the north/south direction presently shown.

It should also be noted that this concept would serve as a safety valve for Ismailia's industrial growth. The unallocated land at the Ring Road industrial area may not be inexpensively suitable for development, so that resuming the proposed land area across the road would allow expansion to continue.

COSTS

The costs of developing the industrial site is shown on Table VI-1. The development of LE 7.7 million represents an expenditure of funds which would serve for approximately 5 years. An additional cost of LE 14.6 million is anticipated to finalize development.

CASH FLOW

A cash flow profile is shown in Figure VI-2. The internal rate of return on the combined free zone/industrial estate expansion approximates 7 percent, largely because of credits for residual value. Despite the marginal return from this venture, it offers less risk to the Governorate than a free zone as industrial activity is a certainty, while free zone activity is speculative and remains to be proven.

The cash flow incorporates the previously mentioned assumptions with revenues, development, expenses, and operating expenses to yield a net cash flow. A line by line description of the cash flow is as follows:

Line Item 103--Feddans Absorbed

This line item for both the free zone and industrial area cash flows shows the absorption of gross feddans between 1982 and 1999.

Line Item 104--Lease Income

The lease income for the Ismailia Free Zone is computed on the basis of: two-thirds of the net feddans at 4 LE per square meter, and one-third at 2 LE per square meter. All of the industrial area is computed at 4 LE per square meter using net feddans. The lease revenue is accumulated as land is absorbed.

TABLE VI-1

ISMAILIA COST ESTIMATE

INDUSTRIAL INCREMENT TO FREE ZONE

(LE)

INDUSTRIAL

Phase IV	105.0 Feddans	
Site Development	105.0 @ 1,300 =	136,500
Roads and Drainage	105.0 @ 4,000 =	420,000
Water, Sewage, Storm	105.0 @ 20,000 =	2,100,000
Electrical	105.0 @ 30,000 =	3,150,000
Fence		105,857
Subtotal		5,912,357
Contingency, O & P @ 30%		1,773,707
Phase Total		7,686,064

Phase V	200.0 Feddans	
Site Development	200.0 @ 1,300 =	260,000
Roads and Drainage	200.0 @ 4,000 =	800,000
Water, Sewage, Storm	200.0 @ 20,000 =	4,000,000
Electrical	200.0 @ 30,000 =	6,000,000
Fence		201,600
Subtotal		11,261,600
Contingency		3,378,480
Phase Total		14,640,080

Summary of Development Cost	Free Zone	Industrial	Total
Phase I	2,470,130	-	2,470,130
Phase II	2,254,690	-	2,254,690
Phase III	3,070,470	-	3,070,470
Phase IV (FZ)	4,337,450	-	4,377,450
Phase IV (I)		7,686,064	7,686,064
Phase V (I)		14,640,080	14,640,080
Total	12,132,740	22,326,144	34,458,884

FIGURE VI-2

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES — MINISTRY OF ECONOMY
REVENUES SOUTH AND HILLS ECONOMIC ZONE

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ISMAILIA FREE ZONE AND INDUSTRIAL AREA

	DESCRIPTION	TOTAL	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
CASH FLOW												
	REVENUE											
103	FEDDANS ABSORBED	434				5	5	5	6	6	6	4
104	LEASE INCOME	22,663				30	60	90	124	158	192	224
105	FEES AND CHARGES	11,107						40	79	119	163	209
106	RESIDUAL VALUE	24,434										
	TOTAL REVENUE	58,204				30	40	135	203	277	355	434
	EXPENDITURES											
	DEVELOPMENT											
112	SITE DEVELOPMENT	564		10	10				19	19	43	43
113	ELECTRIC UTIL	13,020		241	240				450	450	1,090	1,090
114	CATV SYSTEM											
115	SEWAGE SYSTEM	3,030		150	150				300	300	667	667
116	SOLID WASTE DIS											
117	FENCE	1,501		183	183				151	151	34	34
118	IRRIGATION SYS.											
119	STREETS	1,736		32	32				60	60	133	133
120	RAILROAD											
121	WATER/WHARF											
122	VEHICLES											
123	ADMIN. FACILITY											
124	SUPPORT BUILDINGS	450		225	225							
125	EQUIPMENT-PRELIMIN											
126	ENGINEERING-FINAL											
127	WAREHOUSE CONSTRUCTI											
128	CONTINGENCY - OTHER	7,935		395	395				294	294	563	563
	TOTAL INVESTMENT	34,787		1,235	1,235				1,274	1,274	2,440	2,440
	OPERATING											
131	LABOR	1,119		11	11	23	23	23	23	43	43	43
132	PROMOTION	345				30	30	30	30	15	15	15
133	GENERAL AND ADMIN	814				1	2	3	5	7	9	11
134	SECURITY	465				10	10	10	10	19	19	19
135	INTEREST											
136	MAINTENANCE	1,646		6	12	12	12	12	19	25	37	49
	TOTAL OPERATING	4,419		18	24	76	77	79	87	109	123	139
	NET CASH FLOW	19,393		-1,253	-1,259	-46	-17	51	-1,158	-1,107	-2,208	-2,144

FIGURE VI-2 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES — MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ISMAILIA FREE ZONE AND INDUSTRIAL AREA

	DESCRIPTION	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
CASH FLOW											
	REVENUE										
103	FEDDANS ABSORBED	24	28	31	31	31	31	35	43	43	43
104	LEASE INCOME	411	627	868	1,169	1,350	1,551	1,857	2,191	2,510	2,839
105	FEES AND CHARGES	291	379	474	576	679	791	884	1,003	1,149	1,295
106	RESIDUAL VALUE										
	TOTAL REVENUE	701	1,006	1,342	1,685	2,029	2,373	2,736	3,184	3,659	4,134
	EXPENDITURES										
	DEVELOPMENT										
112	SITE DEVELOPMENT	46	23	23			67	121	121		
113	ELECTRIC UTIL	1,000	525	525			2,000	2,795	2,795		
114	WATER SYSTEM										
115	SEWAGE SYSTEM	667	350	350			1,333	1,863	1,863		
116	SOLID WASTE DIS										
117	FENCES	34	213	213			67	270	270		
118	IRRIGATION SYS.										
119	STREETS	133	70	70			267	373	373		
120	RAILROAD										
121	WATERWHARF										
122	VEHICLES										
123	MAINTNC FACILITY										
124	SUPPORT BUILDINGS										
125	ENGINEERING-PRELIMIN										
126	ENGINEERING-FINAL										
127	WAR HOUSE CONSTRUCTI										
128	CONTINGENCY - OTHER	563	354	354			1,126	1,627	1,627		
	TOTAL INVESTMENT	2,441	1,535	1,535			4,890	7,049	7,049		
	OPERATING										
131	LABOR	43	43	66	66	66	66	66	91	91	91
132	PROMOTION	15	15	15	15	15	15	15	15	15	15
133	GENERAL AND ADMIN	17	25	34	42	51	59	68	80	91	103
134	SECURITY	17	17	29	29	29	29	29	37	37	37
135	INTEREST										
136	MAINTENANCE	69	69	77	77	77	131	137	172	172	172
	TOTAL OPERATING	156	172	221	229	238	271	315	395	407	419
	NET CASH FLOW	-1,895	-701	-414	1,456	1,791	-2,777	-4,628	-4,259	3,252	3,715

FIGURE VI-2 (Continued)

GENERAL AUTHORITY FOR INVESTMENT AND FREE ZONES — MINISTRY OF ECONOMY
REYNOLDS SMITH AND HILLS ECONOMIC MODEL

FINANCIAL ANALYSIS IN LOCAL CURRENCY (000)
ISMAILIA FREE ZONE AND INDUSTRIAL AREA

	DESCRIPTION	1999	2000
	CASH FLOW		
	REVENUE		
103	FEDDANS ABSORBED	43	13
104	LEASE INCOME	3,167	3,277
105	FEES AND CHARGES	1,441	1,547
106	RESIDUAL VALUE		24,434
	TOTAL REVENUE	4,608	29,257
	EXPENDITURES		
	DEVELOPMENT		
112	SITE DEVELOPMENT		
113	ELECTRIC UTIL		
114	WATER SYSTEM		
115	SEWAGE SYSTEM		
116	SOLID WASTE DIS		
117	FENCES		
118	IRRIGATION SYS.		
119	STREETS		
120	RAILROAD		
121	WATER/SEWAGE		
122	VEHICLES		
123	WELDING FACILITY		
124	SUPPORT BUILDINGS		
125	ENGINEERING-PRELIMIN		
126	ENGINEERING-FINAL		
127	WAREHOUSE CONSTRUCTI		
128	CONTINGENCY - OTHER		
	TOTAL INVESTMENT		
	OPERATING		
131	LABOR	91	91
132	PROMOTION	15	15
133	GENERAL AND ADMIN	115	121
134	SECURITY	37	37
135	INTEREST		
136	MAINTENANCE	172	172
	TOTAL OPERATING	430	436
	NET CASH FLOW	4,178	28,822

Line Item 105--Fees and Charges

The Ismailia Free Zone fees are computed at 3.5 LE per square meter for each net feddan per year. The fees in the industrial area are based upon LE 1 per square meter of the net feddans absorbed.

Line Item 106--Residual Value

This value is the undepreciated residual value of the facility based upon a 30-year life and sold in the year 2000.

Line Item--Total Revenue

This line item is the sum of line items 104, 105, and 106.

Line Item 112--Site Development

This line item is calculated using LE 1,300 per gross feddan of developed area.

Line Item 113--Electric Utilities

This line item is computed based upon a cost of LE 30,000 per gross feddan.

Line Item 115--Sewage System

This line item includes the estimated cost for water, sewage, and storm drains for the area. It is computed based upon a cost of LE 20,000 per gross feddan.

Line Item 117--Fences

This line item is the estimated cost for fencing the individual phases.

Line Item 119--Streets

This line item includes both the roads and the associated drainage with the roads and is computed based upon a cost of LE 4,000 per gross feddan.

Line Item 124--Support Buildings

This line item is the construction of the operations facility for the free zone area. It is based upon an estimated cost for the building of $650,000 spread over the period between 1980 and 1981.

Line Item 128--Contingency-Other

This line item is a contingency for development and is based upon 30 percent of the development cost as shown above.

Line Item--Total Investment

This line item is the sum of line items 112 through 128.

Line Item 131--Labor

This line item includes the labor charges for the operation of the free zone. This item includes labor cost for management, clerical, technical, and miscellaneous cost incurred during the operation of the area.

Line Item 132--Promotion

This line item is an estimation of the promotion cost for the project. The estimated expense commences in 1982 and runs until project completion.

Line Item 133--General and Administrative

This line item is included for both the free zone and the industrial area to cover the administrative cost for operation. It is estimated at 2-1/2 percent of total revenue.

Line Item 134--Security

This line item for both the free zone and industrial area is the estimated labor cost for security personnel.

Line Item 136--Maintenance

This line item for both the feee zone and the industrial area is is based upon one-half of one percent of the total development cost.

Line Item--Total Operating

This line item is the sum of line items 131 through 136.

Line Item--Net Cash Flow

This line item is the sum of total revenue less total investment and total operating cost.

COST/BENEFIT ANALYSIS

Employment

It is assumed that all the projects will have the same rate of employment and business volume per feddan as do the existing free zone investors. This assumption is based upon historical trends, and if any significant growth in the industrial sectors takes place in the near future, then the projected benefits listed on the following tables should be considered somewhat conservative.

Table VI-2 shows the investor projected employment in the free zone and the industrial area based upon this 49 employees per net feddan of absorbed industrial area. These totals are accumulated as net industries move into the area and provide demand for new employees. The allocation for employees from both local and foreign is based upon a 90/10 ratio. The accumulation of these employees as new industries move into the industrial area indicated a sizable demand for new employees over the period between 1982 and 1999. Table VI-2 also shows the demand for construction workers both in the free zone and in the investor sector. Construction worker demand is based upon one employee for every LE 30,000 of development expenditures. The investor demand for construction workers is based upon historical trends and is estimated to be approximately 11.2 construction workers per net feeddan of develped area. The total employment benefit for the Ismailia area shows a demand of nearly 82,000 man-years for the industrial area over a 21-year period.

Wages, Fringe Benefits

The projected investor wage and fringe benefits for the industrial areas are based upon actual wages paid in the free zones to both Egyptians and non-Egyptians in 1978. In all cases the average annual wage was used for the wage estimate. This data is reasonably accurate because the jobs represent the approximate skills that would be required in the free zone area and the skills/unskilled ratio should be similar to those used in other free trade zones area in Egypt (Table VI-3).

It is assumed that all wages paid to Egyptian workers will accrue to Egypt's economy, while 50 percent of those paid to non-Egyptians will accrue to Egypt. Halr of the foreign employees income may legally leave Egypt, and it is assumed that it will.

The Government of Egypt will also receive benefits in th form of money paid by investors (through fringes on wages) for health and community services for employees. The actual figure of fringes paid on salaries by investors is close to 24 percent of wages. For the benefit analysis, we lowered that figure to 20 percent, since no all of the fringes will accrue to Egypt.

Investor Contribution

The investors are anticipated to stimulate the Egyptian economy through means other than wages. The most direct examples are local purchases for production, operating and maintenance cost, and the return of profits of Egyptian capital.

Based upon an examination of the other Egyptian free zones, it is estimated that annual sales volumes approximate LE 359 per square meter or approximately LE 1.5 million per feddan. Based upon the accumulative absorption of feddans in Ismailia, the total sales are indicated on Table VI-4.

TABLE VI-2

ISMAILIA FREE ZONE

PLUS INDUSTRIAL EMPLOYMENT TOTALS

1980 - 2000

Year	Investor Employment			Construction Employment			Total Public Sector	Total Employment
	Egypt	Non-Egypt	Total	Free Zone Sector	Investor	Total		
1980	-	-	-	40	-	40	5	45
1981	-	-	-	40	-	40	5	45
1982	118	13	131	-	30	30	18	179
1983	236	26	262	-	30	30	18	310
1984	354	39	393	-	30	30	18	441
1985	486	54	540	42	34	76	18	634
1986	618	69	687	42	34	76	34	797
1987	751	83	834	81	34	115	34	983
1988	883	98	981	81	34	115	34	1,130
1989	1,412	157	1,569	81	134	215	34	1,818
1990	2,029	226	2,255	51	160	211	34	2,500

TABLE VI-2 (Continued)

ISMAILIA FREE ZONE

PLUS INDUSTRIAL EMPLOYMENT TOTALS

1980 - 2000

Year	Investor Employment			Construction Employment			Total Public Sector	Total Employment
	Egypt	Non-Egypt	Total	Free Zone Sector	Investor	Total		
1991	2,713	301	3,014	51	175	226	52	3,292
1992	3,396	377	3,773	-	175	175	52	4,000
1993	4,079	453	4,532	-	175	175	52	4,759
1994	4,762	529	5,291	163	175	338	52	5,681
1995	5,533	615	6,148	234	195	429	52	6,629
1996	6,481	720	7,201	234	240	474	70	7,745
1997	7,429	825	8,254	-	240	240	70	8,564
1998	8,376	931	9,307	-	240	240	70	9,617
1999	9,324	1,036	10,360	-	240	240	70	12,670
2000	9,611	1,067	10,678*	-	70	70	70	10,818

* 46% of Suez Canal Regional Industrial Plan total.

Source: Reynolds, Smith and Hills, 1979.

TABLE VI-3

PROJECTED FREE ZONE ANALYSIS WITH INDUSTRIAL

WAGES, FRINGE BENEFITS ACCRUING TO EGYPT

(LE MILLIONS)

1980 - 2000

Year	Investors			Public Sector	Wages
	Egypt	Non-Egypt	Total	Total	Total
1980	-	-	-	.01	.01
1981	-	-	-	.01	.01
1982	.24	.09	.33	.02	.35
1983	.47	.17	.64	.02	.66
1984	.72	.26	.98	.02	1.00
1985	.99	.36	1.35	.04	1.39
1986	1.25	.46	1.71	.04	1.75
1987	1.52	.56	2.08	.04	2.12
1988	1.79	.65	2.44	.04	2.48
1989	2.86	1.04	3.90	.04	3.94
1990	4.11	1.50	5.61	.04	5.65
1991	5.49	2.00	7.49	.07	7.56
1992	6.88	2.50	9.38	.07	9.45
1993	8.26	3.01	11.27	.07	11.34
1994	9.65	3.51	13.16	.07	13.23
1995	11.21	4.08	15.29	.07	15.36
1996	13.13	4.77	17.90	.09	17.99
1997	15.05	5.47	20.52	.09	20.61
1998	16.97	6.16	23.13	.09	23.22
1999	18.89	6.85	25.74	.09	25.83
2000	19.47	7.06	26.53	.09	26.62

Source: Reynolds, Smith and Hills, 1979.

TABLE VI-4

FREE ZONE ANALYSIS PLUS INDUSTRIAL

SUMMARY OF SALES VALUE, LOCAL PURCHASES,

LOCAL EXPENSES, AND LOCAL PROFITS

(LE MILLIONS)

1982 - 2000

	Ismailia Free Zone and Industrial				
Year	Total Sales	Local Purchases	Local Expenses	Local Profits	Total Contribution
1982	4.0	.4	.1	-	0.5
1983	8.0	.8	.2	-	1.0
1984	12.0	1.2	.2	.1	1.5
1985	16.6	1.7	.3	.2	2.2
1986	21.1	2.1	.4	.2	2.7
1987	25.7	2.6	.5	.2	3.3
1988	30.1	3.0	.6	.3	3.9
1989	48.2	4.8	1.0	.4	6.2
1990	69.4	6.9	1.4	.6	8.9
1991	92.7	9.3	1.8	.8	11.9
1992	116.1	11.6	2.3	1.0	14.9
1993	139.5	13.9	2.8	1.2	17.9
1994	162.8	16.2	3.2	1.5	20.9
1995	189.2	18.9	3.8	1.7	24.4
1996	221.6	22.1	4.4	2.0	28.5
1997	254.1	25.4	5.1	2.3	32.8
1998	286.5	28.7	5.7	2.6	37.0
1999	318.9	31.9	6.4	2.9	41.2
2000	327.1	32.7	6.5	2.9	42.1

Source: Reynolds, Smith and Hills, 1979.

Of the total purchases made by firms, only a proportion will actually affect the local economy. It is estimated that approximately 10 percent of the total sales volume in Ismailia will be oriented to the local economy for purchases. Similarly, local expenditures for such items as private security, building maintenance, and utility bills will account for an approximate 2 percent benefit to the local economy.

Another benefit accruing from sales will be investment profits. Currently approved projects in the public free zone show foreign capital investment to be over 90 percent of the total capital investment for those projects, with local investments exceeding 7 percent. We are assuming that profits will be distributed in the same proportion as initial capital investment, and that the proportion of local to foreign will remain fairly stable over time. For planning purposes, it is estimated that 0.9 percent of total sales will be allocated to local profits in Ismailia.

Investment

Benefits will also be derived from expenditures by these investors during the construction phase of their operation. These expenditures will include wages and fringes paid to construction workers, as well as local materials purchased for construction. A figure of LE 115 per square meter of developed land is assumed for this purpose with approximately 30 percent benefit to accrue to Egypt. The results of this investment are shown on Table VI-5. Similarly, benefits to the Egyptian economy will accrue directly from expenditures for the establishment of infrastructure, both in the form of construction workers wages and in terms of local materials used in construction. It is assumed that 70 percent of the infrastructure cost will be spent for Egyptian goods and labor while the remaining 30 percent will be primarily used to purchase foreign materials.

Free Zone Cost and Benefits

The computation of benefits and costs, similar to the Chapter V methodology, indicate a 1.9:1.0 benefit to cost ratio for this program. This result is better than the isolated free zone result, and would appear to be more appropriate for the Ismailia area.

TABLE VI-5

FREE ZONE ANALYSIS PLUS INDUSTRIAL

SUMMARY OF CONSTRUCTION EXPENDITURES

LOCAL, FOREIGN CURRENCY (LE MILLIONS)

Year	Public Sector		Investor	
	Local	Foreign	Total	Egypt
1980	1.2	.4	-	-
1981	1.2	.4	-	-
1982	-	-	1.3	.4
1983	-	-	1.3	.4
1984	-	-	1.3	.4
1985	1.3	.4	1.4	.4
1986	1.3	.4	1.4	.4
1987	2.4	.7	1.4	.4
1988	2.4	.7	1.4	.4
1989	2.4	.7	5.8	1.7
1990	1.5	.5	6.8	2.0
1991	1.5	.5	7.5	2.2
1992	-	-	7.5	2.2
1993	-	-	7.5	2.2
1994	4.9	1.5	7.5	2.2
1995	7.0	2.1	8.5	2.5
1996	7.0	2.1	10.4	3.1
1997	-	-	10.4	3.1
1998	-	-	10.4	3.1
1999	-	-	10.4	3.1
2000	-	-	3.4	.9

Source: Reynolds, Smith and Hills, 1979.

TABLE VI-6

FREE ZONE ANALYSIS

FREE ZONE PLUS INDUSTRIAL BENEFITS

Year	Investors Wages & Fringes	Rental and Fees	Free Zone Sector		Investor		Total Benefits
			Operations	Construction	Operations	Construction	
1980	-	-	.02	1.2	-	-	1.22
1981	-	-	.02	1.2	-	-	1.22
1982	.33	.03	.08	-	.5	.4	1.34
1983	.64	.06	.08	-	1.0	.4	2.18
1984	.98	.13	.08	-	1.5	.4	3.09
1985	1.35	.20	.09	1.3	2.2	.4	6.35
1986	1.71	.28	.11	1.3	2.7	.4	6.50
1987	2.08	.36	.12	2.4	3.3	.4	8.66
1988	2.44	.43	.14	2.4	3.9	.4	9.71
1989	3.90	.70	.16	2.4	6.2	1.7	15.06
1990	5.61	1.00	.17	1.5	8.9	2.0	19.18
1991	7.49	1.34	.22	1.5	11.9	2.2	24.65
1992	9.38	1.69	.23	-	14.9	2.2	28.40
1993	11.27	2.03	.24	-	17.9	2.2	33.64
1994	13.16	2.37	.27	4.9	20.9	2.2	43.80
1995	15.29	2.73	.32	7.0	24.4	2.5	52.24
1996	17.90	3.18	.40	7.0	28.5	3.1	60.08
1997	20.52	3.66	.41	-	32.8	3.1	60.49
1998	23.13	4.13	.42	-	37.0	3.1	67.78
1999	25.74	4.61	.43	-	41.2	3.1	75.08
2000	26.53	4.82	.44	-	42.1	0.9	74.79
Total	189.45	33.75	4.45	34.1	301.8	31.1	595.46

Source: Reynolds, Smith and Hills, 1979.

TABLE VI-7

FREE ZONE ANALYSIS

FREE ZONE PLUS INDUSTRIAL - COSTS

Year	Free Zone Sector Operations & Subsidies	Investors Construction Subsidies	Investors Utilities & Subsidies	Employee Services (Fringes)	Subsidies on Employee Expenditures	Sub-Total Costs	Investors Purchase	Total Costs
1980	2.04	-	-	-	-	2.04	-	2.04
1981	2.04	-	-	-	-	2.04	-	2.04
1982	0.10	.13	.10	.08	.07	0.48	.20	0.68
1983	0.10	.13	.20	.15	.14	0.72	.40	1.12
1984	0.10	.13	.20	.23	.22	0.88	.60	1.48
1985	2.23	.13	.30	.32	.30	3.28	.85	4.13
1986	2.23	.13	.40	.40	.38	3.54	1.05	4.59
1987	3.99	.13	.50	.49	.47	5.58	1.30	6.88
1988	4.02	.13	.60	.57	.54	5.86	1.50	7.36
1989	4.04	.54	.90	.91	.82	7.21	2.40	9.61
1990	2.71	.64	1.35	1.32	1.18	7.20	3.45	10.65
1991	2.78	.70	1.89	1.76	1.58	8.71	4.65	13.36
1992	.29	.70	2.20	2.20	1.98	7.37	5.80	13.17
1993	.30	.70	2.70	2.65	2.39	8.74	6.95	15.69
1994	8.50	.70	3.15	3.09	2.78	18.22	8.10	26.32
1995	12.10	.80	3.65	3.59	3.23	23.37	9.45	32.82
1996	12.20	.99	4.25	4.21	3.78	25.43	11.05	26.48
1997	0.51	.99	4.90	4.82	4.33	15.55	12.70	28.25
1998	0.53	.99	5.55	5.44	4.90	17.41	14.35	31.76
1999	0.54	.99	6.15	6.05	5.44	19.17	15.95	35.12
2000	0.55	.28	6.30	6.23	5.60	18.96	16.35	35.31
Total	61.90	9.93	45.29	44.51	40.13	201.76	117.10	308.86

Source: Reynolds, Smith and Hills, 1979.

CHAPTER VII
ORGANIZATION - WITH CURRENT INDUSTRIAL ACTIVITY

The same organizational structure which has been developed by the General Authority for Investment and Free Zones for Public Free Zone Administration is applicable to non-free zone industrial development. It is a recommendation of this report that the same organization be involved with all industrial development activity for this sector of Ismailia's growth.

To initially phase the organization, not all the department levels need be immediately staffed. The key personnel are:

- o Director General
- o Accounting Specialist
- o Maintenance Specialist
- o Public Relations Specialist
- o Administrative Officer
- o Customs Liaison

The members of this team should be so selected that the personnel matters could be dealt with by the group and that the specialization of each individual could coordinate with the specializations of the others. On a temporary basis, outside services from consultants could ensure the effective handling of policy or procedural problems.

The total staff for the first phase of the development program for Ismailia's industrial estates and/or free zone is estimated to require approximately 10 persons. The support staff will include clerks, maintenance personnel, security watchmen, and typists.

The effective combination of this organization with the inland investment activities will ensure that duplicative activities are minimized, and that a unified, concise approach toward investor attraction is obtained. The credibility of the community will be improved by this professional approach, while at the same time Ismailia will not incur abnormally high expenses for these important activities.

ORGANIZATION PUBLIC FREE ZONES - EXISTING

Each Egyptian public free zone has its own semi-autonomous organizational structure. The different public free zones each have their own Board of Directors which makes the policy decisions for the zone. It is headed by the Governor of the area in which the free zone lies, and is staffed by both public officials and private individuals. The Director General of the zone sits on the Board, as does the local Chief of Security and Chief of Customs. Several local politicians may be on the Board, in addition to a business representative (Chamber of Commerce). Recently, persons representing the investors have been added to Boards. They are generally selected by the Governor and/or the Director General. It is too soon to evaluate whether these individuals will be able to effectively represent the investors in the Board meetings.

While the pattern of organization authorized for each public free zone has generally not been implemented, this generic organization is described as follows.

1) Director's Office. The general operation and management of each free zone is the responsibility of the Director General. The Director General's responsibilities are quite broad and it is our observation that time is about equally divided between internal management activities and investor activities. The Directors General of new free zones could benefit from permanently assigned engineering staff or construction management consultants not only from a time-effectiveness point of view, but from their readily available technical expertise. Engineering personnel are available on assignment from the Cairo office of the Free Zone Sector.

   The Director General of each zone must have a personal staff which provides general office services, such as mail pickup and distribution, filing and typing, and similiar administrative support functions.

2) Secretariat. The functions of the secretariat are primarily those of an executive assistant, or executive secretary, with duties involving preparation of Boards of Directors' agendas, minutes of Board meetings, and administrative assistance to the directors.

3) Financial Follow-up. This department is charged with monitoring and auditing the inventory and financial systems of investors for the purpose of ensuring that the administration collect full revenues due under agreements and law. It also audits physical inventories and other assets, as required to ensure that full revenue is determined. This is also the department responsible for ensuring that investors maintain adequate fiscal responsibility.

4) Public Relations. The functions of the Public Relations Department appear to be handled on an "as needed" basis by the Director. The planned functions generally include services on behalf of investors which facilitate their establishment. Typically, the department assists potential investors to obtain information regarding application procedures and fee structures, conducts promotionally oriented tours for prospects and visitors, assists investors in hiring and training labor, and handles press relations. While not officially designated as a marketing arm, the Public Relations Department would also be considered the nearest thing to a "sales" department. The more informed a prospect is and the less concern he has over problems of manpower recruitment, relations with government agencies, establishment of contacts, etc., the greater is the chance that he will become an investor.

5) Legal Affairs. The legal department performs the typical functions implied by its title. In addition to providing guidance to avoid legal conflicts, the attorney is specifically charged with conducting investigations resulting from complaints by authorities, drafting legal documents such as agreements and contracts, and making internal policy or resolutions for Board actions. This does not necessarily require full-time services.

6) Research Department. Its basic mission should determine the suitability of applicants through analysis of various types of economic data and to present their findings to the local Boards of Directors. This work can be performed through outside consultants on an as needed basis.

7) Executive. Existing at all free zones except Suez, this department's responsibilities involve the issuance of licenses for free zone operations per se, as well as licenses for import and export of goods consigned to the zones. It is also the organizational unit responsible for the physical inspection and registration of goods imported and exported. Unlike other public free zone departments, the Executive Department also provides these services for those private free zones under the supervision of public zones.

8) Statistics and Information. This department does not now exist as an identifiable entity in any of the zones; however, most of those responsibilities required at this stage of development are being performed by existing staff as assigned by the Directors General. Primary responsibility includes the collection of data pertaining to the economics generated by projects of each zone. These data include classification of goods and services handled by the investors in each zone, analysis of type, value, and quantity of goods imported from foreign countries, as well as analysis of general economic trends in Egypt and other Arab nations. While production to date has been modest, these departments are also responsible for the publication and dissemination of information pamphlets and brochures which will promote the various zones.

9) Financial and Administrative Affairs. This department is responsible for preparation of operating and capital budgets, general accounting for the free zone administration and collection of revenues. Serving as the Treasurer of each zone, its head is also responsible for accounts payable.

The administration section of the department functions as a general administration and clerical operations center and personnel department. It is here that employment, training, employee benefits, and other employee relations are handled.

10) Engineering. Although engineering services are provided by Cairo on an "as needed" basis, there is ample justification for the local appointment of at least one construction oriented engineer. The application of modern construction management practices at each site--plus the evaluation of professional expertise at each site to solve the inevitable design problems or changes, would not greatly enhance the quality of construction, but would result in much closer adherence to schedules.

PUBLIC FREE ZONES - PROPOSED

While the free zone organization currently exists as described, we believe Ismailia should modify the current structure as follows. The recommended reorganization is reflected in Figure VII-1. Its design is oriented toward the consolidation and coordination of similar functions and a reduction in the direct supervision of the Director General. The number of second tier management positions is reduced from eight to four which would substantially reduce duplicative effort and improve communications, resource management, and supervision.

The major recommended changes in departmental organization include the following:

- The Director's Office: All functions dealing with general office services are transferred to the Administrative Department.

- Secretariat: Since this is usually a single position and not department level in scope, the Secretariat is redefined as a staff position within the Director's Office rather than a separate departmental entity.

- Financial Follow-up: Recognizing the differences in the mission between the Financial Follow-up Department and the Finance and Administration Department, it is still felt that a combination of the two would result in closer coordination and continuity of overall fiscal policy. The recommended change integrates all fiscal operations--both internal and external--into a common department under a single administrator. This would also enable the Director General to obtain all financial information and to implement all fiscal policies through a single manager.

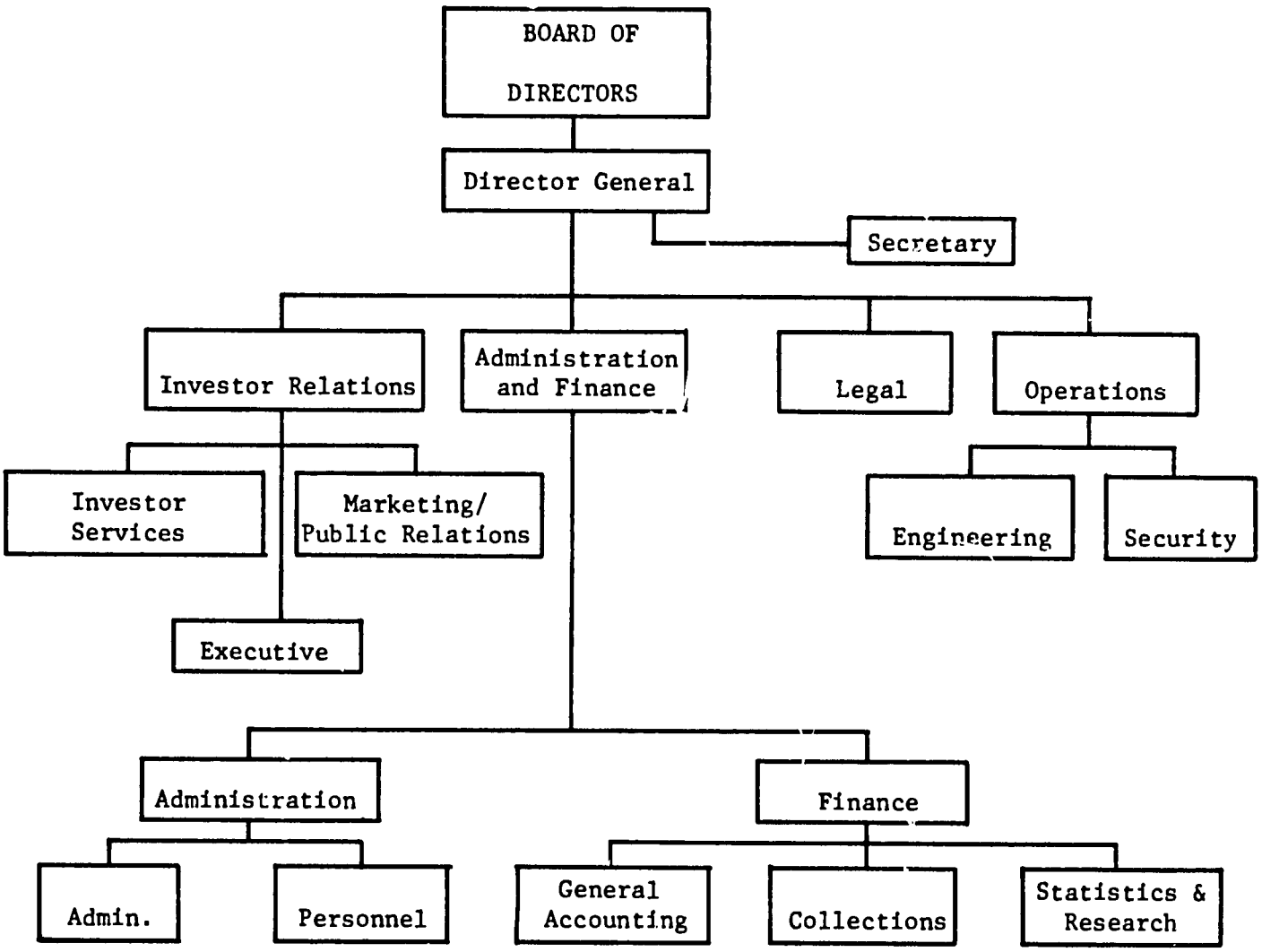
- Public Relations: As part of the larger role of investor relations, this department should be integrated with those departments which deal directly with the investor. The operation at Port Said could be used as a model.

- Research Department: It is recommended that this and all financially oriented departments be combined as indicated under Financial Follow-up. In addition to increased continuity and coordination, the proposed combination would allow much greater

FIGURE VII -1

FREE ZONE ANALYSIS

RECOMMENDED ORGANIZATION STRUCTURE OF FREE ZONES



flexibility for shifts of manpower within the group to cover emergency overloads in individual departments.

- o Executive Department: The role of the Executive Department in direct investor relations through the issuance of licenses and registration of goods transported through the free zone should be combined with other direct investor related departments including investor services and public relations/marketing.

- o Statistics and Information: Although this department does not actually exist in any free zone, its function would be better utilized through a combination with the Research Department.

- o Financial and Administrative Affairs: Because this section is so deeply involved in both human and physical resource management and because its operations are so far removed from those of accounting, it is recommended that this department maintain its direct line of communications to the Director General through General Department status.

The rationale for all the organizational changes suggested are: 1) consolidation of similar and related functions involving human resources from the same professional disciplines; 2) reducing the number of managers reporting directly to the Director General; 3) creating greater manpower flexibility of manpower; and 4) reducing the possibility of overlapping and duplication of effort. There also appears need for "hands-on" operational training for employees. The specific area for training initially should emphasize security, facility-investor operational coordination, and customs-administration liaison.

The utilization of this organization structure at Ismailia for administering industrial activity is recommended for serious consideration.

CHAPTER VIII
PROMOTION OF THE ISMAILIA PROGRAM

A successful promotional program necessitates careful integration of public relations activity, adequate budgeting, brochure design, and media selection. It is recommended that Ismailia plan sufficient flexibility to provide suitable marketing materials and to establish a permanent, promotion staff. This staff would provide two essential marketing components: an aggressive promotion campaign, and an effective reception program for investors visiting Egypt.

The establishment and implementation of an effective program will take time and, therefore, it is recommended that Ismailia consider the possibility of utilizing short-term consulting services to help develop and implement the program. These services would include the training of personnel; determining the cost-effectiveness of individual program items; designing and structuring brochures; analyzing and screening potential industrial or free zone companies; and providing overall guidance. Without a promotional compaign, the rate of job creation and infrastructure development is anticipated to remain sporadic.

DEVELOPMENT OF THE PROMOTIONAL PLAN

Marketing of a free zone or industrial estate should begin at the time of the establishment of these areas. To be successful, the initial stages should be conducted swiftly, utilizing the input from development and planning studies conducted and other economic development studies for the general area. The development of a list of industry types which would meet the needs of the local area and which are especially suited to local resources, combined with the development of a promotional plan designed particularly for these types of industries, should be conducted simultaneously. The general advantages of the location for export markets must also be marketed.

From this point of coordination, a few "seed" tenants with obvious potential in the local area or who have shown particular interest in the local area should be contacted personally, outside the normal advertising channels, to set the mood of development. If large scale enterprises are deemed appropriate, these initial contacts should meet this criterion, similarly, small scale industries should be encouraged where numerous small operations or rapid development may be preferred. In either case, the "seed" tenants should be selected carefully and with the character of overall free zone development as a key criterion.

The following program is considered typical to a successful free zone or industrial approach. In essence, all location decisions deal with markets or materials. Egypt's domestic industry support and proximity to markets are important factors for industrial location decisions. The targeting process and resulting promotional efforts are outlined below:

Phase I: Target the industries for further investigation.

Phase II: Develop Promotional Plan. The next major step is to set up a comprehensive promotional plan. Individual companies with potential for expanding operations should be targeted as part of this plan. A well written form letter should be drawn up for targeted companies, along with promotional material.

Phase III: Develop prospective list of industries most likely to invest in facilities.

Phase IV: Develop realistic projection of potential investment on an annual basis for five years.

Phase V: Review location of firms with potential for investment and determine potential for benefit.

Phase VI: Develop promotional and sales brochure material for use in promoting potential investors derived from the above research and by other means. All procedures for investment should be clearly defined so that investors can make decisions based on full knowledge of the potential for profit and risk involved. Questions related to costs, utilities, transportation, personnel policies, treatment of company executives, educational opportunities for their children, potential joint venture partners, insurance, wage and salary information by manufacturing employee type, and other items related to investment decisions should be developed and readily accessible. A positive process must be developed to expedite commitments to specific investors based on what the area can provide and commitments from the investor.

Phase VII: Establish the marketing program.

A. Establish training program and organization for in-house promotions staff.

B. Provide promotion materials and back-up information.

C. Initiate and advertising campaign. Depending upon budget, carefully select publications which could include national, Middle-Eastern and international newspapers, business magazines and trade journals.

IDENTIFYING TARGET INDUSTRIES

Article 3, Law 43 of 1974 and its amendments provide general policy guidance for the structure of foreign capital investment in the Arab Republic of Egypt. Accordingly, the purpose of investment incentives is to further the goals of the open door economic policy by attracting industry suitable to the needs of the Arab Republic of Egypt--"projects

in need of international expertise in the spheres of modern development or in projects requiring foreign capital." It provides for special priorities in the spheres of:

- o Export generation;
- o Tourism development;
- o Reduction of the need to import basic commodities;
- o Advanced technology expertise; and
- o The use of patents and trademarks of worldwide reputation.

All of these, with the exception of tourism, are well suited to the responsibilities of assigning special priorities and in targeting projects for the free zones or industrial areas.

The Law also specifies in broad terms those economic sectors for which investment is allowed. As applied to the free zones, these sectors include:

- o Storage of transit goods or indigenous goods on which taxes have been paid;

- o Sorting, cleaning, mixing and blending goods, packing and repacking, and similar operations;

- o Services for the projects or employees of the free zone; and

- o Manufacturing, assembling, mounting, processing, renewing, or other activities.

It further authorizes the development of a target industry list by the Board of the Authority to be approved by the Council of Ministers. These lists are directed to the manufacturing sector, and the range of products is so extensive as to be of little use in project evaluation, especially at the current stage of free zone development, or in devising promotional activities. Few project applications are rejected by the various free zones, although it is reported that negotiations between the free zones and potential investors commonly alter the details of a project to meet the needs of the local area. It appears this occurs most frequently in areas such as technology transfer and employment.

The short-term benefits from the current approval process are obvious. Even in its current stage of infancy, free zones have been able to generate substantial capital investment primarily in new construction to the extent that the current revenues exceed operating expenses. This rapid development, while mainly in warehousing, guarantees the continued feasibility of the free zone concept in Egypt both fiscally and as a source of security for potential investors. However, the long-term potential of these existing industries fails to support the goals of the open door economic policy or to support the special priorities of investment identified above.

Development of the Target List

The establishment of priorities in the targeting of industries, particularly manufacturing and processing industries, is a logical next step in the development process and should be vigorously applied at the local levels.

Ismailia can improve this situation by providing general opportunity studies and specific project opportunity studies shortly after the selection of the Director General and his principal staff. The engineering and design efforts should reflect the capacity of services and appropriate design to facilitate the industries specified in the opportunity studies, and the promotional program can be developed with these industries in mind.

The general opportunity studies would identify investment opportunities particularly suited to the local economy and which would warrant investigation through a specific project opportunity study. At a minimum, the study would review:

- The availability of local resources, including agricultural products which provide potential for processing, and manufacturing or assembly operations which would be appropriate to an export oriented industry;
- The local demand for consumer goods with growth potential as a result of population increase or of increased purchasing power with primary emphasis on goods which are presently imported;
- Identification of existing successful manufacturing activities which might provide interlinkages through common labor pools, labor training, repair services integration, and other economies of agglomeration;
- Possibilities for diversification from established industries;
- The local investment climate;
- Policies concerning industrialization and growth in the governorate;
- Costs and availability of production factors, particularly labor availability; and
- The existing export markets, level, and types of exports.

The basic parameters have already been established in this analysis.

Promotional Literature

Prior to the development of specific site brochures within the individual free zones or industrial estates, Ismailia should develop a

set of general interest materials to acquaint the market with it's investment climate. Some steps have been taken in this area and could easily form the basis for a more comprehensive program to develop general awareness within industrial circles. Some of the most basic items in this regard are the general interest brochures which could be made available on request or by direct mail, letters of introduction directed to corporations or potential participants in other countries, and general advertising in publications of interest to business executives.

A general brochure is needed. This item is basic to promotional activity, as it is the single best source of information to interest an investor. No number of legal guides and statistics will help if there is no effective way to arouse the investor's interest.

It should be understood that almost any brochure will be somewhat out-of-date even before it gets printed. Laws, rent, land availability, infrastructure, etc., will all change over short periods of time, and it would not be cost-effective to make a new brochure every year. Specific information regarding rent, land, and infrastructure availability, and similar items, should be omitted from the marketing brochure. These should be replaced with general information which will not change markedly over a five-year period. For instance, it can be said that rents vary from $1 to $5 per square meter, depending on the type of project and the particular location. Or, all mention of prices could be omitted entirely. In this way, the brochure will last much longer, will be more cost-effective, and will contain very little out-dated information.

A brochure should be limited to between four and eight pages (including photographs), in order to keep the reader's interest, and also to keep the price down. What is definitely not needed is a brochure which is so expensive that the publisher only wishes to give out a limited number of copies. The object of the brochure is to get investors interested, and should indicate quite clearly how additional information can be obtained on the laws, rental rates, applications, and similar items.

Industrial brochures typically satisfy many needs by using an open jacket approach. The jacket approach allows multiple use of the cover with appropriate materials inserted, depending upon the recipient. For example, a lead article, steps for licensing, and area advantages could form three "pull" documents to set out general materials. For a specific industrial free zone, a rendering of the site, parcels for lease, configurations, road and utility networks, spaces already leased, location maps and a summary of the technical brochure's data can all be inserted. The brochure should have professional and factual integrity.

A mail-back sheet should also be included in this type of brochure. It accomplishes a number of tasks such as determining if the respondent has service interest, giving more knowledge of the respondent's characteristics, and allowing further communication. The mail-back sheet would indicate information such as presented in Figure VIII-1.

FIGURE VIII-1

MAIL-BACK SHEET

Facility (Circle One)	1. Plant facility 2. Distribution facility 3. Relocation of existing facility
Area Requirements	1. Raw parcel _____ (unit of size) 2. Serviced parcel _____ (unit of size)
Building (Circle One)	1. Will build 2. Will lease
Building Needs	1. Floor area _____ (unit of size) 2. Dimension _____ by _____ (unit of size) 3. Largest _____ (unit of size) 4. Docks _____ by _____ (unit of size) 5. Type of construction _____ 6. Outsize stage needs _____ (unit of size)
Transportation Needs	1. Trucking service _____ (annual tonnage) 2. Road service _____ (annual tonnage) 3. Air _____ (annual tonnage) 4. Port Service (a) _____ (annual tonnage) (b) Equipment: _____
Waste	Type and quantity: _____
Labor Needs	1. Skilled _____ (male) _____ (female) 2. Semi-skilled _____ (male) _____ (female) 3. Unskilled _____ (male) _____ (female) 4. Skilled needs:

Material and Support Service Needs:

Other Requirements:

Source: Reynolds, Smith and Hills, 1979.

Several back-up documents need to be included with the responses to the serious investor. Fortunately, technical publications already exist in a largely acceptable form. Law 43 of 1974 and Decree 375 of 1977 are widely available to investors. The "Legal Guide to Investment in Egypt" is a good summary and explanation of the above documents, and should be extensively available to potential investors. These documents could be kept up-to-date with a correction sheet which summarizes new executive regulations and policies. In this way, the legal guide would not have to be revised often. This would be cost-effective, and should be done as soon as possible.

It cannot be emphasized enough that the promotional aspects should be vigorously pursued. It is recognized that in an economy where resources are directed toward production, the expenditure for promotion may seem frivolous. In this case, the promotional campaign reflects on investment which creates economic activity.

Beyond advertising, Ismailia could take advantage of the opportunities provided by trade shows, fairs, and exhibitions. Contacts among trade associations and with corporations which promote trade shows and exhibitions would also enhance the visibility of Ismailia's advantages.

Individual Projects

Once the mechanism for marketing is established, the requirements of individual project promotion are minimized. As discussed earlier, the targeting of industries suited for a particular area should be accomplished at the earliest possible time, coinciding with project planning and engineering programming. With these industries specified, a promotional plan can be developed which might utilize the mechanisms already established by the General Authority including consultants, foreign offices of the Egyptian Government, business contacts who have already responded to the general marketing effort, trade show promoters, the international media, and trade associations.

The most important elements of the individual project marketing efforts are the identification of specific target industries for the area and a marketing package to be used by the marketing experts. The marketing package should consist of a general brochure, a technical brochure for distribution to interested enterprises, and sufficient supplemental information from the project opportunity studies to assist the marketing consultants to sell the specific locational advantages.

The technical brochure should contain the follow-up data required to give an investor specific knowledge to determine if he wishes to spend more time and money to pursue the free zone opportunities.

At a minimum, this description should contain the following information: name of the free zone, or industrial estate size, location, distance to business centers, and major markets (geographic), description of soils and land characteristics, assurances for loan bearing capability, drainage plan and topography, utility cost data, utility sizing data

(pressure, line sizes, capacities), transportation benefits, road data (costs of access roads, road widths, accessibility), site improvements available, security programs, customs procedures and coordination, lease rates, and services provided. In addition, general information should be included on: housing, health and medical facilities, recreational facilities, educational facilities, expansion potential, climate, business associations, employment availability, population size and projections, port rates, fire and security protection, development constraints.